

WAHKON CITY COUNCIL MEETING AGENDA
MONDAY, OCTOBER 13, 2025 @ 6:00 PM
WAHKON COMMUNITY HALL @ 151 - 2nd ST. E.

1. CALL TO ORDER
 - A) Pledge of Allegiance
 - B) Roll Call
 - C) Approval of Agenda
2. CONSENT AGENDA: All items listed shall be approved by one motion, unless removed.
 - A) Meeting Minutes: 9/8 Council Meeting, 9/24 Budget Meeting
 - B) New On Sale and Sunday Liquor License for El Limon, LLC 11/30-12/31(Mexican Restaurant)
 - C) LG555 – Mille Lacs Raiders Wrestling Club, \$1000 donation to Veterans Park
 - D) Charitable Gambling Report: Isle Lions Club 8/2025= \$1,635.88; Mille Lacs Drift Skippers 8/2025 \$2,020.11; Wahkon Days \$65.00
 - E) Treasurer’s Report 9/30 Ending Balance \$652,671.36 Cash; \$117,765.36 Investments; & Receipts Register
 - F) Interim Financial Monthly Analysis Reports
 - G) 2026 Budget Summary
 - H) Disbursement Register: Date Range 9/9 – 10/13 Total \$_____
3. PUBLIC HEARINGS & PETITIONS
4. ORDINANCES, RESOLUTIONS & POLICIES
 - A) **Resolution 2025-1013** – Resolution to Adopt Record Retention Policy
 - B) **Resolution 2025-1013A** – MnDOT Agreement No 10604455 with the State of Minnesota, Department of Transportation
 - C) **Resolution 2025-1013B** – Accepting Donations to the City of Wahkon
 - D) **Resolution 2025-1013C** – Conditional Use Permit for Octavio Perez dba: El Limon
 - E) **Resolution 2025-1013D** – Conditional Use Permit for Steve & Wendy Jesen for Autumn Peterson’s “Lake Haven Beauty and Spa”
5. NEW BUSINESS
 - A) CD Investment Renewals
 - B) Codification Cost
6. UNFINISHED BUSINESS
 - A) Sewer Project change order No. 2 (revised) for \$226,880.27.
 - B) Assignment & Assumption of Sanitary Sewer Service Agreement contract with New Owners of Mille Lacs Island Resort

7. REPORTS

- A) Wastewater
- B) Employee & Councilmember Updates
- C) Zoning
- D) Open Forum: Please limit to 3 minutes. Council will likely place issue on next month's agenda for full review.

8. ADJOURNMENT

Consent Agenda

The September 8, 2025 Wahkon City Council meeting was called to order by Mayor John William (Bill) Thompson at 6:00pm and began with the Pledge of Allegiance. Roll call: Councilmembers present: Rick Roberts, Chip Frederickson, Linda Jacobsen Mike Beck and Bill Thompson. Employees present: Public Works Supervisor Jacob Weinriech and Clerk/Treasurer Lori Stalker. Approval of agenda: Motion by Frederickson, second by Roberts to approve the agenda. Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously.

CONSENT AGENDA: All items listed shall be approved by one motion, unless removed. Motion by Frederickson, second by Roberts to approve consent agenda. Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously.

A)Meeting minutes: 9/11/2025

B)Charitable gambling Report: 7/2025 Isle Lions Club \$1054.83; Mille Lacs Drift Skippers (MLDS) \$zero

C)LG555 MLDS \$155 WAVE Wahkon Days & \$250 Veterans Park; Veterans Club Inc \$2000 Veterans Park

D)Treasurer's Report 8/31 Ending Balance \$781,305.00 Cash; \$249,487.77 Investments; & Receipts Register

E)Interim Financial Monthly Analysis Reports

F)Voided Check List 2025

G)Disbursement Register 9/8 Date Range 8/12-9/8 Total \$30,422.55

PUBLIC HEARINGS & PETITIONS Mayor Thompson opened the public hearing regarding Ordinance No. 2025-1 Amending Certain Fees charged By the City (2026 Schedule) The floor was open for public input. The only fees effected by this change are On Sale and Off Sale Liquor licenses. Motion by Beck, second by Jacobsen to close the public hearing. Ayes: Roberts Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously.

ORDINANCES, RESOLUTIONS & POLICIES: Ordinance No. 2025-1 Amending Certain Fees Charged By the City(2026 Fee Schedule). Motion by Beck, second by Jacobsen to ADOPT ORDINANCE NO. 2025-4 approving the 2026 Fee Schedule. Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously.

Resolution No. 2025-0908 Approving Summary Language for Publication of Ordinance No. 2025-1. Motion by Frederickson, second by Beck to approve Resolution No. 2025-0908 Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously.

Resolution No. 2025-0908A Accepting Donations to the City of Wahkon Motion by Roberts, second by Frederickson to approve Resolution 2025-0908A. Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously.

Resolution No. 2025-0908B Authorizing Wahkon Days Expenditure. Motion by Roberts, second by Frederickson to approve. Ayes: Roberts, Frederickson, Beck and Thompson. Councilperson Jacobsen abstained. Motion carried.

Resolution No. 2025-0908C Limited Use Permit No. 4804-0016 State of Minnesota Department of Transportation 2026 Main Street/Hwy 27 Project. Motion by Roberts, second by Frederickson to approve. Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously.

NEW BUSINESS: A complaint was filed regarding ditch cleaning on the State R.O.W. Mayor Thompson has advised that MN DOT needs to be contacted to clean up the hanging tree limbs that were cut.

Council will meet on Wednesday, September 24, 2025 at 9:00am to discuss the 2026 budget. Council discussed the contract for Mille Lacs Island Resort sale to Great American Resorts, Inc. Contract will be the same and will be signed when a closing date is established. We can set up a meeting with the new owners in November.

Engineer Dave Blommel joined the meeting via phone.

Sewer Change Order No 2 for \$178,638.74. Engineer Dave Blommel joined the meeting via phone. This change order consists for new control panels and covers for lift stations Motion by Frederickson, second by Roberts to approve. Ayes: Roberts, Frederickson, Jacobsen, Beck, Thompson. Motion carried unanimously.

UNFINISHED BUSINESS: Public Works Supervisor reported that the water meters are being installed, and the crew will be staying through until September 19th. As of tonight's meeting, 35 meters have been installed, 35 appointments still need to be set and five (5) cannot be installed due to location of the water tank.

The Petroleum Storage Tank Release: MPCA 4/16 letter is to be re-opened on advice from City Engineer Dave Blommel and City Attorney. They advised to accept the quote from Braun Intertec for \$14,715.00. The City will receive 90% of this expenditure back. Motion by Frederickson, second by Roberts to award the contract for Braun Intertec. Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Carried unanimously.

Councilwoman Jacobson addressed the council and public regarding the need for a permit from Mille Lacs Band to spray private property for mosquitos. Non-Band members do not need to obtain a permit to treat private property for mosquitoes.

REPORTS: Public Works Supervisor Weinrich advised the board regarding treatment for the sewer ponds.

Clerk/Treasurer Stalker reported that she will be attending the Mille Lacs Band Economic Summit in Hinckley.

There are two(2) CUPs coming through zoning. Mexican Restaurant and Salon.

With no other business or public comment, Motion by Beck, second by Jacobsen Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously. Meeting adjourned at 6:36pm.

Lori Stalker, Clerk/Treasurer

The September 24, 2025 special meeting of the Wahkon City Council was called to order by Mayor Bill Thompson at 9:00 am and began with the Pledge of Allegiance. Proper notice was posted for this special meeting. Roll Call: Council Members present: Rick Roberts, Chip Frederickson, Linda Jacobsen, Mike Beck and Bill Thompson. Employees present: Public Works Supervisor Jacob Weinreich, Clerk/Treasurer Lori Stalker and Temporary Deputy Clerk/Treasurer Karrie Roeschlein.

REVIEW 2026 BUDGETS: GENERAL: Council reviewed all budget lines. Discussion regarding entrance signs, this project may need to wait until the 2026 Main Street project is complete. Ellen Ruth park needs maintenance on the boat. It is registered as Historical Boat although not registered as a historical site. May be able to find help with funding through a grant, donations and/or fundraising. A new trash receptacle is also needed as the current one is badly damaged. We will need to look at options for the entrance door to the office to make it easier to enter and exit. Council agreed to set aside \$30,000 next year for a truck purchase in the next couple of years.

CHARITABLE GAMBLING: Fire protection fees are an allowed expense from this fund. Council agreed to donate \$250 to the Initiative Foundation.

WASTEWATER OPERATING: Bond will end in February 2026 with a principal of \$540,000 due.

MOTION TO ADOPT BUDGETS: Motion by Frederickson, second by Roberts to adopt General, Charitable Gambling and Wastewater 2026 budgets. Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously. General Receipts, \$342,143 and disbursements \$346,576; Charitable Gambling receipts \$10,000 and disbursement \$11,403; Wastewater receipts \$254,325 and disbursements \$779,209 (includes bond payment).

RESOLUTION NO. 2025-0924 "APPROVING FINAL 2025 TAX LEVY COLLECTIBLE IN 2026" Council agreed to raise the levy 5% over 2025, setting the levy at \$300,983. Motion by Frederickson, second by Roberts to adopt Resolution No. 2025-0924 setting the tax levy collectible in 2026 at \$300,983. Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Motion carried unanimously.

ADJOURNMENT Motion by Beck second by Jacobsen to adjourn. Ayes: Roberts, Frederickson, Jacobsen, Beck and Thompson. Meeting adjourned at 10:20 am.

Lori Stalker, Clerk/Treasurer

LG555 Government Approval or Acknowledgment for Use of Gambling Funds

Keep this completed form attached to the LG100C in your organization's records. You do not need to submit this form to the Gambling Control Board or the Department of Revenue.

ORGANIZATION AND EXPENDITURE INFORMATION (attach additional sheets if necessary)

Organization Name: Mille Lacs Raiders Wrestling Club	License Number: 31880
Address: PO Box 88	City/State/Zip: Onamia, MN 56359

1. Amount of proposed lawful purpose expenditure: \$1,000.00
2. Check one expenditure category:
- ☒ A. **Contribution to a unit of government**—United States, state of Minnesota, or any of its subdivisions, agencies, or instrumentalities.
- ☐ B. **Wildlife management project or activity** that benefits the public at large, with approval by the Minnesota Department of Natural Resources (DNR).
- ☐ C. **Grooming and maintaining snowmobile or all-terrain vehicle trails** established under Minnesota Statutes, Sections 84.83 and 84.927, including purchase or lease of equipment, with approval by the DNR. All trails must be open to public use.
- ☐ D. **Supplies and materials for safety training and educational programs** coordinated by the DNR, including the Enforcement Division.
- ☐ E. **Citizen monitoring of surface water quality testing** for public waters by individuals or nongovernmental organizations, with Minnesota Pollution Control Agency (MPCA) guidance on monitoring procedures, quality assurance protocols, and data management, providing that data is submitted to the MPCA.
3. Describe the proposed expenditure, including vendors:

See attached donation request.

- **NO FINANCIAL OR OTHER BENEFIT:** I affirm that the contribution or expenditure does not result in any monetary, economic, financial, or material benefit to our organization, in compliance with Minn. Rule 7861.0320, subp. 17, para. C.
- **FOR DNR-RELATED PROJECTS:** I affirm that when lawful gambling funds are used for grooming and maintaining snowmobile or all-terrain vehicle trails or for any wildlife management project for which reimbursement is received from a unit of government, the reimbursement funds must be deposited in our lawful gambling account and recorded on form LG100C.
- **FOR SURFACE WATER QUALITY TESTING:** I affirm that the MPCA has been consulted in developing the monitoring plan and that the data collected will be submitted to the MPCA. Send form for signature to: Manager, Water Monitoring Section, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, MN 55155. Website: www.pca.state.mn.us

Dawn M. Osterman
Chief Executive Officer's Signature

10/06/2025
Date

Dawn Osterman
Print Name

320-360-4396
Daytime Phone

GOVERNMENT APPROVAL/ACKNOWLEDGMENT

Contribution amount: \$1,000.00. Government use of contribution (check one):

- ☐ **Wildlife**—DNR approves the wildlife management project or activity.
- ☐ **Trails**—DNR approves the grooming/maintaining of snowmobile and/or all-terrain vehicle trails.
- ☐ **Safety training**—DNR approves the supplies/materials for DNR safety training and educational programs.
- ☐ **Water quality testing**—MPCA approves the surface water quality testing project.
- ☒ **Donation to other unit of government** (city, county, state, federal, or any of their subdivisions) provided the funds will not be used for a pension or retirement fund.

Unit of Government: City Of Wahkon

Phone: 320-495-3441

Address: 151 2nd st E

City/State/Zip: Wahkon MN 56386

By signature below, the representative of the unit of government acknowledges and approves the contribution amount for the use as listed above.

Lori Stalker
Signature

10-6-2025
Date

Lori Stalker
Print Name

Clerk/Treasurer
Title

Questions? Contact the Minnesota Gambling Control Board at 651-539-1900. This form will be made available in alternative format (i.e. large print, braille) upon request. The information requested on this form will become public information, when requested by the Board, and will be used to determine your compliance with Minnesota statutes and rules governing lawful gambling activities.

LG555 Government Approval or Acknowledgment for Use of Gambling Funds

02/16

Keep this completed form attached to the LG100C in your organization's records. You do not need to submit this form to the Gambling Control Board or the Department of Revenue.

ORGANIZATION AND EXPENDITURE INFORMATION (attach additional sheets if necessary)

Organization Name: Isle Lions Club	License Number: 01844
Address: P O BOX 747	City/State/Zip: Isle Minnesota 56342

1. Amount of proposed lawful purpose expenditure: \$1,635.88
2. Check one expenditure category:
- ☒ A. **Contribution to a unit of government**—United States, state of Minnesota, or any of its subdivisions, agencies, or instrumentalities.
- ☐ B. **Wildlife management project or activity** that benefits the public at large, with approval by the Minnesota Department of Natural Resources (DNR).
- ☐ C. **Grooming and maintaining snowmobile or all-terrain vehicle trails** established under Minnesota Statutes, Sections 84.83 and 84.927, including purchase or lease of equipment, with approval by the DNR. All trails must be open to public use.
- ☐ D. **Supplies and materials for safety training and educational programs** coordinated by the DNR, including the Enforcement Division.
- ☐ E. **Citizen monitoring of surface water quality testing** for public waters by individuals or nongovernmental organizations, with Minnesota Pollution Control Agency (MPCA) guidance on monitoring procedures, quality assurance protocols, and data management, providing that data is submitted to the MPCA.

3. Describe the proposed expenditure, including vendors:

City of Wahkon 10% fund

Aug 2025

- **NO FINANCIAL OR OTHER BENEFIT:** I affirm that the contribution or expenditure does not result in any monetary, economic, financial, or material benefit to our organization, in compliance with Minn. Rule 7861.0320, subp. 17, para. C.
- **FOR DNR-RELATED PROJECTS:** I affirm that when lawful gambling funds are used for grooming and maintaining snowmobile or all-terrain vehicle trails or for any wildlife management project for which reimbursement is received from a unit of government, the reimbursement funds must be deposited in our lawful gambling account and recorded on form LG100C.
- **FOR SURFACE WATER QUALITY TESTING:** I affirm that the MPCA has been consulted in developing the monitoring plan and that the data collected will be submitted to the MPCA. Send form for signature to: Manager, Water Monitoring Section, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, MN 55155. Website: www.pca.state.mn.us

Chief Executive Officer's Signature

Date

Craig Lemieux
Print Name

701-261-2341
Daytime Phone

GOVERNMENT APPROVAL/ACKNOWLEDGMENT

Contribution amount: \$1,635.88. Government use of contribution (check one):

- ☐ **Wildlife**—DNR approves the wildlife management project or activity.
- ☐ **Trails**—DNR approves the grooming/maintaining of snowmobile and/or all-terrain vehicle trails.
- ☐ **Safety training**—DNR approves the supplies/materials for DNR safety training and educational programs.
- ☐ **Water quality testing**—MPCA approves the surface water quality testing project.
- ☒ **Donation to other unit of government** (city, county, state, federal, or any of their subdivisions) provided the funds will not be used for a pension or retirement fund.

Unit of Government: City of Wahkon

Phone: 320-495-3441

Address: 151 Second St E

City/State/Zip: Wahkon, MN 56386

By signature below, the representative of the unit of government acknowledges and approves the contribution amount for the use as listed above.

Lori Stalker
Signature

Print Name

9-9-2025
Date
Clerk / Treasurer
Title

Questions? Contact the Minnesota Gambling Control Board at 651-539-1900. This form will be made available in alternative format (i.e. large print, braille) upon request. The information requested on this form will become public information, when requested by the Board, and will be used to determine your compliance with Minnesota statutes and rules governing lawful gambling activities.

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ORGANIZATION AND EXPENDITURE INFORMATION (attach additional sheets if necessary)

Organization

Name: Mille Lacs Drift Skippers

License

Number: 04206

Address: Po Box 916

City/State/Zip: Isle, MN, 56342

1. Amount of proposed lawful purpose expenditure: \$65.00

2. Check one expenditure category:

- ☒ A. **Contribution to a unit of government**—United States, state of Minnesota, or any of its subdivisions, agencies, or instrumentalities.
- ☐ B. **Wildlife management project or activity** that benefits the public at large, with approval by the Minnesota Department of Natural Resources (DNR).
- ☐ C. **Grooming and maintaining snowmobile or all-terrain vehicle trails** established under Minnesota Statutes, Sections 84.83 and 84.927, including purchase or lease of equipment, with approval by the DNR. All trails must be open to public use.
- ☐ D. **Supplies and materials for safety training and educational programs** coordinated by the DNR, including the Enforcement Division.
- ☐ E. **Citizen monitoring of surface water quality testing** for public waters by individuals or nongovernmental organizations, with Minnesota Pollution Control Agency (MPCA) guidance on monitoring procedures, quality assurance protocols, and data management, providing that data is submitted to the MPCA.

3. Describe the proposed expenditure, including vendors:

WAVE - Wahkon Days - \$65

R 8621

NO FINANCIAL OR OTHER BENEFIT: I affirm that the contribution or expenditure does not result in any monetary, economic, financial, or material benefit to our organization, in compliance with Minn. Rule 7861.0320, subp. 17, para. C.

FOR DNR-RELATED PROJECTS: I affirm that when lawful gambling funds are used for grooming and maintaining snowmobile or all-terrain vehicle trails or for any wildlife management project for which reimbursement is received from a unit of government, the reimbursement funds must be deposited in our lawful gambling account and recorded on form LG100C.

FOR SURFACE WATER QUALITY TESTING: I affirm that the MPCA has been consulted in developing the monitoring plan and that the data collected will be submitted to the MPCA. Send form for signature to: Manager, Water Monitoring Section, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, MN 55155. Website: www.mca.state.mn.us

Chief Executive Officer's Signature

Date

Melissa Ringler

612-201-0786

Print Name

Daytime Phone

GOVERNMENT APPROVAL/ACKNOWLEDGMENT

Contribution amount: \$65.00 Government use of contribution (check one):

- ☐ **Wildlife**—DNR approves the wildlife management project or activity.
- ☐ **Trails**—DNR approves the grooming/maintaining of snowmobile and/or all-terrain vehicle trails.
- ☐ **Safety training**—DNR approves the supplies/materials for DNR safety training and educational programs.
- ☐ **Water quality testing**—MPCA approves the surface water quality testing project.
- ☒ **Donation to other unit of government** (city, county, state, federal, or any of their subdivisions) provided the funds will not be used for a pension or retirement fund.

Unit of Government: CITY OF WAHKON

Phone: 320-495-3441

Address: Po Box 8

City/State/Zip: Wahkon, MN, 56386

By signature below, the representative of the unit of government acknowledges and approves the contribution amount for the use outlined above.

Signature

Date

K. Roeschlein

9-19-25

Print Name

Title

Chief Trees Deputy

Questions? Contact the Minnesota Gambling Control Board at 651-539-1900. This form will be made available in alternative format (i.e. large print, braille, etc.) upon request. Information requested on this form will become public information, when requested by the Board, and will be used to determine your compliance with Minnesota statutes and rules governing lawful gambling activities.

LG555 Government Approval or Acknowledgment for Use of Gambling Funds

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ORGANIZATION AND EXPENDITURE INFORMATION (attach additional sheets if necessary)

Organization
Name: Mille Lacs Drift Skippers

License
Number: 04206

Address: Po Box 916

City/State/Zip: Isle, MN, 56342

1. Amount of proposed lawful purpose expenditure: \$ 2,020.11 *LS*

2. Check one expenditure category:

- ☒ A. **Contribution to a unit of government**—United States, state of Minnesota, or any of its subdivisions, agencies, or instrumentalities.
- ☐ B. **Wildlife management project or activity** that benefits the public at large, with approval by the Minnesota Department of Natural Resources (DNR).
- ☐ C. **Grooming and maintaining snowmobile or all-terrain vehicle trails** established under Minnesota Statutes, Sections 84.83 and 84.927, including purchase or lease of equipment, with approval by the DNR. All trails must be open to public use.
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- ☐ E. **Citizen monitoring of surface water quality testing** for public waters by individuals or nongovernmental organizations, with Minnesota Pollution Control Agency (MPCA) guidance on monitoring procedures, quality assurance protocols, and data management, providing that data is submitted to the MPCA.

3. Describe the proposed expenditure, including vendors:

WAHKON 10%FUND

Aug 2025 R 8621

- **NO FINANCIAL OR OTHER BENEFIT:** I affirm that the contribution or expenditure does not result in any monetary, economic, financial, or material benefit to our organization, in compliance with Minn. Rule 7861.0320, subp. 17, para. C.
- **FOR DNR-RELATED PROJECTS:** I affirm that when lawful gambling funds are used for grooming and maintaining snowmobile or all-terrain vehicle trails or for any wildlife management project for which reimbursement is received from a unit of government, the reimbursement funds must be deposited in our lawful gambling account and recorded on form LG100C.
- **FOR SURFACE WATER QUALITY TESTING:** I affirm that the MPCA has been consulted in developing the monitoring plan and that the data collected will be submitted to the MPCA. Send form for signature to: Manager, Water Monitoring Section, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, MN 55155. Website: www.pca.state.mn.us

Chief Executive Officer's Signature

Date

Melissa Ringler
Print Name

612-201-0786
Daytime Phone

GOVERNMENT APPROVAL/ACKNOWLEDGMENT

Contribution amount: \$ 2,020.11. Government use of contribution (check one):

- ☐ **Wildlife**—DNR approves the wildlife management project or activity.
- ☐ **Trails**—DNR approves the grooming/maintaining of snowmobile and/or all-terrain vehicle trails.
- ☐ **Safety training**—DNR approves the supplies/materials for DNR safety training and educational programs.
- ☐ **Water quality testing**—MPCA approves the surface water quality testing project.
- ☒ **Donation to other unit of government** (city, county, state, federal, or any of their subdivisions) provided the funds will not be used for a pension or retirement fund.

Unit of Government: CITY OF WAHKON

Phone: 320-495-3441

Address: Po Box 8

City/State/Zip: Wahkon, MN, 56386

By signature below, the representative of the unit of government acknowledges and approves the contribution amount for the use as listed above.

Signature

Date

K. Roeschlein
Print Name

9-19-25
Clerk - Treas Deputy
Title

Questions? Contact the Minnesota Gambling Control Board at 651-539-1900. This form will be made available in alternative format (i.e. large print, braille) upon request. The information requested on this form will become public information, when requested by the Board, and will be used to determine your compliance with Minnesota statutes and rules governing lawful gambling activities.

For the Period : 9/1/2025 To 9/30/2025

<u>Name of Fund</u>	<u>Beginning Balance</u>	<u>Total Receipts</u>	<u>Total Disbursed</u>	<u>Ending Balance</u>	<u>Less Deposits In Transit</u>	<u>Plus Outstanding Checks</u>	<u>Total Per Bank Statement</u>
General Fund	\$215,380.72	\$2,301.54	\$25,247.87	\$192,434.39	\$0.00	\$100.00	\$192,534.39
Charitable Gambling	\$11,694.49	\$3,655.99	\$0.00	\$15,350.48	\$0.00	\$0.00	\$15,350.48
WAVE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Community Events	\$3,269.79	\$0.00	\$656.02	\$2,613.77	\$0.00	\$0.00	\$2,613.77
Public Safety	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Streets State Aid 4M	\$0.00	\$234.01	\$234.01	\$0.00	\$0.00	\$0.00	\$0.00
WW Emergency & Improvement	\$34,178.31	\$87.05	\$0.00	\$34,265.36	\$0.00	\$0.00	\$34,265.36
WW 2013A Refund Bonds DS	\$83,500.00	\$0.00	\$0.00	\$83,500.00	\$0.00	\$0.00	\$83,500.00
Dock	\$243.93	\$0.00	\$0.00	\$243.93	\$0.00	\$0.00	\$243.93
Main St 2026 Project	(\$36,150.00)	\$0.00	\$0.00	(\$36,150.00)	\$0.00	\$0.00	(\$36,150.00)
Veterans Park	(\$70.99)	\$0.00	\$0.00	(\$70.99)	\$0.00	\$0.00	(\$70.99)
Park Dedication Fee	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Wastewater Operating	\$314,030.61	\$12,897.46	\$3,907.03	\$323,021.04	\$0.00	\$0.00	\$323,021.04
WW 2023 Project	\$155,228.14	\$41.61	\$41.01	\$155,228.74	\$0.00	\$0.00	\$155,228.74
Total	\$781,305.00	\$19,217.66	\$30,085.94	\$770,436.72	\$0.00	\$100.00	\$770,536.72

As on 9/30/2025

Fund	Beginning Balance	Receipts	Sale of Investments	Transfers In	Disbursements	Purchase of Investments	Transfers Out	Ending Balance	Investment Balance	Total Balance
General Fund	203,740.19	184,677.42	0.00	20,000.00	215,983.22	0.00	0.00	192,434.39	0.00	192,434.39
Charitable Gambling	18,085.47	9,946.48	0.00	0.00	12,681.47	0.00	0.00	15,350.48	0.00	15,350.48
WAVE	4,872.56	0.00	0.00	0.00	4,872.56	0.00	0.00	0.00	0.00	0.00
Community Events	5,134.90	5,700.00	0.00	0.00	8,221.13	0.00	0.00	2,613.77	0.00	2,613.77
Public Safety	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Streets State Aid 4M	1,181.00	6,178.72	0.00	0.00	0.00	7,359.72	0.00	0.00	68,131.91	68,131.91
WW Emergency & Improvement	33,475.58	4,537.29	0.00	0.00	0.00	3,747.51	0.00	34,265.36	161,373.55	195,638.91
WW 2013A Refund Bonds DS	83,500.00	0.00	0.00	0.00	0.00	0.00	0.00	83,500.00	0.00	83,500.00
Dock	243.93	124.92	0.00	0.00	0.00	124.92	0.00	243.93	5,379.12	5,623.05
Main St 2026 Project	0.00	2,800.00	0.00	0.00	38,950.00	0.00	0.00	(36,150.00)	0.00	(36,150.00)
Veterans Park	1,750.00	9,008.95	0.00	0.00	10,620.99	208.95	0.00	(70.99)	8,997.72	8,926.73
Park Dedication Fee	1,600.00	0.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00
Wastewater Operating	291,138.10	190,166.43	18,900.00	0.00	157,183.49	0.00	20,000.00	323,021.04	0.00	323,021.04
WW 2023 Project	6,685.90	272,758.66	18,929.58	0.00	142,464.64	680.76	0.00	155,228.74	5,877.41	161,106.15
Total :	651,407.63	685,898.87	37,829.58	20,000.00	592,577.50	12,121.86	20,000.00	770,436.72	249,759.71	1,020,196.43

Fund Name: All Funds
Date Range: 09/01/2025 To 09/30/2025

Date	Remitter	Receipt #	Description	Deposit ID	Void	Account Name	F-A-P	Total
09/02/2025	Henze	8606	Usage #172	(09/02/2025) -	N	Rate Class I	602-37210-	\$ 200.00
								\$ 200.00
09/02/2025	SLS, 120, 139	8607	Usage	(09/02/2025) -	N	Rate Class I	602-37210-	\$ 319.89
								\$ 319.89
09/04/2025	MLBO, Muggs & Tulibee	8608	usage	(09/04/2025) -	N	Rate Class I	602-37210-	\$ 371.88
								\$ 371.88
09/05/2025	Zygoatian & MLBO	8609	Usage	(09/05/2025) -	N	Rate Class I	602-37210-	\$ 404.94
								\$ 404.94
09/08/2025	GAR/MLIR	8610	WW Test Reimbursement	(09/08/2025) -	N	Refunds & Reimbursements	602-36250-	\$ 148.00
								\$ 148.00
09/08/2025	Preston, Henze, Hall Rent	8611	Usage and hall rent	(09/08/2025) -	N	City/Town Hall Rent Rate Class I	100-34101- 602-37210-	\$ 50.00 \$ 235.53
								\$ 285.53
09/09/2025	Isle Lions	8612	CG 10%	(09/09/2025) -	N	Contributions and Donations from Private Sources	204-36230-	\$ 1,635.88
								\$ 1,635.88
09/10/2025	A. Lapinski	8613	CUP Fee	(09/10/2025) -	N	Zoning and Subdivision Fees	100-34103-	\$ 1,000.00
								\$ 1,000.00
09/10/2025	Great Amer Resort	8614	Usage	(09/10/2025) -	N	Rate Class I	602-37210-	\$ 8,549.00
								\$ 8,549.00
09/10/2025	big bear	8615	usage credit card	(09/10/2025) -	N	Rate Class I	602-37210-	\$ 12.40
								\$ 12.40
09/11/2025	Octavio Perez	8616	CUP fee & Escrow	(09/11/2025) -	N	Zoning and Subdivision Fees	100-34103-	\$ 1,000.00
								\$ 1,000.00

Fund Name: All Funds

Date Range: 09/01/2025 To 09/30/2025

<u>Date</u>	<u>Remitter</u>	<u>Receipt #</u>	<u>Description</u>	<u>Deposit ID</u>	<u>Void</u>	<u>Account Name</u>	<u>F-A-P</u>	<u>Total</u>
09/12/2025	monson	8617	usage	(09/12/2025) -	N	Rate Class I	602-37210-	\$ 136.82
								\$ 136.82
09/15/2025	beachside/frederickson	8618	usage	(09/15/2025) -	N	Rate Class I	602-37210-	\$ 351.22
								\$ 351.22
09/16/2025	jacobsen	8619	usage	(09/16/2025) -	N	Rate Class I	602-37210-	\$ 150.00
								\$ 150.00
09/18/2025	MLBO	8620	usage	(09/18/2025) -	N	Rate Class I	602-37210-	\$ 123.96
								\$ 123.96
09/19/2025	Driftskippers	8621	10% and WAVE donation	(09/26/2025) -	N	Contributions and Donations from Private Sources	100-36230-	\$ 65.00
						Contributions and Donations from Private Sources	204-36230-	\$ 2,020.11
								\$ 2,085.11
09/22/2025	Bjornson, MLBO. Jost	8622	Usage	(09/26/2025) -	N	Rate Class I	602-37210-	\$ 663.93
								\$ 663.93
09/24/2025	Jorgenson	8623	Usage	(09/26/2025) -	N	Rate Class I	602-37210-	\$ 785.08
								\$ 785.08
09/25/2025	Island View	8624	Usage	(09/26/2025) -	N	Rate Class I	602-37210-	\$ 268.58
								\$ 268.58
09/29/2025	Park Fees	8625	Park Fees	(09/30/2025) -	N	Park Fees	100-34780-	\$ 172.00
								\$ 172.00
09/30/2025	Street St Aid 4M fund	4M05-25	dividend reinvest	(09/30/2025) -	N	Net Increase (Decrease) in the Fair Value of Investments	212-36213-	\$ 234.01
								\$ 234.01
09/30/2025	Bonney	8626	Usage	(09/30/2025) -	N	Rate Class I	602-37210-	\$ 136.36
								\$ 136.36
09/30/2025	Perhsing/Ehlers	IAW37	Deposit from Perhsing/Ehlers	(09/30/2025)-	N	Sale of Investment	622-39990-	\$ 1.24

Fund Name: All Funds
Date Range: 09/01/2025 To 09/30/2025

<u>Date</u>	<u>Remitter</u>	<u>Receipt #</u>	<u>Description</u>	<u>Deposit ID</u>	<u>Void</u>	<u>Account Name</u>	<u>F-A-P</u>	<u>Total</u>
								<u>\$ 1.24</u>
09/30/2025	Perhsing/Ehlers	IAW38	Deposit from Perhsing/Ehlers	(09/30/2025)-	N	Sale of Investment	622-39990-	<u>\$ 0.60</u>
								<u>\$ 0.60</u>
09/30/2025	FNB	INT09-25	Sept Interest	(09/30/2025) -	N	Interest Earning	100-36210-	\$ 14.54
							301-36210-	\$ 87.05
							602-36210-	\$ 39.87
								<u>\$ 141.46</u>
09/30/2025	Pershing Ehlers Invest	PERS27-25	Dividend/Interst/Other	(09/30/2025) -	N	Interest Earning	622-36210-	<u>\$ 5.55</u>
								<u>\$ 5.55</u>
09/30/2025	Pershing Ehlers	PERS28-25	Accrued Interest	(09/30/2025) -	N	Interest Earning	622-36210-	\$ 34.22
								<u>\$ 34.22</u>
Total for Selected Receipts								<u>\$ 19,217.66</u>

As on 12/31/2025

General Fund

<u>Account Name</u>	<u>Acct No</u>	<u>Budget</u>	<u>Year to Date</u>	<u>Balance</u>	<u>% of Budget</u>	<u>January/ July</u>	<u>February/ August</u>	<u>March/ September</u>	<u>April/ October</u>	<u>May/ November</u>	<u>June/ December</u>
Receipts:											
General Property Taxes (31001 through 31299)	31001	286,650.00	163,925.59	122,724.41	57.2	0.00 158,874.94	4,950.65 100.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Total Acct 310		286,650.00	163,925.59	122,724.41	57.2	0.00 158,874.94	4,950.65 100.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Franchise Taxes	31810	4,500.00	4,290.30	209.70	95.3	0.00 0.00	4,290.30 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Total Acct 318		4,500.00	4,290.30	209.70	95.3	0.00 0.00	4,290.30 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Penalties and Interest on Ad valorem Taxes	31910	0.00	14.71	(14.71)	0.0	0.00 14.71	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Total Acct 319		0.00	14.71	(14.71)	0.0	0.00 14.71	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Alcoholic Beverages	32110	3,500.00	2,995.00	505.00	85.6	2,900.00 0.00	0.00 0.00	75.00 0.00	20.00 0.00	0.00 0.00	0.00 0.00
Total Acct 321		3,500.00	2,995.00	505.00	85.6	2,900.00 0.00	0.00 0.00	75.00 0.00	20.00 0.00	0.00 0.00	0.00 0.00
Local Government Aid	33401	15,000.00	0.00	15,000.00	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Total Acct 334		15,000.00	0.00	15,000.00	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
City/Town Hall Rent	34101	600.00	1,290.00	(690.00)	215.0	130.00 130.00	80.00 450.00	140.00 50.00	80.00 0.00	130.00 0.00	100.00 0.00
Zoning and Subdivision Fees	34103	1,000.00	3,675.00	(2,675.00)	367.5	635.00 100.00	50.00 0.00	125.00 2,000.00	340.00 0.00	125.00 0.00	300.00 0.00
Total Acct 341		1,600.00	4,965.00	(3,365.00)	310.3	765.00 230.00	130.00 450.00	265.00 2,050.00	420.00 0.00	255.00 0.00	400.00 0.00
Park Fees	34780	2,000.00	1,722.00	278.00	86.1	0.00 100.00	0.00 126.00	0.00 172.00	0.00 0.00	1,029.00 0.00	295.00 0.00
Total Acct 347		2,000.00	1,722.00	278.00	86.1	0.00 100.00	0.00 126.00	0.00 172.00	0.00 0.00	1,029.00 0.00	295.00 0.00
Court Fines	35101	400.00	383.29	16.71	95.8	26.66 0.00	0.00 66.66	0.00 0.00	0.00 0.00	0.00 0.00	289.97 0.00
Total Acct 351		400.00	383.29	16.71	95.8	26.66 0.00	0.00 66.66	0.00 0.00	0.00 0.00	0.00 0.00	289.97 0.00
Interest Earning	36210	200.00	126.52	73.48	63.3	18.56 18.74	14.22 16.99	12.99 14.54	11.92 0.00	11.44 0.00	7.12 0.00
Contributions and Donations from Private Sources	36230	1,300.00	3,040.00	(1,740.00)	233.8	1,135.00 145.00	260.00 155.00	140.00 65.00	700.00 0.00	285.00 0.00	155.00 0.00
Refunds & Reimbursements	36250	3,000.00	2,153.51	846.49	71.8	0.00 0.00	0.00 0.00	1,783.75 0.00	343.75 0.00	0.00 0.00	26.01 0.00

As on 12/31/2025

General Fund

<u>Account Name</u>	<u>Acct No</u>	<u>Budget</u>	<u>Year to Date</u>	<u>Balance</u>	<u>% of Budget</u>	<u>January/ July</u>	<u>February/ August</u>	<u>March/ September</u>	<u>April/ October</u>	<u>May/ November</u>	<u>June/ December</u>
Receipts:											
Community Events	36260	0.00	1,000.00	(1,000.00)	0.0	0.00	0.00	0.00	0.00	0.00	1,000.00
						0.00	0.00	0.00	0.00	0.00	0.00
Misc	36270	100.00	61.50	38.50	61.5	0.00	9.00	0.00	0.00	0.00	40.00
						0.00	12.50	0.00	0.00	0.00	0.00
Total Acct 362		4,600.00	6,381.53	(1,781.53)	138.7	1,153.56	283.22	1,936.74	1,055.67	296.44	1,228.13
						163.74	184.49	79.54	0.00	0.00	0.00
Transfer From Enterprise Fund	39202	20,000.00	20,000.00	0.00	100.0	0.00	0.00	0.00	0.00	0.00	0.00
						20,000.00	0.00	0.00	0.00	0.00	0.00
Total Acct 392		20,000.00	20,000.00	0.00	100.0	0.00	0.00	0.00	0.00	0.00	0.00
						20,000.00	0.00	0.00	0.00	0.00	0.00
Total Receipts		338,250.00	204,677.42	133,572.58	60.5	4,845.22	9,654.17	2,276.74	1,495.67	1,580.44	2,213.10
						179,383.39	927.15	2,301.54	0.00	0.00	0.00

As on 12/31/2025

General Fund

<u>Account Name</u>	<u>Acct No</u>	<u>Budget</u>	<u>Year to Date</u>	<u>Balance</u>	<u>% of Budget</u>	<u>January/ July</u>	<u>February/ August</u>	<u>March/ September</u>	<u>April/ October</u>	<u>May/ November</u>	<u>June/ December</u>
Disbursements:											
General Government	41101	33,900.00	38,567.88	(4,667.88)	113.8	2,164.51	5,641.30	1,369.31	10,480.06	5,318.86	1,969.98
						4,956.85	4,683.29	1,983.72	0.00	0.00	0.00
Council/Town Board	41110	10,600.00	8,028.61	2,571.39	75.7	667.71	667.12	959.85	800.18	658.66	1,818.11
						1,013.08	800.18	643.72	0.00	0.00	0.00
Total Acct 411		44,500.00	46,596.49	(2,096.49)	104.7	2,832.22	6,308.42	2,329.16	11,280.24	5,977.52	3,788.09
						5,969.93	5,483.47	2,627.44	0.00	0.00	0.00
Elections	41410	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
						0.00	0.00	0.00	0.00	0.00	0.00
Clerk	41425	84,525.00	70,243.86	14,281.14	83.1	6,155.42	5,994.99	6,012.83	5,807.83	6,542.99	9,345.08
						7,284.93	9,017.74	14,082.05	0.00	0.00	0.00
Total Acct 414		84,525.00	70,243.86	14,281.14	83.1	6,155.42	5,994.99	6,012.83	5,807.83	6,542.99	9,345.08
						7,284.93	9,017.74	14,082.05	0.00	0.00	0.00
Planning and Zoning	41910	8,650.00	5,601.64	3,048.36	64.8	501.37	568.80	0.00	773.42	1,229.90	510.00
						972.75	393.90	651.50	0.00	0.00	0.00
General Government Buildings and Plant	41940	31,800.00	22,429.35	9,370.65	70.5	3,060.97	3,014.16	2,517.32	2,530.81	3,452.54	2,330.95
						1,696.78	1,859.93	1,965.89	0.00	0.00	0.00
ARPA	41999	10,000.00	0.00	10,000.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
						0.00	0.00	0.00	0.00	0.00	0.00
Total Acct 419		50,450.00	28,030.99	22,419.01	55.6	3,562.34	3,582.96	2,517.32	3,304.23	4,682.44	2,840.95
						2,669.53	2,253.83	2,617.39	0.00	0.00	0.00
Streets	43101	109,850.00	26,500.27	83,349.73	24.1	4,935.90	780.67	1,147.70	1,767.79	2,252.92	5,574.94
						1,621.12	6,284.78	2,134.45	0.00	0.00	0.00
Ice and Snow Removal	43125	14,400.00	15,040.84	(640.84)	104.5	8,271.90	4,644.79	424.04	1,700.11	0.00	0.00
						0.00	0.00	0.00	0.00	0.00	0.00
Street Lighting	43160	7,500.00	5,362.34	2,137.66	71.5	605.79	605.79	605.79	605.79	605.79	605.79
						606.02	560.79	560.79	0.00	0.00	0.00
Total Acct 431		131,750.00	46,903.45	84,846.55	35.6	13,813.59	6,031.25	2,177.53	4,073.69	2,858.71	6,180.73
						2,227.14	6,845.57	2,695.24	0.00	0.00	0.00
Park Areas	45202	23,600.00	17,507.49	6,092.51	74.2	548.82	34.96	25.54	99.90	3,619.63	4,027.89
						3,820.13	2,544.87	2,785.75	0.00	0.00	0.00
Community Events	45210	4,050.00	6,701.00	(2,651.00)	165.5	0.00	0.00	0.00	0.00	0.00	2,320.00
						2,236.62	1,704.38	440.00	0.00	0.00	0.00
Total Acct 452		27,650.00	24,208.49	3,441.51	87.6	548.82	34.96	25.54	99.90	3,619.63	6,347.89
						6,056.75	4,249.25	3,225.75	0.00	0.00	0.00
Unallocated Expenditures	49201	0.00	(0.06)	0.06	0.0	(0.01)	0.00	(0.02)	(0.02)	(0.01)	0.04
						(0.01)	(0.03)	0.00	0.00	0.00	0.00
Total Acct 492		0.00	(0.06)	0.06	0.0	(0.01)	0.00	(0.02)	(0.02)	(0.01)	0.04
						(0.01)	(0.03)	0.00	0.00	0.00	0.00

As on 12/31/2025

General Fund

<u>Account Name</u>	<u>Acct No</u>	<u>Budget</u>	<u>Year to Date</u>	<u>Balance</u>	<u>% of Budget</u>	<u>January/ July</u>	<u>February/ August</u>	<u>March/ September</u>	<u>April/ October</u>	<u>May/ November</u>	<u>June/ December</u>
Disbursements:											
Purchase of Investments	49350	15,000.00	0.00	15,000.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
						0.00	0.00	0.00	0.00	0.00	0.00
Total Acct 493		15,000.00	0.00	15,000.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
						0.00	0.00	0.00	0.00	0.00	0.00
Total Disbursements		353,875.00	215,983.22	137,891.78	61.0	26,912.38	21,952.58	13,062.36	24,565.87	23,681.28	28,502.78
						24,208.27	27,849.83	25,247.87	0.00	0.00	0.00

As on 12/31/2025

Wastewater Operating

<u>Account Name</u>	<u>Acct No</u>	<u>Budget</u>	<u>Year to Date</u>	<u>Balance</u>	<u>% of Budget</u>	<u>January/ July</u>	<u>February/ August</u>	<u>March/ September</u>	<u>April/ October</u>	<u>May/ November</u>	<u>June/ December</u>
Receipts:											
Principal on Special Assessments	31951	4,000.00	4,169.97	(169.97)	104.2	0.00	150.00	0.00	0.00	0.00	0.00
						4,019.97	0.00	0.00	0.00	0.00	0.00
Penalties and Interest on Special Assessments	31952	1,000.00	1,729.84	(729.84)	173.0	0.00	70.50	0.00	0.00	0.00	0.00
						1,659.34	0.00	0.00	0.00	0.00	0.00
Total Acct 319		5,000.00	5,899.81	(899.81)	118.0	0.00	220.50	0.00	0.00	0.00	0.00
						5,679.31	0.00	0.00	0.00	0.00	0.00
Interest Earning	36210	80.00	320.26	(240.26)	400.3	29.29	27.82	33.90	38.61	35.24	36.46
						38.04	41.03	39.87	0.00	0.00	0.00
Refunds & Reimbursements	36250	0.00	287.90	(287.90)	0.0	139.90	0.00	0.00	0.00	0.00	0.00
						0.00	0.00	148.00	0.00	0.00	0.00
Total Acct 362		80.00	608.16	(528.16)	760.2	169.19	27.82	33.90	38.61	35.24	36.46
						38.04	41.03	187.87	0.00	0.00	0.00
Rate Class I	37210	242,000.00	183,258.46	58,741.54	75.7	31,103.81	17,548.18	12,156.36	32,669.58	17,250.18	10,577.05
						31,357.98	17,885.73	12,709.59	0.00	0.00	0.00
Connection/Reconnection Fees	37250	300.00	400.00	(100.00)	133.3	200.00	0.00	0.00	0.00	0.00	200.00
						0.00	0.00	0.00	0.00	0.00	0.00
Total Acct 372		242,300.00	183,658.46	58,641.54	75.8	31,303.81	17,548.18	12,156.36	32,669.58	17,250.18	10,777.05
						31,357.98	17,885.73	12,709.59	0.00	0.00	0.00
Sale of Investment	39990	20,520.00	18,900.00	1,620.00	92.1	9,450.00	0.00	0.00	0.00	0.00	0.00
						9,450.00	0.00	0.00	0.00	0.00	0.00
Total Acct 399		20,520.00	18,900.00	1,620.00	92.1	9,450.00	0.00	0.00	0.00	0.00	0.00
						9,450.00	0.00	0.00	0.00	0.00	0.00
Total Receipts		267,900.00	209,066.43	58,833.57	78.0	40,923.00	17,796.50	12,190.26	32,708.19	17,285.42	10,813.51
						46,525.33	17,926.76	12,897.46	0.00	0.00	0.00

As on 12/31/2025

Wastewater Operating

<u>Account Name</u>	<u>Acct No</u>	<u>Budget</u>	<u>Year to Date</u>	<u>Balance</u>	<u>% of Budget</u>	<u>January/ July</u>	<u>February/ August</u>	<u>March/ September</u>	<u>April/ October</u>	<u>May/ November</u>	<u>June/ December</u>
Disbursements:											
Insurance	41970	4,800.00	4,318.00	482.00	90.0	0.00	0.00	0.00	0.00	4,297.00	0.00
						0.00	0.00	21.00	0.00	0.00	0.00
Total Acct 419		4,800.00	4,318.00	482.00	90.0	0.00	0.00	0.00	0.00	4,297.00	0.00
						0.00	0.00	21.00	0.00	0.00	0.00
Bond Principal	47110	85,000.00	85,000.00	0.00	100.0	85,000.00	0.00	0.00	0.00	0.00	0.00
						0.00	0.00	0.00	0.00	0.00	0.00
Total Acct 471		85,000.00	85,000.00	0.00	100.0	85,000.00	0.00	0.00	0.00	0.00	0.00
						0.00	0.00	0.00	0.00	0.00	0.00
Interest - Bonds	47210	23,520.00	23,516.25	3.75	100.0	12,257.50	0.00	0.00	0.00	0.00	0.00
						11,258.75	0.00	0.00	0.00	0.00	0.00
Total Acct 472		23,520.00	23,516.25	3.75	100.0	12,257.50	0.00	0.00	0.00	0.00	0.00
						11,258.75	0.00	0.00	0.00	0.00	0.00
Transfer To Governmental Fund	49360	20,000.00	20,000.00	0.00	100.0	0.00	0.00	0.00	0.00	0.00	0.00
						20,000.00	0.00	0.00	0.00	0.00	0.00
Total Acct 493		20,000.00	20,000.00	0.00	100.0	0.00	0.00	0.00	0.00	0.00	0.00
						20,000.00	0.00	0.00	0.00	0.00	0.00
Sewer Utilities - Sewer Lift Stations	49470	21,602.00	8,320.63	13,281.37	38.5	2,069.52	487.40	2,490.76	511.72	550.76	571.99
						574.59	555.37	508.52	0.00	0.00	0.00
Sewer Utilities - Sewer Mains	49475	6,000.00	0.00	6,000.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
						0.00	0.00	0.00	0.00	0.00	0.00
Sewer Utilities - Sewage Treatment Plants	49480	21,000.00	8,798.50	12,201.50	41.9	279.80	0.00	0.00	260.00	1,160.70	128.00
						3,102.00	3,858.00	10.00	0.00	0.00	0.00
Sewer Utilities - Administration and General	49490	56,150.00	27,230.11	28,919.89	48.5	2,952.59	2,577.43	3,448.52	2,513.05	3,141.08	4,069.78
						3,198.27	1,961.88	3,367.51	0.00	0.00	0.00
Total Acct 494		104,752.00	44,349.24	60,402.76	42.3	5,301.91	3,064.83	5,939.28	3,284.77	4,852.54	4,769.77
						6,874.86	6,375.25	3,886.03	0.00	0.00	0.00
Total Disbursements		238,072.00	177,183.49	60,888.51	74.4	102,559.41	3,064.83	5,939.28	3,284.77	9,149.54	4,769.77
						38,133.61	6,375.25	3,907.03	0.00	0.00	0.00

As on 12/31/2025

Charitable Gambling

<u>Account Name</u>	<u>Acct No</u>	<u>Budget</u>	<u>Year to Date</u>	<u>Balance</u>	<u>% of Budget</u>	<u>January/ July</u>	<u>February/ August</u>	<u>March/ September</u>	<u>April/ October</u>	<u>May/ November</u>	<u>June/ December</u>
Receipts:											
Contributions and Donations from Private Sources	36230	12,000.00	9,946.48	2,053.52	82.9	0.00 971.18	1,020.06 1,054.83	245.98 3,655.99	379.00 0.00	285.28 0.00	2,334.16 0.00
Total Acct 362		12,000.00	9,946.48	2,053.52	82.9	0.00 971.18	1,020.06 1,054.83	245.98 3,655.99	379.00 0.00	285.28 0.00	2,334.16 0.00
Total Receipts		12,000.00	9,946.48	2,053.52	82.9	0.00 971.18	1,020.06 1,054.83	245.98 3,655.99	379.00 0.00	285.28 0.00	2,334.16 0.00
Disbursements:											
General Government	41101	250.00	250.00	0.00	100.0	0.00 0.00	250.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Total Acct 411		250.00	250.00	0.00	100.0	0.00 0.00	250.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Crime Control and Investigation	42120	1,000.00	0.00	1,000.00	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Total Acct 421		1,000.00	0.00	1,000.00	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Fire Fighting	42220	10,828.00	10,828.17	(0.17)	100.0	0.00 0.00	0.00 0.00	10,828.17 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Total Acct 422		10,828.00	10,828.17	(0.17)	100.0	0.00 0.00	0.00 0.00	10,828.17 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Park Areas	45202	1,500.00	1,603.30	(103.30)	106.9	1,603.30 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Total Acct 452		1,500.00	1,603.30	(103.30)	106.9	1,603.30 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Total Disbursements		13,578.00	12,681.47	896.53	93.4	1,603.30 0.00	250.00 0.00	10,828.17 0.00	0.00 0.00	0.00 0.00	0.00 0.00

CITY OF WAHKON SUMMARY BUDGET STATEMENT

The purpose of this report is to provide 2026 budget summary to interested citizens. Budget is published in accordance with Minn. Stat. Sec. 47.6965. Complete budget may be examined at Wahkon City Hall 151 – 2nd St. E, Wahkon, MN 56386. The City Council approved these budgets on September 24, 2025

GOVERNMENTAL FUNDS	2024 Actual	2025 Budget	2026 Adopted
REVENUES			
Property Taxes (31001/31910)	266,628	286,650	300,983
Other Taxes (31810)	4,461	4,500	4,290
Licenses & Permits (32110/34103)	5,201	4,500	7,550
Intergovernmental Revenues State (33180/90/33401)	0	15,000	0
Charges for Services (34101/34780)	3,272	2,600	3,100
Fines & Forfeits (35101)	415	400	400
Misc. Revenues (36230/50/70/39101)	7,780	4,400	5,630
Interest Earnings (36210)	220	200	190
10% Charitable Gambling (204-36230)	11,005	12,000	10,000
TOTAL REVENUES	298,982	330,250	332,143
EXPENDITURES			
General Government (41000)	161,415	169,475	161,483
Public Safety (42000)	10,313	11,828	11,153
Streets & Highways (43000)	30,631	39,750	36,450
Culture & Recreation (45000)	26,700	27,650	25,950
Street Construction (401)	121,059	92,000	66,193
Capital Outlay (500s)	465	10,000	56,500
TOTAL EXPENDITURES	350,583	350,703	357,729
Excess Revenues over (under) Expenditures	(51,601)	(20,453)	(25,586)
Other Financing Sources (Uses)			
Transfers (39202)	20,000	20,000	20,000
Excess (deficiency) of Revenues and Other Financing Sources	(31,601)	(453)	(5,586)
PROPERTY TAX LEVY REQUIREMENT TO FUND THIS BUDGET	273,000	286,650	300,983

WASTEWATER ENTERPRISE FUNDS

	2024 Actual	2025 Budget	2026 Adopted
REVENUES			
Operating	263,048	262,820	243,900
Principal, Penalties & Interest (31951/52/36210)	11,763	5,080	10,425
EXPENDITURES			
Operating	44,655	60,950	92,950
Debt Service Payments (47110/47210)	107,279	108,520	636,259
Gross Income (Loss)	122,877	98,430	(474,884)
NON-OPERATING REVENUES (EXPENSES)			
Investment/Savings Int Earnings	0	50,520	3,300
Income (Loss) Before Operating Transfers	122,877	148,950	(471,584)
OPERATING TRANSFERS IN (OUT)	(20,000)	(20,000)	(20,000)
NET INCOME (LOSS)	102,877	128,950	(491,584)

WW 2024 Proj expenses began to be pd from Oper (602) until interim bond recd (622). Exp to be reimbursed thru USDA/ACOE Grant/Loan pkg to be finalized 2026

Published Messenger

Posted _____: Wahkon Post Office, City Hall & Website

Disbursement Register

Available night of the
meeting

Ordinances,
Resolutions & Policies

**CITY OF WAHKON
STATE OF MINNESOTA
RESOLUTION 2025-1013**

RESOLUTION TO ADOPT RECORDS RETENTION POLICY

WHEREAS, the City of Wahkon recognizes the importance of maintaining and managing public records in a consistent, secure, and legally compliant manner; and

WHEREAS, Minnesota Statutes §138.17 requires cities to adopt a records retention schedule approved by the Minnesota Records Disposition Panel or to seek approval for the destruction of records not listed on an approved schedule; and

WHEREAS, the City of Wahkon desires to adopt the Minnesota General Records Retention Schedule for Cities, as developed by the Minnesota Historical Society, to ensure proper management, retention, and disposal of city records including paper records and electronic records;

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF WAHKON,
MINNESOTA:**

1. The City hereby adopts the Minnesota General Records Retention Schedule for Cities as its official records retention policy.
2. The City Clerk is authorized to implement and maintain the schedule, including the secure destruction of records in accordance with the schedule and applicable laws.
3. The City Clerk shall file the Notification of Adoption with the Minnesota Historical Society as required.
4. All departments of the City shall comply with the adopted schedule and coordinate with the City Clerk for proper records management.
5. This resolution shall take effect immediately upon its adoption

WHEREUPON, said resolution was duly adopted this 13th day of October, 2025.

Bill Thompson, Mayor

ATTEST:

Lori Stalker, Clerk~Treasurer

CITY OF WAHKON

151 – 2nd Street E
PO Box 8
Wahkon, MN 56386

RESOLUTION NO. 2025-1013A

MnDOT Agreement No 10604455 with the State of Minnesota, Department of Transportation

IT IS RESOLVED, that Mille Lacs County enter into MnDOT Agreement No. 1060455 with the State of Minnesota, Department of Transportation for the following purposes:

To provide for sponsorship of Federal Aid funds to the City of Wahkon for the shared use path, lighting, aesthetics, landscaping and Pedestrian Crosswalk Flasher System construction and other associated construction to be performed upon, along, and adjacent to Trunk Highway No. 27 from 750 feet north of County State Aid Highway No. 17 to 3,070 feet north of County State Aid Highway No. 17 under State Project No. 4804-23.

IT IS FURTHER RESOLVED that the Mayor and the Clerk/Treasurer are authorized to execute the Agreement and any amendments to the Agreement.

WHEREUPON, said resolution was duly adopted this 13th day of October 2025.

Attest:

John William (Bill) Thompson
Mayor

Lori Stalker
City Clerk/Treasurer

I certify that the above Resolution is an accurate copy of the Resolution adopted by the Council of the City of Wahkon at an authorized meeting held on the 13th Day of October, 2025, as shown by the minutes of the meeting in my possession.

Subscribed and sworn to me this 13th day of October, 2025.

Notary Public _____

My Commission Expires _____

(Signature)

(Type or Print Name)

(Title)

**CITY OF WAHKON
MILLE LACS COUNTY
STATE OF MINNESOTA**

RESOLUTION NO. 2025-1013B

RESOLUTION ACCEPTING DONATIONS TO THE CITY OF WAHKON

WHEREAS, the City of Wahkon (the “City”) is a municipal corporation, organized under the laws of the State of Minnesota; and

WHEREAS, pursuant to Minnesota Statutes, section 465.03, the City is authorized to accept donations for the benefit of its citizens in accordance with the terms prescribed by the donor; and

WHEREAS, the City Council finds that it is appropriate to accept the donations outlined below:

<u>Name of Donor</u>	<u>Amount</u>	<u>Use of Donation</u>
Mille Lacs Drift Skippers (R8621)	\$ 2,020.11	10% C.G
Mille Lacs Drift Skippers (R8621)	\$ 65.00	WAVE Wahkon Days
Mille Lacs Raiders (R8631)	\$ 1,000.00	Veterans Park
Isle Lions Club (R8612)	\$ 1,635.88	10% C.G.
TOTAL DONATIONS	\$ 4,720.99	

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF WAHKON, MINNESOTA, AS FOLLOWS:

1. The recitals stated above are hereby incorporated into this Resolution as if restated herein.
2. The donations contemplated in this Resolution are hereby accepted pursuant to Minnesota Statutes, section 465.03.
3. City staff is hereby directed to issue receipts to the above listed donors acknowledging the City’s receipt of the donations and to take all other actions that are necessary or convenient as contemplated by the intent of this Resolution.

Approved by the City Council of the City of Wahkon, Minnesota, this 13th day of October, 2025.

John William (Bill) Thompson, Mayor

ATTEST:

Lorice (Lori) Stalker, Clerk/Treasurer

(Reserved for Recorder)

**CITY OF WAHKON
RESOLUTION 2025-1013C
CONDITIONAL USE APPROVAL FOR
EL LIMON, LLC**

**A RESOLUTION APPROVING A CONDITIONAL USE PERMIT FOR A
COMMERCIAL RESTAURANT WITH ON-SALE LIQUOR**

WHEREAS, on September 29, 2025, following a duly noticed public hearing, the City of Wahkon Planning Commission reviewed and recommended approval of a Conditional Use Permit request submitted by Octavio Perez C. of El Limon, LLC to operate a commercial restaurant with on-sale liquor; and

WHEREAS, the City Council of the City of Wahkon has reviewed the Planning Commission's recommendation and supporting documentation; and

WHEREAS, in accordance with the provisions of the City of Wahkon Land Use Ordinance and pursuant to the requirements of Chapter 462 of the Minnesota Statutes, the approved Conditional Use Permit authorizes the above-named applicants to operate a commercial restaurant business with on-sale liquor within the Mixed Municipal Zoning District on the following property located in the City of Wahkon, Mille Lacs County:

Parcel Number: 25-040-0950

Parcel Address: 185 North Main Street, Wahkon

Legal Description: As defined in Exhibit A (attached).

WHEREAS, the approval was made based on the following findings of fact and with the following conditions of approval:

FINDINGS OF FACT:

1. The proposed commercial restaurant will not be detrimental to or endanger the public health, safety, comfort, convenience, or general welfare of the neighborhood or the City of Wahkon.

2. The commercial restaurant will be operated and maintained in a manner that is compatible with the existing and intended character of the general vicinity and will not change the essential character of the area.
3. The proposed use will not be hazardous or disturbing to existing or future neighboring uses.
4. The operation of the commercial restaurant will not involve activities, processes, materials, equipment, or conditions that are detrimental to persons, property, or the general welfare due to excessive traffic, noise, smoke, fumes, scenic blight, glare, or odors.
5. Any lighting associated with the commercial restaurant, including signage, will not impair the enjoyment of nearby property, negatively affect property owners in the vicinity, or pose a hazard to the traveling public.
6. The commercial restaurant use is in conformance with the provisions of the City's Ordinance and will not unreasonably interfere with the health, safety, and welfare of surrounding property owners or the public, provided the conditions of approval are met.
7. Adequate provisions have been made for parking, traffic flow, and traffic safety so that the commercial restaurant will not become or create a nuisance.
8. The proposed use is allowed under City Ordinance through an approved Conditional Use Permit.
9. Reasonable efforts were made to notify the public and surrounding properties regarding the proposed Conditional Use Permit.
10. On 9/29/25, the Planning Commission held a public hearing on the proposed use and took public comments.

CONDITIONS OF APPROVAL:

1. The commercial restaurant shall comply with all applicable City Ordinances and state regulations.
2. If there are any other future changes or construction on the property, the applicant will need to complete a land use application.
3. Adequate parking shall be maintained on site in accordance with City of Wahkon standards.
4. Exterior lighting and signage shall be directed and shielded to minimize impacts on neighboring properties and the traveling public.
5. Noise and waste disposal shall be managed in a manner that does not create a nuisance for surrounding properties.
6. Any additional conditions deemed necessary by City staff or the City Council of the City of Wahkon to protect the public health, safety, and welfare shall be followed.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Wahkon, Minnesota, that the Conditional Use Permit for El Limon LLC to operate a commercial business with on-sale liquor at 185 North Main Street, Wahkon, is hereby approved, subject to the findings of facts and conditions listed above.

I certify that the above is a true and correct statement based on the minutes and action by the Wahkon City Council meeting that was held on October 13th of 2025.

Lori Stalker – City Clerk

Date _____

John William (Bill) Thompson – Mayor

Date _____

THIS INSTRUMENT DRAFTED BY:
City of Wahkon
151 2nd Street East
Wahkon, MN 56386

EXHIBIT A
Legal Description

Lots 9, 10, 11, and 1, Block 16, Wahkon, Mille Lacs County, Minnesota

STAFF MEMO

Department: Zoning Administration	Meeting Date: October 13, 2025
Agenda Section: New Business	Item: Conditional Use Permit (CUP) – Commercial Restaurant with On-Sale Liquor

PREVIOUS PLANNING COMMISSION REVIEW OR ACTION: Reviewed application and recommended approval.

COUNCIL REVIEW OR ACTION: Review and adopt as recommended by Planning Commission.

PROPOSED BUDGET/FISCAL IMPACT: N/A.

OPPORTUNITY COST IF APPROVED: N/A.

BACKGROUND:

Applicant Information:	Octavio Perez C. of El Limon, LLC
Current Zoning:	Mixed Municipal (MM)
Applications Proposed:	Operate commercial restaurant with on-sale liquor
Location:	185 Main Street North, Wahkon

Octavio Perez applied for a Conditional Use Permit (CUP) for parcel 25-040-0950 located at 185 North Main Street to operate a commercial restaurant with on-sale liquor. The current zoning district is Mixed Municipal (MM). The previous use of the building was a restaurant, but a current CUP was not recorded or on file. The applicant plans to change the current awning on the outside of the building, which will require review from City staff and zoning administration.

ATTACHMENTS: Resolution and supporting documents.

(Reserved for Recorder)

**CITY OF WAHKON
RESOLUTION 2025-1013D
CONDITIONAL USE APPROVAL FOR
STEVEN C. JENSEN AND WENDY L. JENSEN**

A RESOLUTION APPROVING A CONDITIONAL USE PERMIT FOR A SALON AND SPA

WHEREAS, on September 29, 2025, following a duly noticed public hearing, the City of Wahkon Planning Commission reviewed and recommended approval of a Conditional Use Permit request submitted on behalf of Steven C. Jensen and Wendy L. Jensen for Autumn Peterson to operate a Salon and Spa; and

WHEREAS, the City Council of the City of Wahkon has reviewed the Planning Commission's recommendation and supporting documentation; and

WHEREAS, in accordance with the provisions of the City of Wahkon Land Use Ordinance and pursuant to the requirements of Chapter 462 of the Minnesota Statutes, the approved Conditional Use Permit authorizes the above-named applicants to operate a commercial salon and spa business within the Mixed Municipal Zoning District on the following property located in the City of Wahkon, Mille Lacs County:

Parcel Number: 25-040-0470

Parcel Address: 260 North Main Street, Wahkon, MN

Legal Description: As defined in Exhibit A (attached).

WHEREAS, the approval was made based on the following findings of fact and with the following conditions of approval:

FINDINGS OF FACT:

1. The proposed salon and spa will not be detrimental to or endanger the public health, safety, comfort, convenience, or general welfare of the neighborhood or the City of Wahkon, as the use provides professional services in a controlled indoor environment.

2. The salon and spa will be operated and maintained in a manner that is compatible with the existing and intended character of the general vicinity and will not change the essential character of the area, as personal care services are consistent with commercial activity within the City of Wahkon.
3. The proposed use will not be hazardous or disturbing to existing or future neighboring uses, as salon and spa operations are low-impact and primarily appointment-based, limiting disturbances.
4. The operation of the salon and spa will not involve activities, processes, materials, equipment, or conditions that are detrimental to persons, property, or the general welfare due to excessive traffic, noise, smoke, fumes, scenic blight, glare, or odors.
5. Any lighting associated with the salon and spa, including signage, will not impair the enjoyment of nearby property, negatively affect property owners in the vicinity, or pose a hazard to the traveling public, as lighting will be designed to meet ordinance standards.
6. The salon and spa use is in conformance with the provisions of the City's Ordinance and will not unreasonably interfere with the health, safety, and welfare of surrounding property owners or the public, provided the conditions of approval are met.
7. Adequate provisions have been made for parking, traffic flow, and traffic safety so that the salon and spa will not become or create a nuisance, as the use is expected to generate limited traffic consistent with a small business.
8. The proposed use is allowed under City Ordinance through an approved Conditional Use Permit.
9. Reasonable efforts were made to notify the public and surrounding properties regarding the proposed Conditional Use Permit.
10. On 9/29/25, the Planning Commission held a public hearing on the proposed use and took public comments.

CONDITIONS OF APPROVAL:

1. The salon and spa will comply with all applicable City Ordinances, state regulations, and licensing requirements for personal care services.
2. Adequate off-street parking shall be provided and maintained on site in accordance with City standards, with safe access and circulation for clients and staff.
3. Exterior lighting and signage shall be directed and shielded to minimize impacts on neighboring properties and the traveling public.
4. Noise, client activity, and waste disposal (including chemical or product waste) shall be managed in a manner that does not create a nuisance for surrounding properties.
5. All operations will comply with applicable fire and safety codes, including proper storage and handling of supplies and products.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Wahkon, Minnesota, that the Conditional Use Permit for Steven C. Jensen and Wendy L. Jensen on behalf of Autumn

Peterson to operate a Salon and Spa at 260 North Main Street, Wahkon, is hereby approved, subject to the findings of facts and conditions listed above.

I certify that the above is a true and correct statement based on the minutes and action by the Wahkon City Council meeting that was held on October 13th of 2025.

Lori Stalker – City Clerk

Date _____

John William (Bill) Thompson – Mayor

Date _____

THIS INSTRUMENT DRAFTED BY:

City of Wahkon
151 2nd Street East
Wahkon, MN 56386

EXHIBIT A
Legal Description

Lots 7, 8, and 9, Block 10, Wahkon, Mille Lacs County, Minnesota

STAFF MEMO: CITY COUNCIL

Department: Zoning Administration	Meeting Date: October 13, 2025
Agenda Section: New Business	Item: Conditional Use Permit (CUP) – Commercial Salon and Spa

PREVIOUS PLANNING COMMISSION REVIEW OR ACTION: Reviewed application and recommended approval.

COUNCIL REVIEW OR ACTION: Review and adopt as recommended by Planning Commission.

PROPOSED BUDGET/FISCAL IMPACT: N/A.

OPPORTUNITY COST IF APPROVED: N/A.

BACKGROUND:

Applicant Information:	Steve and Wendy Jensen / Autumn Peterson
Current Zoning:	Mixed Municipal (MM)
Applications Proposed:	Operate a commercial salon and spa
Location:	260 North Main Street, Wahkon

Autumn Peterson (on behalf of Steve and Wendy Jensen) applied for a Conditional Use Permit (CUP) for parcel 25-040-0470 located at 260 North Main Street to operate a commercial salon and spa. The current zoning is Mixed Municipal (MM). The applicant plans to change and update the signage on the outside of the building, which will require review from City staff and zoning administration. The previous use of the building was similar to the proposed use (over the years of operations), but a current CUP was not recorded or on file.

ATTACHMENTS: Resolution and supporting documents.

New Business

INVESTMENTS MONTH END TOTALS WORKSHEET						
Investment	Fund	Maturity Date	Sep-25	Oct-25	Nov-25	Dec-25
Pershing/Ehlers	WW Project (622)	NA	\$5,877.41			
Street State Aid 4M	Streets State Aid 4M (212)	NA	\$68,131.91			
FNB CD Acct #96249820	WW Emerg (301)	10/05/25	\$161,373.55			
FNB CD Acct #96249822	City Dock (401)	10/05/25	\$5,379.12			
FNB CD Acct # 200001140	Veterans Park (404)	10/11/25	\$8,997.72			
TOTAL INVESTMENTS			\$249,759.71	\$0.00	\$0.00	\$0.00
Must match Sch 1 Report Investment Balance Column						
Current Maturity APY 4.06% Renew at same rate						

- (9) Within three months of receipt of authorization as indicated in paragraph (8), the Codifier will deliver 5 printed copies of the code meeting the following specifications:
 - (a) Type to be single or dual column, at the option of the City.
 - (b) Page size to be 8½" x 11".
 - (c) All copies to be in hard leather-like covered, 3-ring, loose leaf binders. All binders shall have the City's name stamped in gold and shall contain divider tabs.
- (10) Deliver to the City a sample ordinance that can be used to adopt the new code.

II. THE CITY SHALL:

- (1) Provide clear copies of all materials necessary to perform the codification, including a copy of any previously published code of ordinances, ordinances passed since the code was last updated, and completed code questionnaire.
- (2) After receipt of the draft of the code and legal report described in paragraph I (7), the City shall have 60 days to review the draft and report and to return to the Codifier its answers to the legal report. In the alternative, if the City opts for the legal conference described in paragraph III (1), it must contact the Codifier's Staff Attorney within 60 days to set up a meeting date. The meeting, itself, need not occur within the same 60 day period. If the City is unable to either return its comments and answers to the legal report within 60 days or, if applicable, to set up a meeting date, the City may request that the Codifier extend the deadline in writing. The Codifier may adjust the contract price to cover any increased costs due to the City's delay, including applying a supplement editing rate to incorporate new ordinances, resolutions or changes to the code not previously provided to the Codifier within the 60 day time period - even if an extension is granted. Should the City abandon the project prior to completion, it will be billed for a total of 80% of the base price.
- (3) Pay the following sums (which can be paid over two fiscal years):
 - a) The sum of \$9,807 (plus shipping/handling) for codification **excluding** the full text of the zoning, floodplain and shoreland ordinances, or
 - b) The sum of \$12,075 (plus shipping/handling) for codification including the full text of the zoning, floodplain and shoreland ordinance.

10% down payment due upon acceptance of this agreement;
 60% of the balance upon receipt of the code draft;
 The remaining balance upon receipt of the printed code books.
- (4) The base price above is based upon a code of the following number of pages according to the format option of the City. Should the final number of code pages exceed the estimate by more than 5%, the base price will increase accordingly at the time of final invoice:

FORMAT	NUMBER OF PAGES	INCREASE
8½" x 11" Single-column page	467 w/out zoning, etc. 575 with zoning, etc	\$18 per page beyond 5%
8½" x 11" Dual-column page	395 w/out zoning, etc. 480 with zoning, etc.	\$22 per page beyond 5%

Unfinished Business



United States Department of Agriculture

Rural Development

September 18, 2025

Minnesota State Office

375 Jackson Street
Suite 410
Saint Paul, MN 55101

Voice 651.602.7800
Fax 855.744.0400

USDA-Rural Development
Attn: Tyler Ray - Area Specialist

RE: City of Wahkon, MN
2024 Sanitary Sewer Improvements
Contract Change Order #2 Northdale Construction Co., Inc.- Concurrence (Revised)

Proposed Change Order #2 was reviewed and concurred upon conditioned on the Borrower accepting Change Order #2. The Change Order includes new lift station controls/panels on lift stations 2-5 and new hatches on lift stations 1-2. The existing lift station panels are not adequate to operate the new lift station pumps, and the lift station hatches are in worse condition originally thought and don't meet OSHA guidelines.

1. Total increase in cost – \$226,880.27
2. Contract time increase: 144 days for Substantial Completion
154 days for Substantial Completion
Substantial Completion: November 21, 2025
Final Completion: December 31, 2025

Please contact me if you have questions or concerns.

Sincerely,

Ben Skaaland
Civil Engineer for Rural Development
United States Department of Agriculture
809 8th Street SE, Detroit Lakes, MN 56501
218-530-3317

Cc: Terry Louwagie, Community Programs Director
Ryan Rieckman, State Engineer

USDA is an equal opportunity provider and employer.

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form, found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program.intake@usda.gov.

CHANGE ORDER NO. 2

Owner: City of Wahkon Owner's Project No.:
Engineer: Short Elliott Hendrickson Inc. Engineer's Project No.: WAHKO 159122
Contractor: Northdale Construction Co., Inc. Contractor's Project No.: 24-09
Project: 2024 Sanitary Sewer Improvements, Wahkon
Date Issued: June 9, 2025 Effective Date of Change Order: September 8, 2025

The Contract is modified as follows upon execution of this Change Order:

Description:

The existing lift station control panels are not able to supply the startup amperage required to run the new pumps. Changes to the control panels are required in order to operate the new pumps. The lift station structures are in fair condition but the hatches have failed requiring the replacement of the lids on LS 1 and LS 2.

Attachments:

Exhibit A, Exhibit B

Change in Contract Price	Change in Contract Times
Original Contract Price: \$ 1,404,749.43	Original Contract Times: Substantial Completion: 11/30/2024 Ready for final payment: 06/30/2025
[Increase] [Decrease] from previously approved Change Orders No. 1 to No. 1: \$ -\$102,076.06	[Increase] [Decrease] from previously approved Change Orders No. 1 to No. 1: Substantial Completion: +212 Days Ready for final payment: +30 Days
Contract Price prior to this Change Order: \$ 1,506,825.49	Contract Times prior to this Change Order: Substantial Completion: 06/30/2025 Ready for final payment: 07/30/2025
[Increase] [Decrease] this Change Order: \$ 226,880.27	[Increase] [Decrease] this Change Order: Substantial Completion: +144 Days Ready for final payment: +154 Days
Contract Price incorporating this Change Order: \$ 1,733,705.76	Contract Times with all approved Change Orders: Substantial Completion: 11/21/2025 Ready for final payment: 12/31/2025

Recommended by Engineer (if required)

Authorized by Owner

By: _____

Title: _____

Date: _____

Authorized by Owner

Approved by Funding Agency (if applicable)

By: _____

Title: _____

Date: _____

Change Order No. 2 - Exhibit A - SELECTED ALTERNATIVE

Item	Description	Unit	Quantity	Unit Price	Total
79	LS CONTROL PANEL	EACH	4.00	\$16,080.51	\$64,322.04
80	REPLACE CONDUIT, WIRE, ELECTRICAL PERMIT	EACH	4.00	\$16,360.04	\$65,440.16
81	LS BYPASS	EACH	4.00	\$8,612.95	\$34,451.80
82	GENERAL CONTRACTOR LABOR	EACH	4.00	\$7,300.00	\$29,200.00
83	RECLEAN LIFTSTATION	EACH	4.00	\$1,575.00	\$6,300.00
84	REMOVE AND REPLACE LS HATCH - LS1	LUMP SUM	1.00	\$14,203.96	\$14,203.96
85	REMOVE AND REPLACE LS HATCH - LS2	LUMP SUM	1.00	\$12,962.31	\$12,962.31
				Total CO 2	\$226,880.27

Contract Summary

Original Bid	\$1,404,749.43
CO #1	\$102,076.06
CO #2	\$226,880.27
Revised Total	\$1,733,705.76



MEMORANDUM

TO: Tyler Ray
FROM: Dave Blommel (Lic. MN)
DATE: June 4, 2025
RE: Wahkon Change Order No 2
SEH No. WAHKO 159122 14.00

MN 1780 Guide 44 was consulted and questions in part 3 are discussed below in relation to changes required at the pump stations 2-6 in Wahkon as associated with the sanitary sewer improvement project. The original plan was to install similar pumps in stations 2-6. Each section of the narrative below discusses a different component of the change order.

1. Lift Station Controls
2. Lift station Hatch at LS 1 and LS 2 require replacement

a. What are the circumstances that lead to this change?

1. During pump installation at lift stations 2 through 5 the contractor discovered the existing panels will not adequately operate the new pumps. The phase conversion in the old panels was accomplished through AC drives that will not operate the new pump due to start up amperage. Installation of the proper pumps will require additional work on the control panels. These panels are custom made and don't have space to accommodate a VFD for phase conversion of the power supply. Replacement of the current AC drives with new AC drives is also difficult (or impossible) as the newer drives are approximately 2 to 3 times the size as the originals. As a result, the engineer and supplier have investigated the pricing to provide a very simple new panel that will serve the better fit pumps and allow the system to operate efficiently.
2. Since the project was bid the hatches have failed on lift station 1 and 2 while under normal operation from City Staff. One of the failures resulted in an OSAH reportable injury and associated workers compensation claim for injuries sustained to the operator.
 - a. LS 1 and LS 2 are different diameters resulting in a moderate difference in cost. Costs are detailed in exhibit A.

b. Why is this change needed?

1. Without the change, pumps will need to be downsized. The reduced size pumps will fall short of the existing flow rate and will operate far on the left side of the pump curve. The operating point will decrease the expected life of the pump. Recent failure at lift station 2 of the AC drives indicates that future failures are likely as the drives have exceeded their life expectancy.
2. Hatches need to be replaced in order to be safely operated.

c. Who initiated the change? (i.e. Owner, Engineer, or Contractor)

1. The change was initiated by a combination of the contractor and supplier after discovering the deficiency in the existing panels. After reviewing the options, the engineer and owner were also in agreement that additional options needed to be explored.
2. The owner provided this request which was priced by the contractor.

d. What did the Contract Documents originally require or specify regarding the Work of this change?

1. The original documents required the use of the same horsepower pumps to allow the reuse of the existing panels. Unfortunately, the existing horsepower could not provide a pump curve that operates efficiently in the existing stations. The new pumps had too high of an amp draw for the existing control facilities.
2. These conditions were un-known to the project and not included in the documents.

e. Where were these original requirements specified? (e.g. Drawing numbers, Specification citation)

1. Pump performance standards were specified in section 33 32 10 Wet pit sewage pumping station. Lift stations each have their own section starting in 2.02. Information for LS 6 was provided in addendum 1 of the project as it was inadvertently removed from the original section.

5. Not specified in the original documents

f. Where at the Site is the Work of this change located? (i.e. Drawing numbers)

1. Work on these stations is shown on drawing sheets 23-25 and is located at lift stations 2-5
2. This would be reflected on sheet 21 for LS 1 and 23 for LS 2.

g. What specific Contract Documents, such as Drawings and Technical Specifications, apply to this change?

1. Drawings will not be impacted by the change, but rather section 33 32 10 will have a performance specification drafted to construct and install the new lift station panels.
2. Drawings have been modified to show the new cover (with hatch).

h. What are the changes to the Contract Documents? (Describe, quantify, and reference attached Drawings, Specifications, etc.)

Attached Exhibit A to the change order shows the project cost.

i. What are the alternatives to this change?

We investigate several alternatives to solve the problem that is occurring at the lift stations.

1. Lift stations
 - a. Utilize a smaller horsepower pump that could be installed within the available power supplied by the existing control panel.

- b. Replace the control panel with an “off the shelf” control panel that will suitably power the new pumps and keep them at a good spot in the curve.
 - i. USEMCO POWEPACK DUPLEX Panel – 4 float operation (package)
 - ii. New wire and Conduit
 - iii. Salvage and reinstall Omi-site dialer
 - iv. Mounted on existing pole.
 - c. Replace the control panel with a new custom panel that provides exactly what the city needs including:
 - i. NEMA enclosure
 - ii. Skirt and legs with louvers
 - iii. Main Breaker
 - iv. Pump circuit breakers
 - v. Starter (VFD)
 - vi. Control Circuit breakers
 - vii. Heater
 - viii. Relays, controllers, floats
 - ix. New conduit, concrete pad, bypassing
2. Lift Station Hatches
- a. Repair the exiting hatches (determined to be impossible due to metal failure and needs to be rebuilt)
 - b. Replace the hatch and cover.

j. Why is the recommended alternative the preferred alternative?

We have recommended the second option above (B) for the following reasons:

- 1. Lift stations 2 -5
 - a. Smaller horsepower pumps not operating efficiently will cause premature wear on the motors and result in longer run times. Additionally the existing phase conversion drives are aged and can fail at any time with little or no options for replacement. Drives on LS 3 have recently failed and the new set barely fit into the control panel with the old pumps still in place. The increase in size of the power requirements for the new pumps will not allow for larger electrical equipment in the same panel.
 - b. The packaged control panel does not have a venting area and requires the conduit to the lift station to be sealed. Also, the float switch is not intrinsically safe and will be modified to meet state requirements.
 - c. This is the ultimate solution for the city. New panels will allow for the properly sized pumps to be installed in the stations, operate efficiently, and at the best possible facility life for the City. It also prevents an upcoming problem with the likely failure of the AC drives providing the phase conversion.
 - d. Lift station 6 has minimal use and can be made to work with the existing controls.
- 2. Since repairs were attempted and failed, the cover replacement is the only viable solution to the safety concern. With the hatches cast into the cover, replacement of only that hatch is not cost effective.

k. What is the amount of the change in Contract Price and how was this change established? (Attach table itemizing unit price quantity changes and new unit price items. Attach Proposal from Contractor.)

An itemized list of pricing for each change is included in the Change Order are Exhibit A.

l. What is the change in the Contract Time(s) and how was this change determined? (Attach written request with justification from Contractor. Engineer's calculations are an option for Work added by Owner. See Part 4 below for further requirements.)

There have been significant delays in the contractor's operations due to the change brought on by the lift station panels.

Panel Delivery 6-8 weeks (Ordered on Sept 9, 2025 – Assume 56 calendar days)
Contractor Installation – 3 days per station (12 working days total)

Substantial Completion:

Original Substantial Completion – 11/30/2025
CO 1 Substantial completion - 6/30/2025
Proposed substantial completion - 11/21/2025

Final completion

Original Final Completion – 6/30/2025
Change order one Final completion – 7/30/2025
Proposed Final Completion – 12/31/2025

m. How does this change impact other portions of this contract and other contracts of this Project in terms of scheduling, costs, and other factors?

The biggest impact on the project is the schedule impact as itemized above.

n. What are the impacts of this change on the non-construction costs, such as engineering fees, construction testing, and interim interest? (Include calculations.) Loan was a very small component of the project cost so interim interest is not expected to be a significant cost for the time extension. Engineering fees have been holding steady, but the cost of the production of these change order documents has become more than current contract can support. A separate Exhibit K will be processed outside of this change order document.

- Basic services (50 hours engineer / project manager) in the amount of \$8500
- Additional RPR time projected at 2 days per lift station for LS panels and 1 day for each cover replacement. Total 10 days @ 10 hours per day or 100 hours. Because only 60% of the RPR project budget has been spent, we propose to use the existing contract and have not included the additional RPR in the amendment.

dwb
Enclosure

MN Pump Works Proposal for Lift Station Panel Replacement Work

Lift Station 2 6HP/2 Pole/14.8FLA

QTY (1)

USEMCO POWERPACK DUPLEX \$15,596.83
PANEL LARGE VFD PHASE
CONVERSION 1PH TO 3PH -
900805, 4-FLOAT OPERATION

QTY (4)

ANCHOR SCIENTIFIC ECO \$102.92 @ (4) EA = \$483.68
FLOAT NO/NC INTERNALLY
WEIGHTED, NON MERCURY,
SUSPENDED, 50FT

QTY (1)

All conduit (Larger Size), wire, and labor for installation, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels, Electrical Permit, Temp Panel Board near lift station for Installation of new panel on existing pole. ~~\$15,332.91~~

Electrical, trench upsized conduit to run from lift station to new panels, make holes in lift station bigger to accept conduits, concrete / seal upsized conduit in lift station barrel, move control panels over to temp panel board, connect all electrical components to new panel. Electrical permit(s) if needed.

Labor \$13,620

Material(s) \$1,802.91

MN Pump works, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels \$937.13 Labor

QTY (1)

Bypassing with Vac Truck(s) to add in the installation of control panel and initial startup ***May need additional Vac Truck Depending on additional flow*** \$8,612.95

QTY (1)

Additional labor \$7,000

Northdale provided Labor breakdown as follows

- 1) Service truck W/Boom/Welder \$361.25 HR = \$1,806.25 (5 Hrs.)
- 2) Nelson Sanitation (Bigger Vac truck/ Honey Wagon) \$333.50 Hr = \$2,001
- 3) Foreman - \$125.52 HR (\$188.28 OT HR) = \$815.88
- 4) Pipelayer - \$111.47 (\$167.21 OT HR) = \$724.56
- 5) Bottom Man - \$107.11 (\$160.66 OT HR) = \$696.21
- 6) Topman - \$105.59 (\$158.39 OT HR) = \$686.34
- 7) ND Pick up truck - \$51.38 HR = \$308.28

Total is \$7,038.52 for additional labor. (I have \$7,000 on previous LS breakdown) A couple lift stations will require a little more so that's where the extra \$300 on previous breakdown comes from. The difference in \$300 would be either for another hr. of vac time, service truck w/boom or a couple of laborers.

Lift Station 3 6HP/2 Pole/14.8FLA

QTY (1)

USEMCO POWERPACK DUPLEX \$15,596.83
PANEL LARGE VFD PHASE
CONVERSION 1PH TO 3PH -
900805, 4-FLOAT OPERATION

QTY (4)

ANCHOR SCIENTIFIC ECO \$102.92 @ (4) EA = \$483.68
FLOAT NO/NC INTERNALLY
WEIGHTED, NON MERCURY,
SUSPENDED, 50FT

QTY (1)

All conduit (Larger Size), wire, and labor for installation, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels, Electrical Permit, Temp Panel Board near lift station for Installation of new panel on existing pole, reclean lift station. ~~\$15,332.91~~

Electrical, trench upsized conduit to run from lift station to new panels, make holes in lift station bigger to accept conduits, concrete / seal upsized conduit in lift station barrel, move control panels over to temp panel board, connect all electrical components to new panel. Electrical permit(s) if needed.

Labor \$13,620

Material(s) \$1,802.91

MN Pump works, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels \$937.13 Labor

QTY (1)

Bypassing with Vac Truck(s) to add in the installation of control panel and initial startup ***May need additional Vac Truck Depending on additional flow*** \$8,612.95

QTY (1)

Additional labor \$7,000

Northdale provided Labor breakdown as follows

- 1) Service truck W/Boom/Welder \$361.25 HR = \$1,806.25 (5 Hrs.)
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- 7) ND Pick up truck - \$51.38 HR = \$308.28

Total is \$7,038.52 for additional labor. (I have \$7,000 on previous LS breakdown) A couple lift stations will require a little more so that's where the extra \$300 on previous breakdown comes from. The difference in \$300 would be either for another hr. of vac time, service truck w/boom or a couple of laborers.

Recleaning of lift station to install internal components \$1,575

Lift Station 4 6HP/2 Pole/14.8FLA

QTY (1)

USEMCO POWERPACK DUPLEX \$15,596.83
PANEL LARGE VFD PHASE
CONVERSION 1PH TO 3PH -
900805, 4-FLOAT OPERATION

QTY (4)

ANCHOR SCIENTIFIC ECO \$102.92 @ (4) EA = \$483.68
FLOAT NO/NC INTERNALLY
WEIGHTED, NON MERCURY,
SUSPENDED, 50FT

QTY (1)

All conduit (Larger Size), wire, and labor for installation, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels, Electrical Permit, Temp Panel Board near lift station for Installation of new panel on existing pole, reclean lift station. ~~\$15,332.91~~

Electrical side, trench upsized conduit to run from lift station to new panels, make holes in lift station bigger to accept conduit, concrete / seal upsized conduit in lift station barrel, move control

panels over to temp panel board, connect all electrical components to new panel. Electrical permit(s) if needed.

Labor \$13,620

Material(s) \$1,802.91

MN Pump works, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels \$937.13 Labor

QTY (1)

Bypassing with Vac Truck(s) to add in the installation of control panel and initial startup ***May need additional Vac Truck Depending on additional flow*** \$8,612.95

QTY (1)

Additional labor \$7,000

Northdale provided Labor breakdown as follows

- 1) Service truck W/Boom/Welder \$361.25 HR = \$1,806.25 (5 Hrs.)
- 2) Nelson Sanitation (Bigger Vac truck/ Honey Wagon) \$333.50 Hr = \$2,001
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- 7) ND Pick up truck - \$51.38 HR = \$308.28

Total is \$7,038.52 for additional labor. (I have \$7,000 on previous LS breakdown) A couple lift stations will require a little more so that's where the extra \$300 on previous breakdown comes from. The difference in \$300 would be either for another hr. of vac time, service truck w/boom or a couple of laborers.

Recleaning of lift station to install internal components \$1,575

Lift Station 5 2.9HP/4 Pole/9.1FLA

QTY (1)

USEMCO POWERPACK DUPLEX \$14,116.83
PANEL SMALL VFD PHASE
CONVERSION 1PH TO 3PH -
900804, 4-FLOAT OPERATION

QTY (4)

ANCHOR SCIENTIFIC ECO \$102.92 @ (4) = \$483.68
FLOAT NO/NC INTERNALLY
WEIGHTED, NON MERCURY,

SUSPENDED, 50FT

QTY (1)

All conduit (Larger Size), wire, and labor for installation, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels, Electrical Permit, Temp Panel Board near lift station for Installation of new panel on existing pole, reclean lift station. ~~\$15,332.91~~

Electrical side, trench upsized conduit to run from lift station to new panels, make holes in lift station bigger to accept conduit, concrete / seal upsized conduit in lift station barrel, move control panels over to temp panel board, connect all electrical components to new panel. Electrical permit(s) if needed.

Labor \$13,620

Material(s) \$1,802.91

MN Pump works, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels \$937.13 Labor

QTY (1)

Bypassing with Vac Truck(s) to add in the installation of control panel and initial startup ***May need additional Vac Truck Depending on additional flow*** \$8,612.95

QTY (1)

Additional labor \$7,000

Northdale provided Labor breakdown as follows

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Total is \$7,038.52 for additional labor. (I have \$7,000 on previous LS breakdown) A couple lift stations will require a little more so that's where the extra \$300 on previous breakdown comes from. The difference in \$300 would be either for another hr. of vac time, service truck w/boom or a couple of laborers.

Recleaning of lift station to install internal components \$1,575

Lift Station 6 2.9HP/4 Pole/9.1FLA

QTY (1)

USEMCO POWERPACK DUPLEX
PANEL SMALL VFD PHASE
CONVERSION 1PH TO 3PH -
900804, 4-FLOAT OPERATION

\$14,116.83

QTY (4)

ANCHOR SCIENTIFIC ECO
FLOAT NO/NC INTERNALLY
WEIGHTED, NON MERCURY,
SUSPENDED, 50FT

\$102.92 @ (4) EA = \$483.68

QTY (1)

All conduit (Larger Size), wire, and labor for installation, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels, Electrical Permit, Temp Panel Board near lift station for Installation of new panel on existing pole. \$15,332.91

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Labor \$13,620

Material(s) \$1,802.91

MN Pump works, Installation and Implementation of Existing Omni-Site Dialers to Proposed Control Panels \$937.13 Labor

QTY (1)

Bypassing with Vac Truck(s) to add in the installation of control panel and initial startup ***May need additional Vac Truck Depending on additional flow*** \$8,612.95

QTY (1)

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Recleaning of lift station to install internal components \$1,575

From: [Justin MacPherson](#)
To: [Dave Blommel](#); [Phil Lesnar](#)
Subject: Re: Wahkon Change Order No. 2
Date: Thursday, September 4, 2025 3:55:32 PM

Good afternoon everyone,

I spoke with USEMCO as of today we would be at a 6 to 8 week lead time on proposed control panels. If there are any questions please let me know.

Justin Macpherson
Territory Account Manager
Minnesota Pump Works
218-255-2380

From: Dave Blommel <dblommel@sehinc.com>
Sent: Thursday, September 4, 2025 3:54:06 PM
To: Justin MacPherson <justinm@minnesotapumpworks.com>; Phil Lesnar <phill@northdaleconst.com>
Subject: Wahkon Change Order No. 2

Justin and Phil,

I am finalizing the completion date for the change order. Can you please let me know the anticipated delivery and installation time for the Lift Station Panels?

Thank you,

Dave

David W. Blommel, PE (MN)
Engineer VI (mgr), Principal
Short Elliott Hendrickson, Inc.
320.229.4349 direct | 320.293.5464 Mobile | 320.229.4300 main

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From: [Phil Lesnar](#)
To: [Dave Blommel](#); [Justin MacPherson](#)
Subject: RE: Wahkon Change Order No. 2
Date: Thursday, September 4, 2025 3:56:18 PM

Dave,

Upon receiving the panels we would anticipate Approximately 3 days per panel.

Thank you

Philip B Lesnar
President
Northdale Construction Co. Inc.
9760 71st Street NE
Albertville MN, 55301
Office – 763-428-4868
Cell – 612-369-5952
Email – phill@northdaleconst.com

From: Dave Blommel <dblommel@sehinc.com>
Sent: Thursday, September 4, 2025 3:54 PM
To: Justin MacPherson <justinm@minnesotapumpworks.com>; Phil Lesnar <phill@northdaleconst.com>
Subject: Wahkon Change Order No. 2

Justin and Phil,

I am finalizing the completion date for the change order. Can you please let me know the anticipated delivery and installation time for the Lift Station Panels?

Thank you,

Dave

David W. Blommel, PE (MN)
Engineer VI (mgr), Principal
Short Elliott Hendrickson, Inc.
320.229.4349 direct | 320.293.5464 Mobile | 320.229.4300 main

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USEMCO®

Universal Sanitary Equipment Manufacturing Company



WWW.USEMCO.COM

USEMCO INCORPORATED

550, 1602 REZIN RD, TOMAH, WI 54660

PHONE: (608) 372-5911

FAX: (608) 372-5016

Customer

Customer number

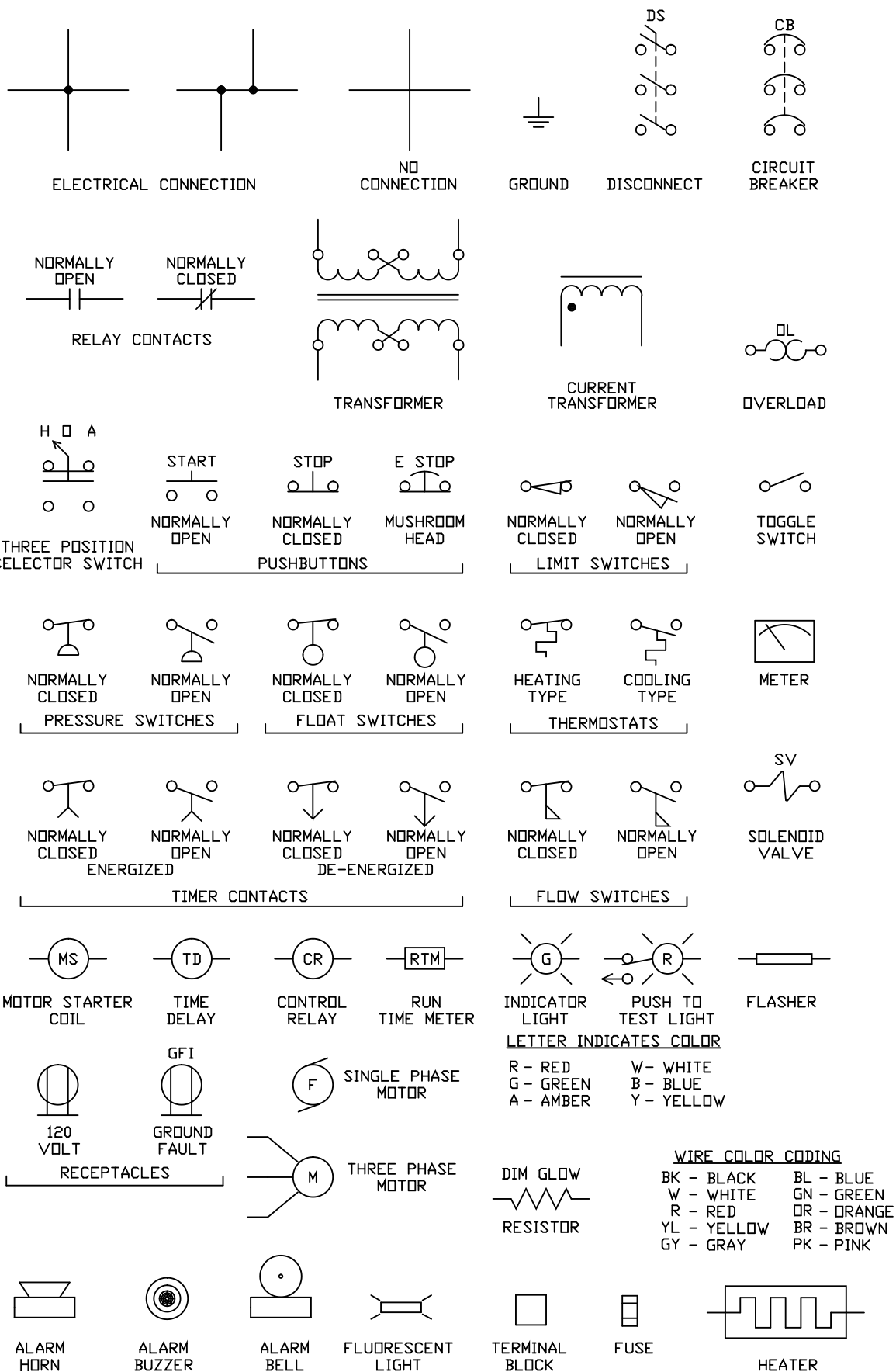
Project Description

DUPLEX 1-PHASE CONVERSION
CONTROL PANEL UP TO 10A

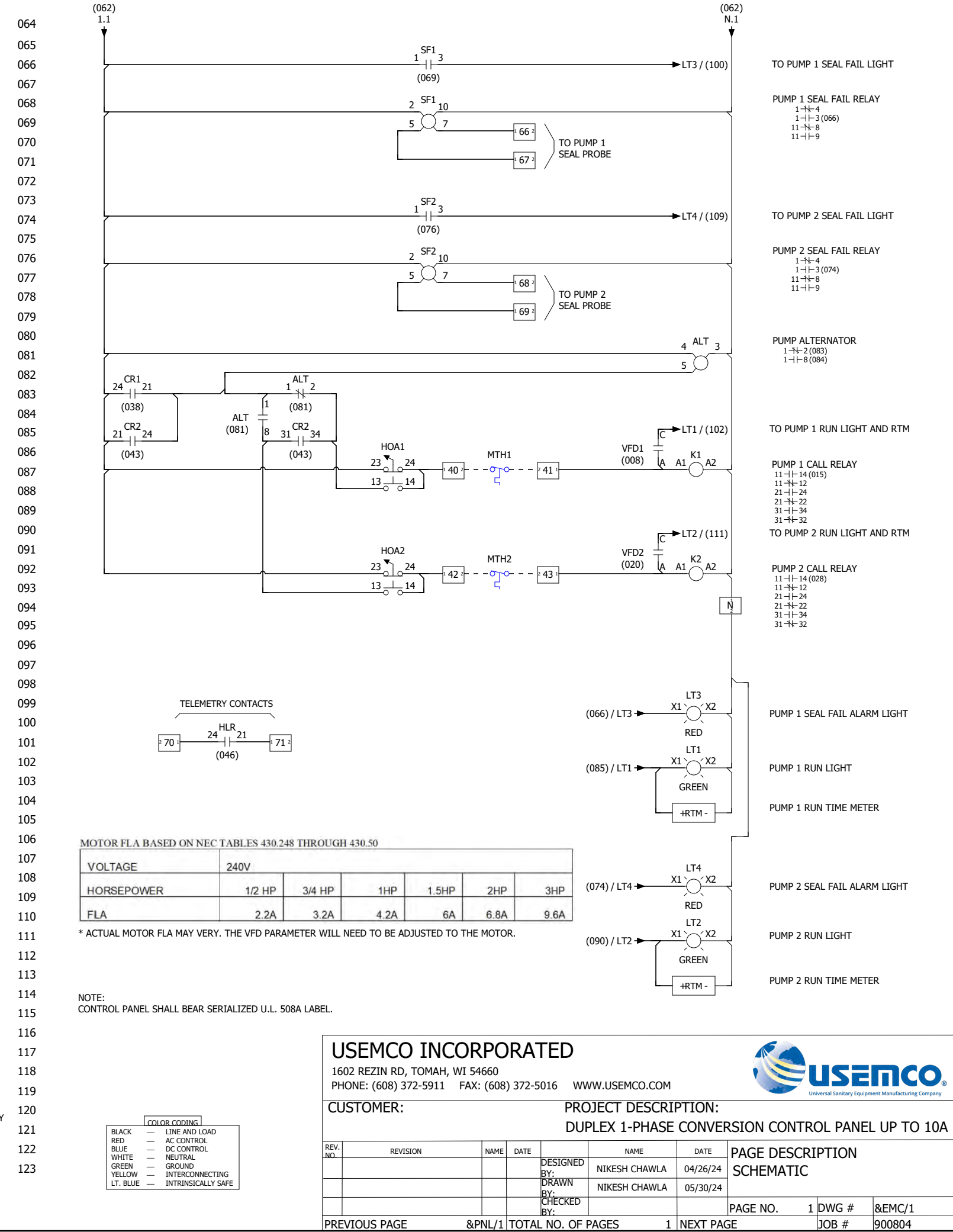
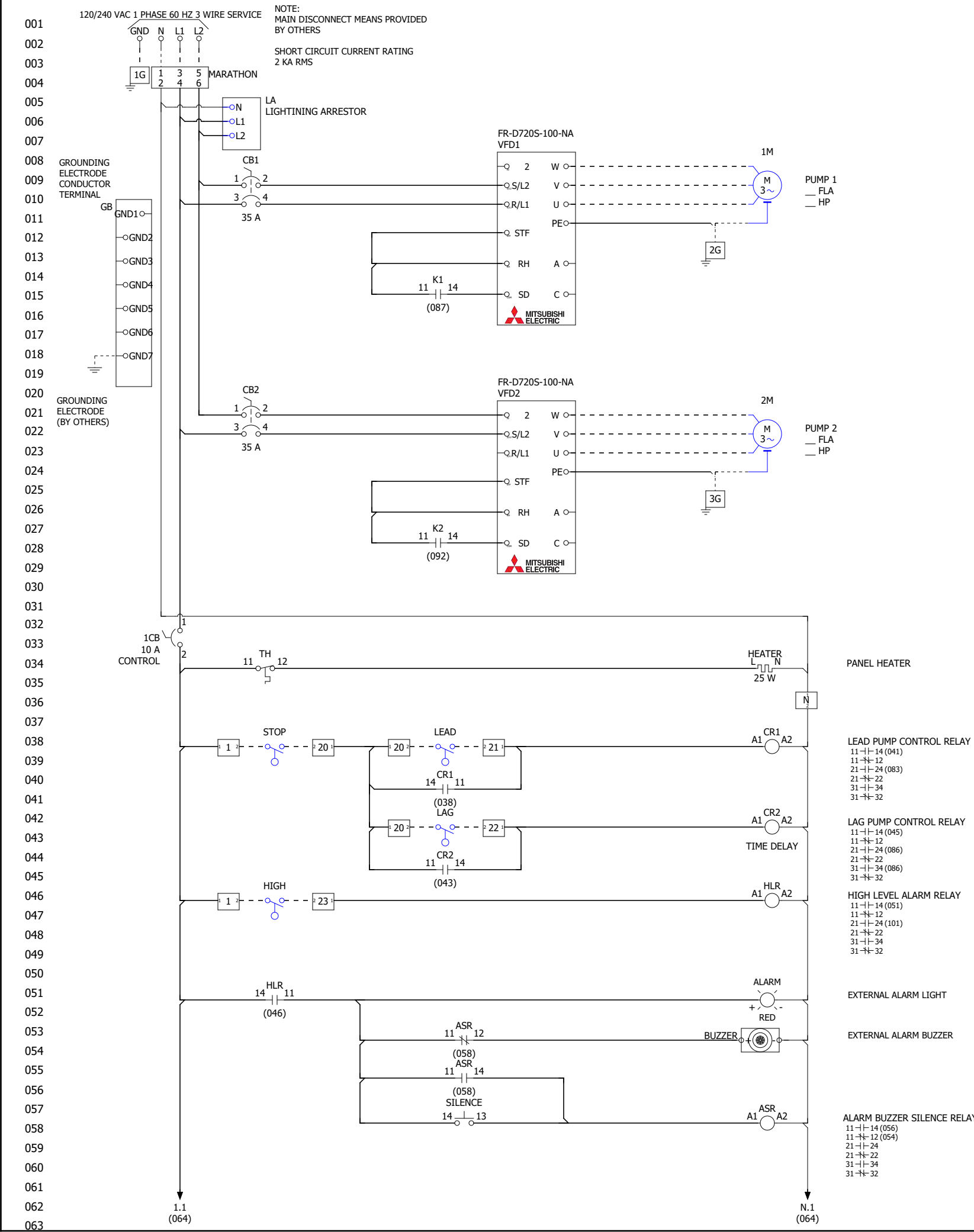
Job number

900804

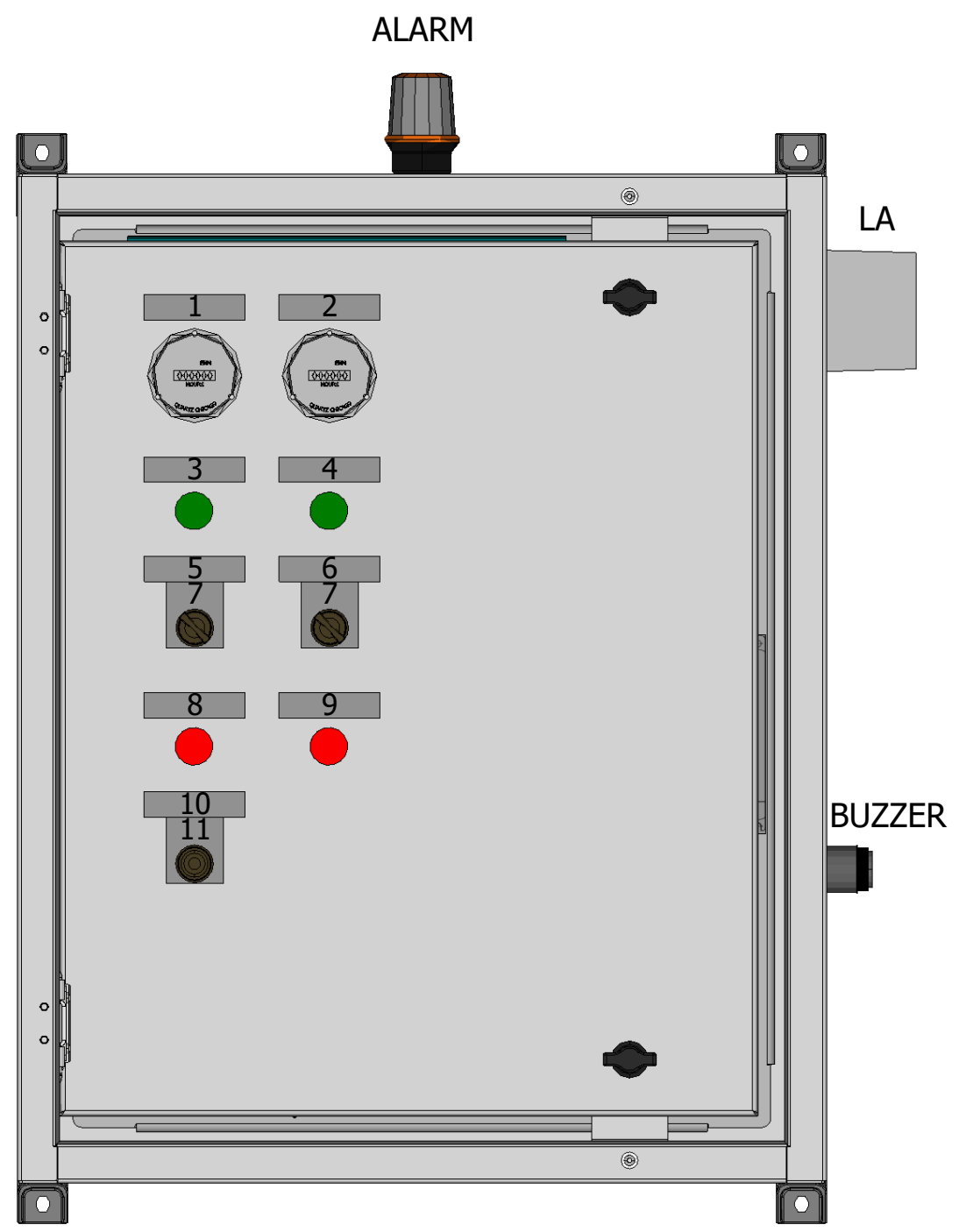
ELECTRIC CONTROL SYMBOLS



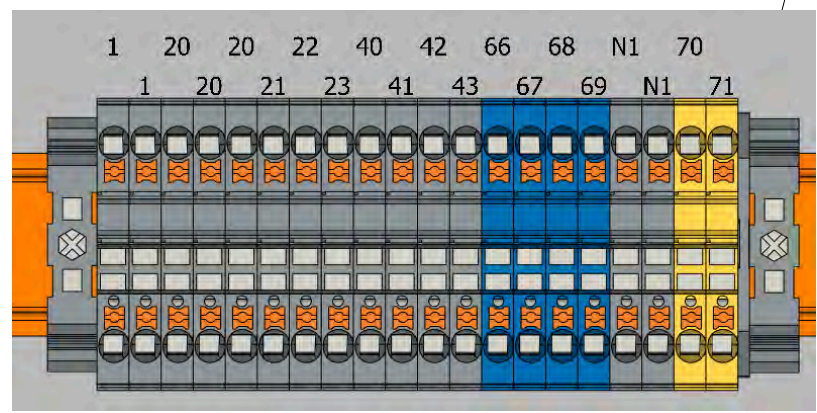
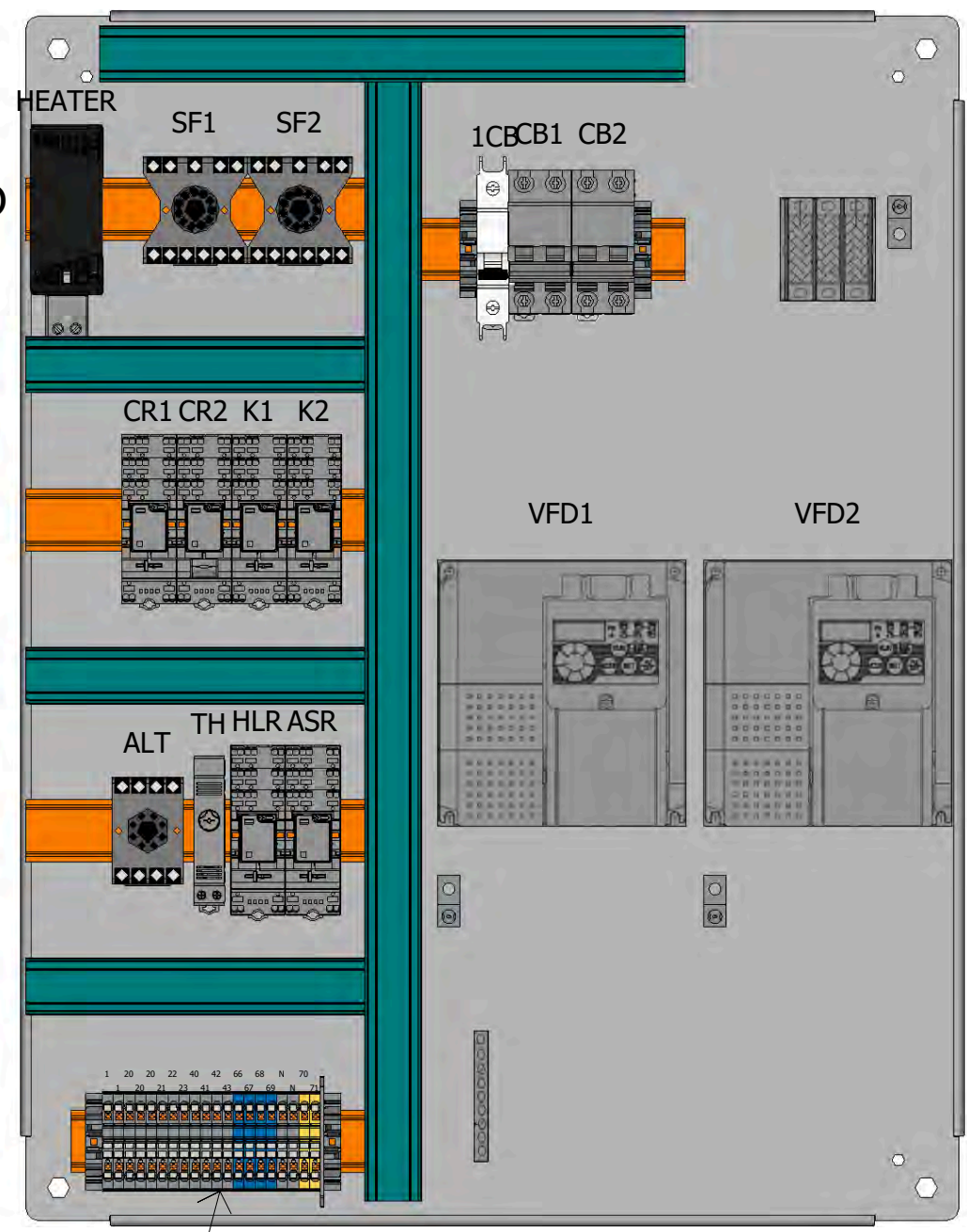
USEMCO INCORPORATED
P.O. BOX 550 (608) 372-5911 TOMAH, WI 54660
SYMBOLS



NEMA 4X STAINLESS STEEL ENCLOSURE
30"H x 24"W x 10"DP
OUTER DOOR NOT SHOWN



- NAMEPLATE LEGEND
- 1. PUMP 1 RTM
 - 2. PUMP 2 RTM
 - 3. PUMP 1 RUN
 - 4. PUMP 2 RUN
 - 5. PUMP 1
 - 6. PUMP 2
 - 7. HAND OFF AUTO
 - 8. SEAL 1 FAIL
 - 9. SEAL 2 FAIL
 - 10. ALARM
 - 11. SILENCE



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1602 REZIN RD, TOMAH, WI 54660
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Universal Sanitary Equipment Manufacturing Company

CUSTOMER:

PROJECT DESCRIPTION:
DUPLEX 1-PHASE CONVERSION
CONTROL PANEL UP TO 10A

REV. NO.	REVISION	NAME	DATE	NAME	DATE			
		DESIGNED BY:	NIKESH CHAWLA	04/26/24	PAGE DESCRIPTION PANEL LAYOUT			
		DRAWN BY:	NIKESH CHAWLA	06/04/24				
		CHECKED BY:		06/04/24				
PREVIOUS PAGE		8/3	TOTAL NO. OF PAGES	1	NEXT PAGE	8/EMC/1	JOB NO.	900804

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M 900804.V2 - 900804.V2 - DUPLEX 1-PH CONVERSION CONTROL PANEL 10A

Detail

Quantity

--10 ELEC-ASSY - ELECTRICAL- ASSEMBLY
CUT OUT PANEL

----322239 BUZZER AC-DC #MW-09-201-QG	1.00	EA
----322279.0 LIGHT ALARM AC-DC #R15-MB	1.00	EA
120V, 15W, RED		
----420367.0100 VFD 3HP 240V 10A MITSUBISHI #FR-D720S-100-NA	2.00	EA
D700 SERIES		
3 HP		
240VAC		
5.5"H x 5.7"W x 4.4"D		
----421394.10 BREAKER SQD 1P 10A M9F42110 CURVE C	1.00	EA
----421398.35 BREAKER SQD 2P 35A M9F42235 CURVE C	2.00	EA
----421494.07 BAR GROUND KIT SQD PK7GTA	1.00	EA
----422305.00 RELAY PROBE MACROMATIC #SFP120B100	2.00	EA
SINGLE CHANNEL		
11 PIN - DPDT		
4.7K - 100K OHMS		
----422339.305 RELAY 10A FINDER 55 SERIES 3P 120 VAC	6.00	EA
PART # 55.33.8.120.0050		
PLUG-IN RELAY, 3PDT, 10A 120V AC COIL		
LOCKABLE TEST BUTTON & LED		
----422345.6 RELAY ALT 10A DIV. ARB-120-ABA	1.00	EA
----423384.2 ARRESTER SURGE 1PH SQD #SDSA1175	1.00	EA
----423413 BLOCK TERMINAL PHOENIX GRAY #3211757	14.00	EA
----423413.1 BLOCK TERMINAL PHOENIX BLUE #3211760	4.00	EA
----423413.3 BLOCK TERMINAL PHOENIX YELLOW #3211762	2.00	EA
----423413.5 BLOCK TERMINAL PHOENIX END COVER #3030420	1.00	EA
----423413.6 BLOCK TERMINAL PHOENIX END STOP #0800886	4.00	EA
----423413.61 JUMPER 2 POLE PHOENIX #3030336	2.00	EA
----423413.62 JUMPER 3 POLE PHOENIX #3030242	1.00	EA
----423448.1 BLOCK 3PL LINE #2 LOAD #10 MARATHON #1413400	1.00	EA
1 LINE 4 LOAD		
----423480.2 SOCKET RD 8 PIN IDEC SR2P-06	1.00	EA
----423481.2 SOCKET RD 11 PIN IDEC SR3P-06	2.00	EA
----423486.2 SOCKET 94 SERIES 3P FINDER 94.P3SPA	6.00	EA
----425123 TIMER MODULE FINDER 86.30.8.120.0000	1.00	EA
.05 SEC TO 100 HR ADJUSTABLE		
----425200.0 RTM 120VAC 60HZ ENM #T50B2	2.00	EA
----428905.2 WIRE DUCT BASE 1" X 2"	2.00	EA
PANDUIT F1X2 LG6		
----428905.25 WIRE DUCT BASE 1" X 3"	4.00	EA
PANDUIT F1X3 LG6		
----428908.2 WIRE DUCT COVER 1"	4.00	EA
PANDUIT C1LG6		
----429094.02 DECAL USEMCO 2 7/16" X 7 1/8"	1.00	EA
.020 MILL ALUMINUM BLK PRINT W/468 ADHESIVE		
----429094.04 DECAL USEMCO 2" X 3" MADE IN USA	1.00	EA

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M 900804.V2 - 900804.V2 - DUPLEX 1-PH CONVERSION CONTROL PANEL 10A

Detail	Quantity	
----429096 LABEL U.L. INDUSTRIAL PANEL UL-508A FILE NUMBER E76571 PART NUMBER S1810	1.00	EA
----429105 DECAL USEMCO LIMITED WARRANTY 1 YEAR 3" X 4.75" WHITE BACKGROUND BLACK LETTERS Any part claimed defective will be either repaired or replaced, our option, when returned to our factory transportation charges paid. This guarantee only covers defect which have developed in the service for which the controls have been designed. The liability of the company shall not in any case exceed the cost of correcting defects in USEMCO'S controls or parts, upon the above mentioned one year, all such liability shall terminate. USEMCO shall not in any event be liable for indirect or consequential damages. USEMCO, Inc. Tomah, WI 54660 WORDING AS FOLLOWS: All control panels manufactured by USEMCO, Inc. are guaranteed to be free from defect in workmanship and material for a period of one (1) year from date of shipment.	1.00	EA
----429118.43 LABELS "WARNING" BRADY B30-25-595-ANSIWA 4" X 6" DIECUT ORDER 175 PER ROLL ORANGE "WARNING" HEADER ON WHITE LABEL	1.00	EA
----460480 RING SEAL T&B 5262 1/2" OR EQUAL	1.00	EA
----462620.16 ENCL SAGINAW SCE-30EL2410SSLP	1.00	EA
----463180.04 ENCL DEAD FRONT SAGINAW SCE-DF30EL24LP	1.00	EA
----463213.30 ENCL BP SAGINAW SCE-30P24	1.00	EA
----463371.2 ENCL PADLOCK WING KNOB LATCH #SCE-PLWKB	1.00	EA
----463442.74 THERMOSTAT FINDER NORMALLY CLOSED 7T.81.0.000.2403 Thermostat, SPST-NC 10A, 0°C (32°F) to +60°C (140°F)	1.00	EA
----463502.100 ENCL MTG KIT SAGINAW SCE-ELMFK4SS6-OS INCLUDES (4) 304 SS MUNTING FEET AND STAINLESS STEEL FASTENERS	1.00	EA
----469004 LUG ALUM SOLDERLESS MAX. #2 ILSCO TA-2, BLACKBURN ADR-2, BURNDY KA2U OR EQUAL	3.00	EA
----469068.7 HEATER TOUCH SAFE FINDER 25W 7H.51.0.230.0025 Panel Heater 110..230V AC/DC	1.00	EA
----470501.21 SWITCH PB MOMENTARY BLACK SQD XB7NA25 1NO 1NC 1NO 1NC BLACK PLASTIC	1.00	EA
----470501.22 SWITCH SEL 3 POS SQD #XB7ND33 2 NO CONTACT	2.00	EA
----480148.10 LIGHT COMPACT SQD GREEN LED XB7EV03GP 110V - 130VAC	2.00	EA

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M 900804.V2 - 900804.V2 - DUPLEX 1-PH CONVERSION CONTROL PANEL 10A

Detail	Quantity
----480148.11 LIGHT COMPACT SQD RED LED XB7EV04GP 110V - 130VAC	2.00 EA
--30 ELEC-WIRE - ELECTRICAL- PANEL WIRING WIRE PANEL	
--40 ELEC-TEST - ELECTRICAL- PANEL TESTING TEST PANEL	



Saginaw Control and Engineering
95 Midland Road Saginaw, MI 48638-5770
(800) 234-6871 - Fax: (989) 799-4524
SCE@SaginawControl.com

SCE-30EL2410SSLP

Product Specifications:



Part Number: SCE-30EL2410SSLP

Description: S.S. EL Enclosure

Height: 30.00"

Width: 24.00"

Depth: 10.00"

Construction

- ✱ 0.075 In. stainless steel Type 304.
- ✱ Seams continuously welded and ground smooth.
- ✱ Flange trough collar around all sides of door opening.
- ✱ Pour in place oil & water resistant gasket
- ✱ Collar studs provided for mounting optional panels.
- ✱ Stainless steel concealed hinges.
- ✱ Removable and interchangeable doors.
- ✱ Black quarter turn latches.
- ✱ Latches are opened or closed with a screwdriver (optional tamper-resistant inserts are available).
- ✱ Mounting holes in back of enclosure.
- ✱ Mounting hardware, sealing washer and hole plug included.
- ✱ Removable print pocket furnished if height and width of enclosure is greater than 12 inches.
- ✱ Ground studs on door and body.

Application

Designed to house electrical and electronic controls, instruments and components in areas which may be regularly hosed down or are in very wet conditions. Provides protection from dust, dirt, oil, and water. For outdoor applications a drip shield is recommended.

Options

Optional mounting feet available. Door hardware available.

Finish

#4 brushed finish on all exterior surfaces. Optional sub-panels are powder coated white.

Industry Standards - (IS6)

- ✱ NEMA Type 3R, 4, 4X, 12 and Type 13
- ✱ UL Listed Type 3R, 4, 4X and 12
- ✱ CSA Type 4, 4X and 12
- ✱ IEC 60529
- ✱ IP 66

Notes

Provision for Lifting Lugs on enclosures when Height >48" and Depth >16". The Lifting Lug assembly will be included with the enclosure bolt pack.

Special Instructions apply for IS3, IS4 and IS6 to maintain the environmental rating of Type 3R for these parts. Instructions are located on the enclosure door. Drip shield is required on IS3, drip shield is recommended on IS4 and IS6. Drain holes are required on all.

Optional Accessories

SCE-30P24 Subpanel, Bent
SCE-30P24GALV Subpanel, Bent Galvanized
SCE-BVK Breather Vent
SCE-DF30EL24LP Panel, Dead Front (Wall Mount)
SCE-DS24SS Shield, S.S. Drip
SCE-ELFM24WSS S.S. EL Flush Mount Frame
SCE-ELFM30HSS S.S. EL Flush Mount Frame
SCE-ELMFK4SS Foot Kit, S.S. EL Mounting (4pc.)
SCE-ELSP3 KIT, Swing-Out Panel (20 High & Up)

Similar Part Numbers

SCE-20EL1606SSLPS.S. EL Enclosure
SCE-20EL1608SSLPS.S. EL Enclosure
SCE-20EL1610SSLPS.S. EL Enclosure
SCE-20EL2006SSLPS.S. EL Enclosure
SCE-20EL2008SSLPS.S. EL Enclosure
SCE-20EL2010SSLPS.S. EL Enclosure
SCE-20EL2012SSLPS.S. EL Enclosure
SCE-20EL2408SSLPS.S. EL Enclosure
SCE-24EL1608SSLPS.S. EL Enclosure
SCE-24EL2006SSLPS.S. EL Enclosure

Installation Information

- ✱ Mounting Foot Kit for Enviroline Enclosures
- ✱ EL Flush Mount Frame
- ✱ Drip Shield Kit Assembly
- ✱ Sealing Washer Specifications
- ✱ Dead Front Wall Mount Installation Instructions
- ✱ Swing Panel Assembly for Enviroline Enclosures
- ✱ Dead Front Wall Mount < 20 In Height Installation Instructions
- ✱ Swing Panel ELSP for Encl. Height > 16
- ✱ Swing Panel ELSP for Encl. Height <= 16
- ✱ Service Parts Wall Mount Enclosures

Product data sheet

Characteristics

SDSA1175T

Surge Protect - 36kA - 120VAC - 1P3W - 25 kA - T1



Main

Product or component type	Surge protection device
---------------------------	-------------------------

Complementary

Surge current	36 KA
[Ue] rated operational voltage	120 V AC
Phase	1 phase
Wiring configuration	3-wire
Connections - terminals	Wire
[Uc] maximum continuous operating voltage	150 V
Nominal discharge current	10 KA
Short-circuit protection	25 KA
Local signalling	Status LED
Height	2.25 In (57.15 mm)
Width	2.25 In (57.15 mm)
Depth	49.15 Mm (1.935 in)
Cable length	0.61 M (2 ft)

Environment

NEMA degree of protection	NEMA 1
Enclosure material	Black plastic
Standards	CSA C22.2 No 8 UL 1449:ed. 4

Product data sheet

Specifications



Miniature circuit breaker (MCB),
Multi9 C60BP, 2P, 35A, C curve,
10kA (UL489), 10kA (IEC/EN
60947-2)

M9F42235

Main

Range	Multi9
Product name	Multi9 C60
Product or Component Type	Miniature circuit-breaker
Device short name	C60BP
Device Application	Distribution
poles description	2P
Number of protected poles	2
Line Rated Current	35 A 77.0000000000 °F (25 °C) EN/IEC 60947-2
Network type	AC DC
Trip unit technology	Thermal-magnetic
Curve code	C
Breaking capacity	6 kA Icu 440 V AC EN/IEC 60947-2 10 kA Icu 415 V AC EN/IEC 60947-2 20 kA Icu 240 V AC EN/IEC 60947-2 6 kA Icu 440 V AC GB 14048.2 10 kA Icu 415 V AC GB 14048.2 20 kA Icu 240 V AC GB 14048.2 14 kA AIR 240 V AC UL 489 10 kA AIR 125 V DC UL 489 10 kA AIR 480Y/277 V AC UL 489 14 kA AIR 240 V AC CSA C22.2 No 5 10 kA AIR 480Y/277 V AC CSA C22.2 No 5 10 kA AIR 125 V DC CSA C22.2 No 5
Suitability for isolation	Yes EN/IEC 60947-2
Standards	EN/IEC 60947-2 GB 14048.2 UL 489 CSA C22.2 No 5
Product certifications	IEC CCC CSA UL

Complementary

[Ue] rated operational voltage	240 V AC 50/60 Hz 415 V AC 50/60 Hz 440 V AC 50/60 Hz
--------------------------------	---

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Magnetic tripping limit	8.5 x In +/- 20 % AC 12 x In +/- 20 % DC
[Ics] rated service breaking capacity	4.5 kA 75 % EN/IEC 60947-2 - 440 V AC 7.5 kA 75 % EN/IEC 60947-2 - 415 V AC 15 kA 75 % EN/IEC 60947-2 - 240 V AC 4.5 kA 75 % GB 14048.2 - 440 V AC 7.5 kA 75 % GB 14048.2 - 415 V AC 15 kA 75 % GB 14048.2 - 240 V AC
[Ui] rated insulation voltage	500 V AC EN/IEC 60947-2
[Uimp] rated impulse withstand voltage	6 kV EN/IEC 60947-2
Contact position indicator	Yes
Control Type	Toggle
local signalling	ON/OFF indication
Mounting Mode	Clip-on
Mounting Support	DIN rail
9 mm pitches	4
Height	4.06 in (103 mm)
Width	1.4 in (36 mm)
Depth	2.8 in (72 mm)
color	Gray
Mechanical durability	20000 cycles
Electrical durability	10000 cycles
Provision for padlocking	Padlockable
Connections - terminals	Tunnel type terminal top or bottom) 0.002...0.05 in ² (1...35 mm ²) AWG 18...AWG 2) - rigid Tunnel type terminal top or bottom) 0.002...0.04 in ² (1...25 mm ²) AWG 18...AWG 3) - flexible with ferrule Tunnel type terminal top or bottom) 0.002...0.04 in ² (1...25 mm ²) AWG 18...AWG 3) - flexible
Wire stripping length	0.6 in (14 mm) for top or bottom connection
Tightening torque	31.0 lbf.in (3.5 N.m) top or bottom
Earth-leakage protection	Without

Environment

IP degree of protection	IP20 conforming to IEC 60529 IP40 (modular enclosure) conforming to IEC 60529
Pollution degree	3 EN/IEC 60947-2
Tropicalisation	2 IEC 60068-1
Relative humidity	95 % 131.0000000000 °F (55 °C)
Operating altitude	0...6561.68 ft (0...2000 m)
Ambient air temperature for operation	-22.0000000000...158.0000000000 °F (-30...70 °C)
Ambient Air Temperature for Storage	-40.0000000000...176.0000000000 °F (-40...80 °C)

Ordering and shipping details

Category	US10DE200949
Discount Schedule	0DE2
GTIN	3606481169730

Returnability	Yes
Country of origin	US

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.953 in (7.500 cm)
Package 1 Width	1.417 in (3.600 cm)
Package 1 Length	4.055 in (10.300 cm)
Package 1 Weight	9.383 oz (266.000 g)
Unit Type of Package 2	BB1
Number of Units in Package 2	6
Package 2 Height	3.228 in (8.200 cm)
Package 2 Width	4.331 in (11.000 cm)
Package 2 Length	8.661 in (22.000 cm)
Package 2 Weight	3.624 lb(US) (1.644 kg)
Unit Type of Package 3	S03
Number of Units in Package 3	54
Package 3 Height	11.811 in (30.000 cm)
Package 3 Width	11.811 in (30.000 cm)
Package 3 Length	15.748 in (40.000 cm)
Package 3 Weight	33.634 lb(US) (15.256 kg)

Sustainability

Green Premium™ label is Schneider Electric’s commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO₂ products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

[Learn more about Green Premium >](#)

[Guide to assess a product’s sustainability >](#)



Transparency RoHS/REACH

Well-being performance

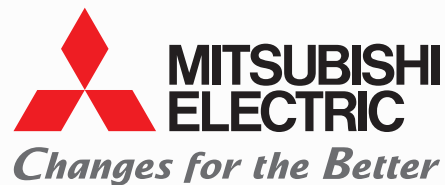
 Mercury Free	
 Rohs Exemption Information	Yes
 Halogen Free Product	

Certifications & Standards

Reach Regulation	REACH Declaration
Eu Rohs Directive	Compliant with Exemptions
China Rohs Regulation	China RoHS declaration Product out of China RoHS scope. Substance declaration for your information.
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.
Circularity Profile	No need of specific recycling operations



for a greener tomorrow



FACTORY AUTOMATION

INVERTER FR-D700

Global standard



- Pursuing the easy operation
- Long life and simple maintenance
- Compact and space-saving
- Supporting various applications

GLOBAL STANDARD

1 New standard of inverter

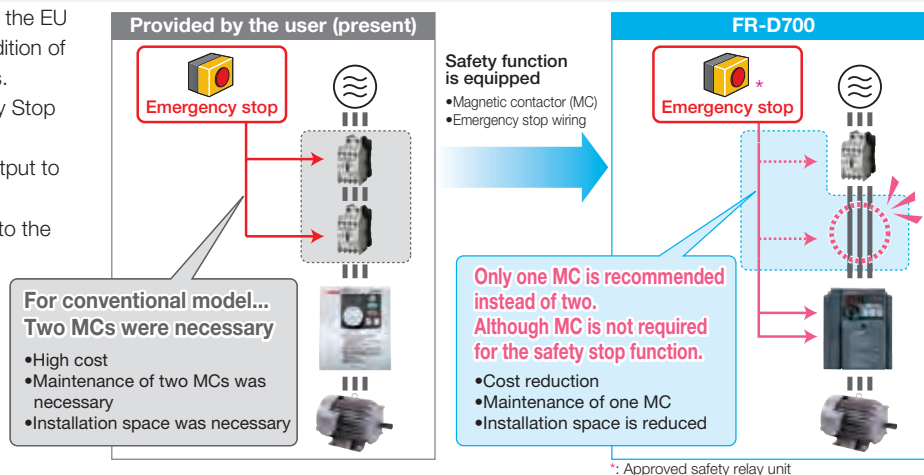
Highly reliable inverter!

(1) Safety stop function

The FR-D700 series is compliant to the EU Machinery Directive without the addition of previously required external devices. Operation of an external Emergency Stop device results in a highly reliable immediate shutoff of the D700's output to the motor. This safety stop function conforms to the following standards.

EN ISO 13849-1 Category 3 / PLD

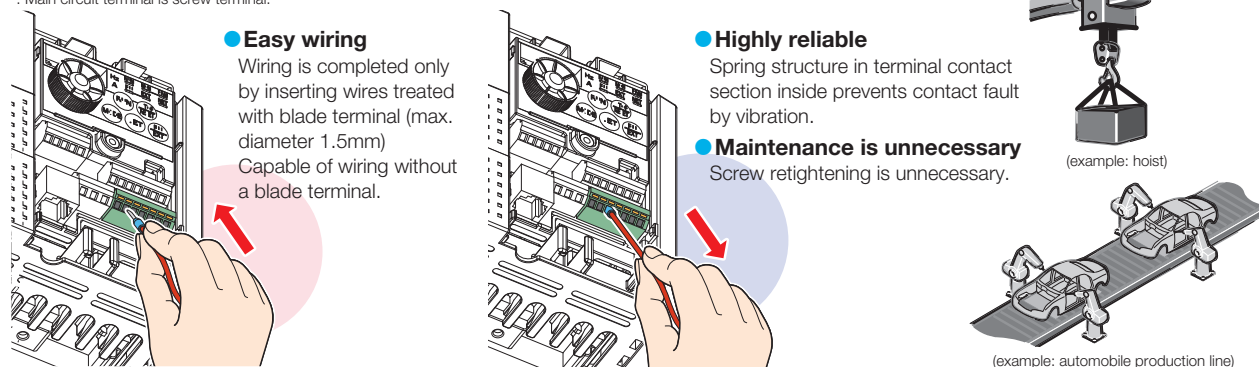
EN62061 / IEC61508 SIL2



(2) Spring clamp terminal (control circuit terminal)

With spring clamp terminals*, the wiring became easier and more secure.

*: Main circuit terminal is screw terminal.



(3) Long-life design

- The design life of the cooling fan has been extended to 10 years^{*1}. The life of the fan can be further extended utilizing the it's ON/OFF control.
- The design life of the capacitors has been extended to 10 years^{*1,2} by adopting a capacitor that endures about 5000 hours at 105°C surrounding air temperature.

^{*1}: Surrounding air temperature : annual average 40°C (free from corrosive gas, flammable gas, oil mist, dust and dirt) Since the design life is a calculated value, it is not a guaranteed value.

^{*2}: Output current : 80% of the inverter rated current

- Estimated service lifespan of the long-life parts

Components	Estimated lifespan of the FR-D700	Guideline of JEMA
Cooling fan	10 years	2 to 3 years
Main circuit smoothing capacitor	10 years	5 years
Printed board smoothing capacitor	10 years	5 years

^{*3}: Excerpts from "Periodic check of the transistorized inverter" of JEMA (Japan Electrical Manufacture's Association)

(4) Leading life check function

- Degrees of deterioration of main circuit capacitor, control circuit capacitor, and inrush current limit circuit can be monitored.
- Trouble can be avoided with the self-diagnostic alarm^{*4} that is output when the life span is near.

^{*4}: If any one of main circuit capacitor, control circuit capacitor, inrush current restriction circuit or cooling fan reaches the output level, an alarm is output. Capacity of the main circuit capacitor can be measured by setting parameter at a stop and turning the power from off to on. Measuring the capacity enables alarm to be output. The cooling fan outputs alarm by using fan speed detection.

(5) Password function

Registering a 4-digit password can limit parameter read/write. It is effective for parameter setting protection.



2 Mitsubishi's new standard (As of April 2008)

Compact yet equipped with highest level of function/performance!!

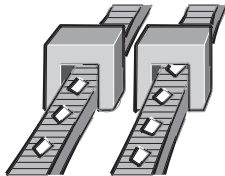
(1) 150%/1Hz high starting torque by General-purpose magnetic flux vector control

General-purpose magnetic flux vector control and auto tuning function are available. It ensures operation that requires high starting torque, such as transfer machine including conveyor, hoist, lift, etc., washing machine, and agitators.

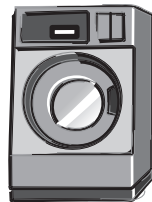
- High torque of 150%/1Hz and 200%/3Hz (3.7K or less) is realized (when the slip compensation function is valid).

• Auto tuning

Many kinds of motors can be optimally controlled with Mitsubishi original "non-rotation" auto tuning function. (R1 constants tuning)



(example: conveyor)

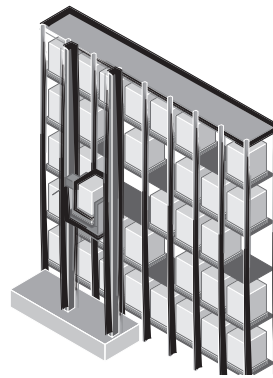


(example: industrial washing machine)

(2) Brake resistor can be connected

A brake transistor is built-in to the 0.4K or more. Connecting an optional brake resistor increases regeneration capability.

It is useful for deceleration time reduction of a machine with a large inertia, such as fan, and operation of lift, etc.



(example: automated storage)

(3) Enhanced function

New functions and useful functions from superior models support all sorts of applications.

• Regeneration avoidance function

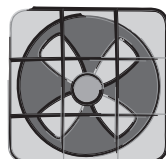
For a pressing machine and fan rotated faster than the set speed due to the effect of another fan, a trip is less likely to occur by automatically increasing frequency at regeneration.



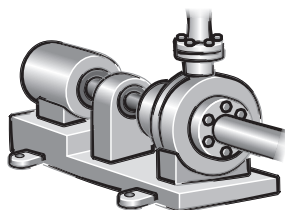
(example: pressing machine)

• Optimum excitation control

This control enables the motor efficiency to its optimum. More energy saving is possible in applications with variable load torque characteristic such as fan and pump.



(example: air-conditioning fan)

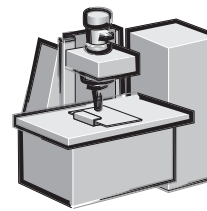


(example: pump)

• Power failure-time deceleration-to-stop function

The motor can be decelerated to a stop when a power failure or undervoltage occur to prevent the motor from coasting.

For fail-safe of machine tool, etc., it is effective to stop the motor when a power failure occurs.



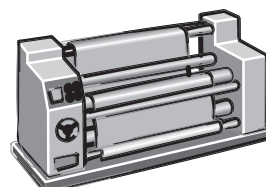
(example: spindle)

• Dancer control

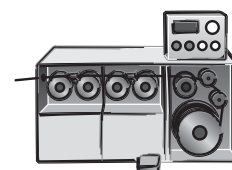
Entering position detection signal of dancer roll to use PID control enables tension control by dancer roll.

• Traverse function

Traverse function for wind-up drum of spinning machine and wiredrawing machine prevents unevenness and deformation at thread winding.



(example: textile machine)



(example: wiredrawing machine)

• Features

• Standard specifications

• Outline dimension drawings

• Terminal connection diagram
• Terminal specification explanation

• Operation panel
• Parameter unit

• Parameter list

• Protective functions

• Option and peripheral devices

• Precautions for operation/selection
• Precautions for peripheral device selection

• FR-D700 Series Specification Difference List

• Warranty
• International FA Center

3 Easy use and time saving built-in as standard

(1) Quick setup with the setting dial

Setting dial is the feature of Mitsubishi inverters.

- Displayed numbers can be jumped by turning the setting dial quickly, and numbers can be changed one by one by turning it slowly, enabling speedy parameter setting.
- The nonslip setting dial is easier to turn.



(2) Easy setting from a personal computer using the FR Configurator (option)

Connecting a personal computer and the inverter via RS-485 communication enables setting with wizard (interactive) function of the FR Configurator (inverter setup software).

In addition, a parameter setting can be converted from the FR-S500 series to the FR-D700 series by "Convert" function. "Graph" function displays monitor data in waveform.



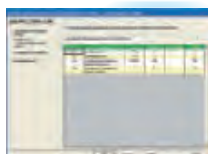
Setting wizard function (example: acceleration/deceleration time setting)



Acceleration/deceleration pattern setting



Acceleration/deceleration time setting



Parameter list display

(3) Enclosure surface operation panel FR-PA07 (option)

Optional enclosure surface operation panel (FR-PA07) can be connected. In addition, an operation panel for the FR-E500 series can be connected.

The operation panel of the inverter can not be removed. A parameter unit connection cable (FR-CB20□) is separately necessary.



(4) Parameter unit FR-PU07 (option)

An optional parameter unit (FR-PU07) can be connected as well. A parameter unit connection cable (FR-CB20□) is separately necessary.

- Setting such as direct input method with a numeric keypad, operation status indication, and help function are usable. Eight languages can be displayed.
- Parameter setting values of maximum of three inverters can be stored.



(5) Enhanced communication function

• Mitsubishi inverter protocol and MODBUS®RTU

Communication speed of RS-485 has been improved (communication at 38.4kbps is available)

"Multi command mode" has been added to Mitsubishi inverter protocol (data processing time of the inverter has been reduced to 1/4)
Supports MODBUS®RTU

4 Compact and space saving

(1) Easily replaceable compact body

Installation size is the same as that of the FR-S500 series which is the smallest model of the Mitsubishi inverter.



FR-D740-0.4K

FR-S540E-0.4K

(2) Side by side installation saves space

Space can be saved by side by side no clearance installation*.

*: Use the inverter at the surrounding air temperature of 40°C or less.



Introducing the Mitsubishi magnetic contactor

- Offers a selection of small frames
- Offers a line-up of safety contactors
- Supports small loads (auxiliary contact)
- Supports many international regulations as standard



Refer to page 28 for the selection.

5 Easy maintenance

(1) Easy replacement of cooling fan

A cooling fan is provided on top of the inverter of all capacities requiring a cooling fan (1.5K or more).

A cooling fan can be easily replaced without disconnecting main circuit wires.



(2) Combed shaped wiring cover

Since a cover can be fitted after wiring, wiring work is easily done.



6 Environment consciousness in global standard

(1) EU RoHS Directive compliant

Human and environment-friendly inverter in compliant with RoHS Directive.

RoHS Directive requires member nations to guarantee that new electrical and electronic equipment sold in the market after July 1, 2006 do not contain lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

<G> mark indicating RoHS Directive compliance is printed on the package.

(2) Filterpack FR-BFP2 (option)

Power factor improving DC reactor, zero phase reactor, and capacitive filter (radio noise filter), are frequently-used units for an air conditioning application. The filterpack combines those three units are available as an option.

(3) EMC Directive compliant noise filter

Compliance to the EMC Directive of European Norm is easier.

- Noise filter option which is compatible with EMC Directive (EN61800-3 2nd Environment Category C3) is available.

(4) Compliance with a variety of standards

Complies with UL, cUL, and EC Directives (CE marking), and the Radio Waves Act (South Korea) (KC marking). It is also certified as compliant with the Eurasian Conformity (EAC).



The single-phase 100V power input model is not compliant with the EMC Directive.

7 Lineup

The lineup of three phase 200V/400V class goes to 15K.

- For a use in harsh environment, special unit with board coating is also available. Please contact our sales representative.
- For the FR-D700 series, North American (NA), EU (EC), and Chinese (CHT) specifications also are supported.

*: This catalog explains based on the Japanese specifications.
Consult our sales office for specifications of each country.

FR-D740-0.4K

Symbol	Voltage
1	100V class
2	200V class
4	400V class

Symbol	Number of Power Phases
None	Three-phase input
S	Single-phase input
W	Single-phase input (double voltage output)

Symbol	Inverter Capacity
0.1K to 15K	Indicate capacity "kW".

Power Supply	Inverter Model	0.1	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15
Three phase 200V	FR-D720-□K	●	●	●	●	●	●	●	●	●	●	●
Three phase 400V	FR-D740-□K	—	—	●	●	●	●	●	●	●	●	●
Single phase 200V *	FR-D720S-□K	●	●	●	●	●	●	—	—	—	—	—
Single phase 100V *	FR-D710W-□K	●	●	●	●	—	—	—	—	—	—	—

*: Output of the single-phase 200V and single-phase 100V input models is three-phase 200V.

●: Available models

—: Not available

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Warranty International FA Center

● Single-phase 200V power supply

Model FR-D720S-□K		0.1	0.2	0.4	0.75	1.5	2.2
Model FR-D720S-□-NA		008	014	025	042	070	100
Model FR-D720S-□(SC)-EC		008	014	025	042	070	100
Model FR-D720S-□K-CHT		0.1	0.2	0.4	0.75	1.5	2.2
Applicable motor capacity (kW)*1		0.1	0.2	0.4	0.75	1.5	2.2
Output	Rated capacity (kVA)*2	0.3	0.6	1.0	1.7	2.8	4.0
	Rated current (A)	0.8	1.4	2.5	4.2	7.0	10.0
	Overload current rating*3	150% 60s, 200% 0.5s (inverse-time characteristics)					
	Rated voltage*4	Three-phase 200 to 240V					
	Regenerative braking torque*5	150%	100%	50%	20%		
Power supply	Rated input AC voltage/frequency	Single-phase 200 to 240V 50Hz/60Hz					
	Permissible AC voltage fluctuation	170 to 264V 50Hz/60Hz					
	Permissible frequency fluctuation	±5%					
	Power supply capacity (kVA)*6	0.5	0.9	1.5	2.3	4.0	5.2
Protective structure (JEM1030)		Enclosed type (IP20)					
Cooling system		Self-cooling			Forced air cooling		
Approximate mass (kg)		0.5	0.5	0.9	1.1	1.5	2.0

● Single-phase 100V power supply

Model FR-D710W-□K		0.1	0.2	0.4	0.75
Model FR-D710W-□-NA		008	014	025	042
Applicable motor capacity (kW)*1		0.1	0.2	0.4	0.75
Output	Rated capacity (kVA)*2	0.3	0.6	1.0	1.7
	Rated current (A)	0.8	1.4	2.5	4.2
	Overload current rating*3	150% 60s, 200% 0.5s (inverse-time characteristics)			
	Rated voltage	Three-phase 200 to 230V*7, *8			
	Regenerative braking torque*5	150%	100%		
Power supply	Rated input AC voltage/frequency	Single-phase 100 to 115V 50Hz/60Hz			
	Permissible AC voltage fluctuation	90 to 132V 50Hz/60Hz			
	Permissible frequency fluctuation	±5%			
	Power supply capacity (kVA)*6	0.5	0.9	1.5	2.5
Protective structure (JEM1030)		Enclosed type (IP20)			
Cooling system		Self-cooling			
Approximate mass (kg)		0.6	0.7	0.9	1.4

*1 The applicable motor capacity indicated is the maximum capacity applicable for use of the Mitsubishi 4-pole standard motor.

*2 The rated output capacity indicated assumes that the output voltage is 230V.

*3 The % value of the overload current rating indicated is the ratio of the overload current to the inverter's rated output current. For repeated duty, allow time for the inverter and motor to return to or below the temperatures under 100% load. If the automatic restart after instantaneous power failure function (Pr: 57) or power failure stop function (Pr: 261) is set and power supply voltage is low while load becomes bigger, the bus voltage decreases to power failure detection level and load of 100% or more may not be available.

*4 The maximum output voltage does not exceed the power supply voltage. The maximum output voltage can be changed within the setting range. However, the pulse voltage value of the inverter output side voltage remains unchanged at about $\sqrt{2}$ that of the power supply.

*5 The braking torque indicated is a short-duration average torque (which varies with motor loss) when the motor alone is decelerated from 60Hz in the shortest time and is not a continuous regenerative torque. When the motor is decelerated from the frequency higher than the base frequency, the average deceleration torque will reduce. Since the inverter does not contain a brake resistor, use the optional brake resistor when regenerative energy is large. (The option brake resistor cannot be used for 0.1K and 0.2K.) A brake unit (FR-BU2) may also be used.

*6 The power supply capacity varies with the value of the power supply side inverter impedance (including those of the input reactor and cables).

*7 For single-phase 100V power input model, the maximum output voltage is twice the amount of the power supply voltage and cannot be exceeded.

*8 In a single-phase 100V power input model, the output voltage may fall down when the load is heavy, and larger output current may flow compared to a three-phase input model. Use the motor with less load so that the output current is within the rated motor current range.

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Common specifications

Control specifications	Control method		Soft-PWM control/high carrier frequency PWM control (V/F control, General-purpose magnetic flux vector control, and Optimum excitation control are available)
	Output frequency range		0.2 to 400Hz
	Frequency setting resolution	Analog input	0.06Hz/60Hz (terminal2, 4: 0 to 10V/10 bits) 0.12Hz/60Hz (terminal2, 4: 0 to 5V/9 bits) 0.06Hz/60Hz (terminal4: 0 to 20mA/10 bits)
		Digital input	0.01Hz
	Frequency accuracy	Analog input	Within ±1% of the max. output frequency (25°C ±10°C)
		Digital input	Within 0.01% of the set output frequency
	Voltage/frequency characteristics		Base frequency can be set from 0 to 400Hz. Constant-torque/variable torque pattern can be selected
	Starting torque		150% or more (at 1Hz)...when General-purpose magnetic flux vector control and slip compensation is set
	Torque boost		Manual torque boost
	Acceleration/deceleration time setting		0.1 to 3600s (acceleration and deceleration can be set individually), Linear and S-pattern acceleration/deceleration modes are available.
DC injection brake		Operation frequency (0 to 120Hz), operation time (0 to 10s), and operation voltage (0 to 30%) can be changed	
Stall prevention operation level		Operation current level (0 to 200%), and whether to use the function or not can be selected	
Operation specifications	Frequency setting signal	Analog input	Two terminals Terminal 2: 0 to 10V and 0 to 5V are available Terminal 4: 0 to 10V, 0 to 5V, and 4 to 20mA are available
		Digital input	The signal is entered from the operation panel or parameter unit. Frequency setting increment can be set.
	Start signal		Forward and reverse rotation or start signal automatic self-holding input (3-wire input) can be selected.
	Input signal (five terminals)		The following signals can be assigned to <i>Pr. 178 to Pr.182 (input terminal function selection)</i> : multi-speed selection, remote setting, second function selection, terminal 4 input selection, JOG operation selection, PID control valid terminal, external thermal input, PU-External operation switchover, V/F switchover, output stop, start self-holding selection, forward rotation, reverse rotation command, inverter reset, PU-NET operation switchover, External-NET operation switchover, command source switchover, inverter operation enable signal, and PU operation external interlock.
	Operational functions		Maximum/minimum frequency setting, frequency jump operation, external thermal relay input selection, automatic restart after instantaneous power failure operation, forward/reverse rotation prevention, remote setting, second function, multi-speed operation, regeneration avoidance, slip compensation, operation mode selection, offline auto tuning function, PID control, computer link operation (RS-485), Optimum excitation control, power failure stop, speed smoothing control, MODBUS RTU
	Output signal		The following signals can be assigned to <i>Pr.190, Pr.192 and Pr.197 (output terminal function selection)</i> : inverter operation, up-to-frequency, overload alarm, output frequency detection, regenerative brake pre-alarm, electronic thermal relay function pre-alarm, inverter operation ready, output current detection, zero current detection, PID lower limit, PID upper limit, PID forward/reverse rotation output, fan alarm*1, heatsink overheat pre-alarm, deceleration at an instantaneous power failure, PID control activated, PID output interruption, safety monitor output, safety monitor output 2, during retry, life alarm, current average value monitor, remote output, alarm output, fault output, fault output 3, and maintenance timer alarm.
	Open collector output (two terminals) Relay output (one terminal)		The following signals can be assigned to <i>Pr.54 FM terminal function selection</i> : output frequency, output current (steady), output voltage, frequency setting, converter output voltage, regenerative brake duty, electronic thermal relay function load factor, output current peak value, converter output voltage peak value, reference voltage output, motor load factor, PID set point, PID measured value, output power, PID deviation, motor thermal load factor, and inverter thermal load factor. Pulse train output (1440 pulses/s/full scale)
Indication	Operation panel	Operating status	
	Parameter unit (FR-PU07)	Fault record	Fault record is displayed when a fault occurs. Past 8 fault records (output voltage/current/frequency/cumulative energization time right before the fault occurs) are stored.
Interactive guidance		Function (help) for operation guide *2	
Protective/warning function		Protective function	Overcurrent during acceleration, overcurrent during constant speed, overcurrent during deceleration, overvoltage during acceleration, overvoltage during constant speed, overvoltage during deceleration, inverter protection thermal operation, motor protection thermal operation, heatsink overheat, input phase loss *3 *4, output side earth (ground) fault overcurrent at start*3, output short circuit, output phase loss, external thermal relay operation *3, PTC thermistor operation*3, parameter error, PU disconnection, retry count excess *3, CPU fault, brake transistor alarm, inrush resistance overheat, analog input error, stall prevention operation, output current detection value exceeded *3, safety circuit fault
		Warning function	Fan alarm*1, overcurrent stall prevention, overvoltage stall prevention, PU stop, parameter write error, regenerative brake pre-alarm *3, electronic thermal relay function pre-alarm, maintenance output *3, undervoltage, operation panel lock, password locked, inverter reset, safety stop
Environment	Surrounding air temperature		-10°C to +50°C maximum (non-freezing) *5
	Ambient humidity		90%RH or less (non-condensing)
	Storage temperature*6		-20°C to +65°C
	Atmosphere		Indoors (without corrosive gas, flammable gas, oil mist, dust and dirt etc.)
Altitude/vibration		Maximum 1000m above sea level, 5.9m/s ² or less at 10 to 55Hz (directions of X, Y, Z axes)	

*1 As the 0.75K or lower are not provided with the cooling fan, this alarm does not function.

*2 This operation guide is only available with option parameter unit (FR-PU07).

*3 This protective function is not available in the initial status.

*4 This protective function is available with the three-phase power input specification model only.

*5 When using the inverters at the surrounding air temperature of 40°C or less, the inverters can be installed closely attached (0cm clearance).

*6 Temperatures applicable for a short time, e.g. in transit.

M9F42110

Multi 9 - C60BP - MCB - 1P - 10 A - C Curve - 277 V - 10 kA - UL 489

Product availability : Stock - Normally stocked in distribution facility



Main

Range	Multi 9
Product name	Multi 9 C60
Product or component type	Miniature circuit-breaker
Device short name	C60BP
Device application	Distribution
Poles description	1P
Number of protected poles	1
[In] rated current	10 A at 77 °F (25 °C) conforming to EN/IEC 60947-2
Network type	AC DC
Trip unit technology	Thermal-magnetic
Curve code	C
Breaking capacity	Icu 3 kA at 415 V AC conforming to EN/IEC 60947-2 Icu 10 kA at 240 V AC conforming to EN/IEC 60947-2 Icu 20 kA at 60 V DC conforming to EN/IEC 60947-2 Icu 3 kA at 415 V AC conforming to GB 14048.2 Icu 10 kA at 240 V AC conforming to GB 14048.2 Icu 20 kA at 60 V DC conforming to GB 14048.2 AIR 10 kA at 277 V AC conforming to UL 489 AIR 14 kA at 240 V AC conforming to UL 489 AIR 14 kA at 120 V AC conforming to UL 489 AIR 10 kA at 60 V DC conforming to UL 489 AIR 10 kA at 277 V AC conforming to CSA C22.2 No 5 AIR 14 kA at 240 V AC conforming to CSA C22.2 No 5 AIR 14 kA at 120 V AC conforming to CSA C22.2 No 5 AIR 10 kA at 60 V DC conforming to CSA C22.2 No 5
Suitability for isolation	Yes conforming to EN/IEC 60947-2
Standards	UL 489 CSA C22.2 No 5 GB 14048.2 EN/IEC 60947-2

Product certifications	UL CSA CCC IEC
------------------------	-------------------------

Complementary

System Voltage	240 V AC 50/60 Hz 415 V AC 50/60 Hz 60 V DC
Magnetic tripping limit	8.5 x In +/- 20% AC 12 x In +/- 20% DC
[Ics] rated service breaking capacity	2.25 kA 75 % x Icu at 415 V AC conforming to EN/IEC 60947-2 7.5 kA 75 % x Icu at 240 V AC conforming to EN/IEC 60947-2 2.25 kA 75 % x Icu at 415 V AC conforming to GB 14048.2 7.5 kA 75 % x Icu at 240 V AC conforming to GB 14048.2 15 kA 75 % x Icu at 60 V DC conforming to GB 14048.2 15 kA 75 % x Icu at 60 V DC conforming to EN/IEC 60947-2
[Ui] rated insulation voltage	500 V AC conforming to EN/IEC 60947-2
[Uimp] rated impulse withstand voltage	6 kV conforming to EN/IEC 60947-2
Contact position indicator	Yes
Control type	Toggle
Local signalling	ON/OFF indication
Mounting mode	Clip-on
Mounting support	DIN rail
9 mm pitches	2
Height	4.06 in (103 mm)
Width	0.71 in (18 mm)
Depth	2.83 in (72 mm)
Colour	Grey
Mechanical durability	20000 cycles
Electrical durability	10000 cycles
Provision for padlocking	Padlockable
Connections - terminals	Tunnel type terminal, top or bottom flexible with ferrule wire(s) 0...0.02 in ² (1...16 mm ²) max (AWG 18...AWG 8) Tunnel type terminal, top or bottom rigid wire(s) 0...0.04 in ² (1...25 mm ²) max (AWG 18...AWG 8) Tunnel type terminal, top or bottom flexible wire(s) 0...0.02 in ² (1...16 mm ²) max (AWG 18...AWG 8)
Wire stripping length	0.55 in (14 mm) (top or bottom)
Tightening torque	22.12 lbf.in (2.5 N.m) (top or bottom)
Earth-leakage protection	Without

Environment

IP degree of protection	IP40 modular enclosure conforming to IEC 60529 IP20 conforming to IEC 60529
Pollution degree	3 conforming to EN/IEC 60947-2
Tropicalisation	2 conforming to IEC 60068-1
Relative humidity	95 % (131 °F (55 °C))
Operating altitude	0...6561.68 ft (0...2000 m)
Ambient air temperature for operation	-22...158 °F (-30...70 °C)
Ambient air temperature for storage	-40...176 °F (-40...80 °C)

Ordering and shipping details

Category	00949 - M9 GEN 2 CB UL489
Discount Schedule	DE2
GTIN	00785901669043
Nbr. of units in pkg.	1
Package weight(Lbs)	0.26000000000000001

Returnability	Y
Country of origin	FR

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1719 - Schneider Electric declaration of conformity  Schneider Electric declaration of conformity
REACH	Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold
Product environmental profile	Available
Product end of life instructions	Need no specific recycling operations

Panel Thermo-Hygrostat

- Small, compact size (17.5 mm wide)
- Electronic control
- 4 functions
- Nominal voltage 110...240 V AC/DC
- Temperature ranges from +10 ° to +60°C
- Humidity range up to 90%
- LED status indication contact ON
- 35 mm rail (EN 60715) mount

Panel thermostat

- Small, compact size (17.5 mm wide)
- Snap action thermostatic Bimetal sensor
- Wide temperature setting range
- Long electrical life
- 35 mm rail (EN 60715) mount

* Measured with 0.3 K/min

** Measured with 0.5 %/min

For outline drawing see page 6

Contact specification

Contact configuration		1 NO (SPST-NO)	1 NC (SPST-NC)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	10/15	10/20	10/20
Rated voltage/ Maximum switching voltage	V AC	250/400	250/250	250/250
Rated load AC1	VA	2500	2500	2500
Rated load AC15 (230 V AC)	VA	500	250	250
Single phase motor rating AC3 (230 V AC)	kW	—	1.1	1.1
Breaking capacity DC1: 24/110/220 V	A	10/0.3/0.12	1/0.3/0.15	1/0.3/0.15
Minimum switching load	mW (V/mA)	500 (12/10)	500 (12/10)	500 (12/10)
Standard contact material		AgNi	AgNi	AgNi

Coil specifications

Nominal Voltage	V AC/DC	110...240	—	—
Rated Power	VA (50Hz)/W	1.8/0.44	—	—
Operating range	V AC/DC	88...264	—	—

Temperature specifications *

Setting range (ventilation)	°C	+10...+60	-20...+40	-20...+60	0...+60	-20...+40	-20...+60	0...+60
Switch differential	K	4 ± 2	7 ± 4			7 ± 4		
Setting accuracy full range	K	-1...+3	—			—		

Humidity specifications **

Setting range (humidity)	%	50...90	—			—		
Hysteresis	%	4 ± 2	—			—		
Setting accuracy	%	5	—			—		

Technical data

Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³			100 · 10 ³		
Ambient temperature range	°C	-25...+60	-45...+80			-45...+80		
Protection category		IP 20	IP 20			IP 20		

Approvals (according to type)



Ordering information

Example: 7T Series, Thermo-Hygrostat for temperature and humidity control, 110...240 V AC/DC, Multifunction, 35 mm rail (EN 60715) mount.

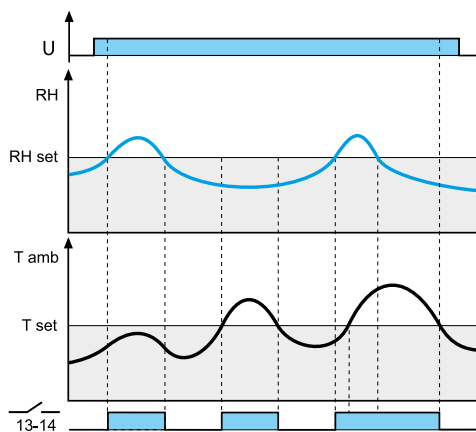
7 T . 5 1 . 0 . 2 3 0 . 4 3 6 0

Series	7 T	Control function	60 = Multifunction (only 7T.51) 01 = -20...+40 °C (only 7T.81) 02 = -20...+60 °C (only 7T.81) 03 = 0...+60 °C (only 7T.81)
Type	5 = Thermo-Hygrostatic control 8 = Temperature control	Contact configuration	3 = 1 NO contact 4 = 1 NC contact
No. of contacts	1 = 1 contact	Monitoring function	2 = Temperature control 4 = Temperature and Humidity, adjustable
Voltage type	0 = AC/DC (only 7T.51) 0 = No operating voltage required (only 7T.81)		
Rated operating voltage	230 = 110...240 V (only 7T.51) 000 = No operating voltage required		

Technical data

Insulation		7T.51	7T.81
Dielectric strength between open contacts	V AC	1000	500
Dielectric strength between supply and contact	V AC	2000	—
Other data			
Screw torque	Nm	0.5	0.5
Max. wire size		solid cable	stranded cable
	mm ²	1 x 2.5	1 x 1.5
	AWG	1 x 12	1 x 16

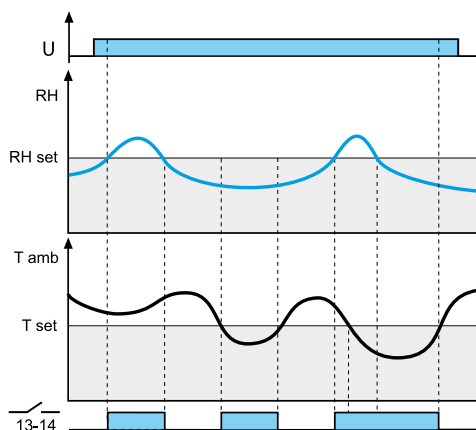
Functions 7T.51



HT: RH > RHset OR Tamb > Tset

Power is permanently applied to the thermo-hygrostat.
The contact 13-14 closes if the ambient humidity (RH) is > of set humidity (RHset) OR if the ambient temperature (Tamb) is > of set temperature (Tset).

When contact is close, LED is ON

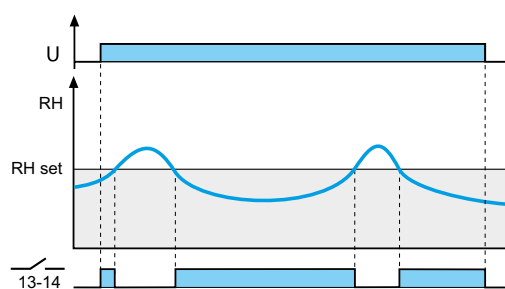


TH: RH > RHset OR Tamb < Tset

The contact 13-14 closes if the ambient humidity (RH) is > of set humidity (RHset) OR if the ambient temperature (Tamb) is < of set temperature (Tset).

When contact is close, LED is ON

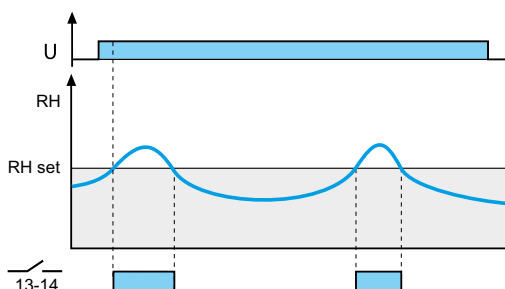
Functions 7T.51



HL: $RH < RH_{set}$

The contact 13-14 closes if the ambient humidity (RH) is < of set humidity (RHset)

When contact is close, LED is ON

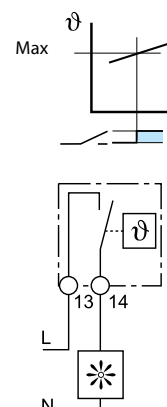
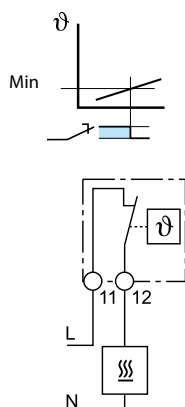


HM: $RH > RH_{set}$

The contact 13-14 closes if the ambient humidity (RH) is > of set humidity (RHset)

When contact is close, LED is ON

Functions 7T.81

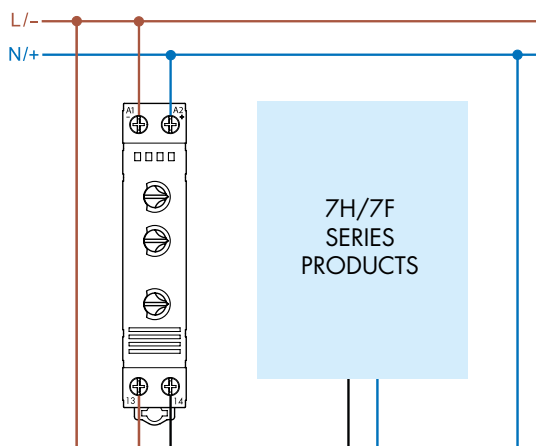


Heating control - Should the panel temperature fall below the (minimum) set temperature the contact will close to call for heat. The contact will open when this set temperature is exceeded.

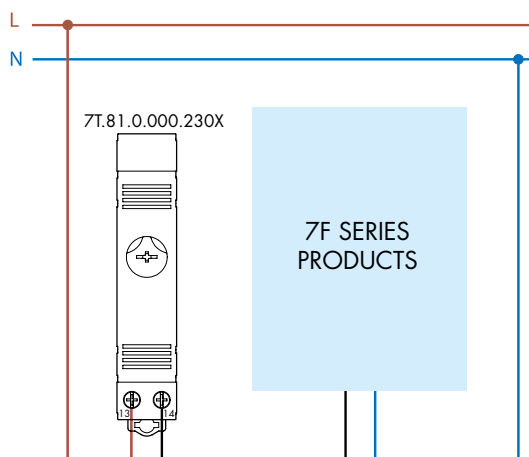
Ventilation control - Should the panel temperature exceed the (maximum) set temperature then the contact will close to call for cooling. The contact will open when the temperature falls below this set temperature.

Wiring diagrams

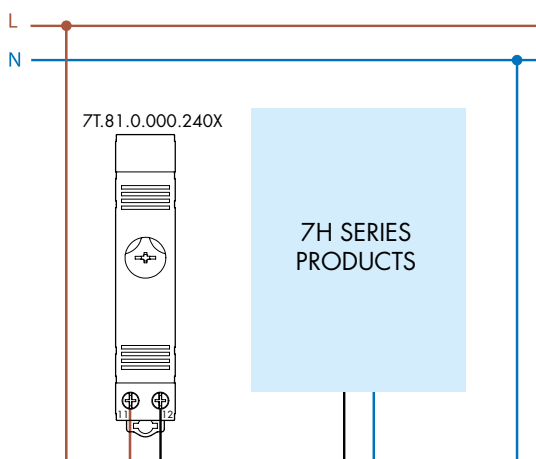
7T.51



7T.81...230x



7T.81...240x

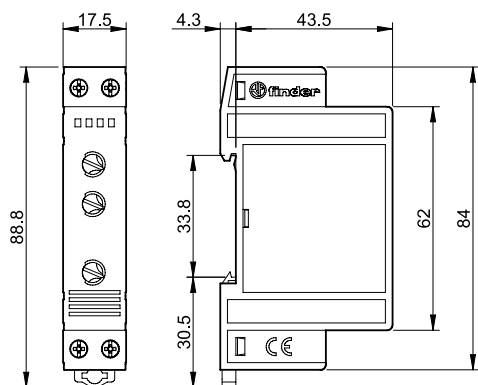


G

Outline drawings

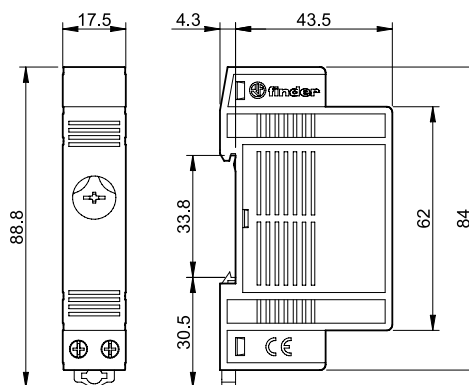
Type 7T.51

Screw terminal



Type 7T.81

Screw terminal



Panel heaters

Type 7H.51.0.230.0025

- Heating power 25 W

Type 7H.51.0.230.0050

- Heating power 50 W

- Nominal voltage (110...230)V AC/DC
- Safe touch
- PTC resistor, self regulating heating system
- Clip for 35 mm rail (EN 60715) mount

7H.51.0025/0050

Screw terminal



7H.51.0.230.0025



- Heating power 25 W
- Nominal voltage (110...230)V AC/DC
- Safe touch

7H.51.0.230.0050



- Heating power 50 W
- Nominal voltage (110...230)V AC/DC
- Safe touch

* At 20°C ambient temperature

** Except upper protection grille

For outline drawings see page 7

Heating specification

Heating power *	W	25	50
Heater		PTC resistor, self-regulating heating system	
Surface temperature**	°C	≤ 100	≤ 100
Housing		Plastic according to UL94 – V0, black	

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)/DC	110...230	110...230
Rated current	A	0.13	0.20
Operating range	V AC/DC	88...253	88...253

Technical data

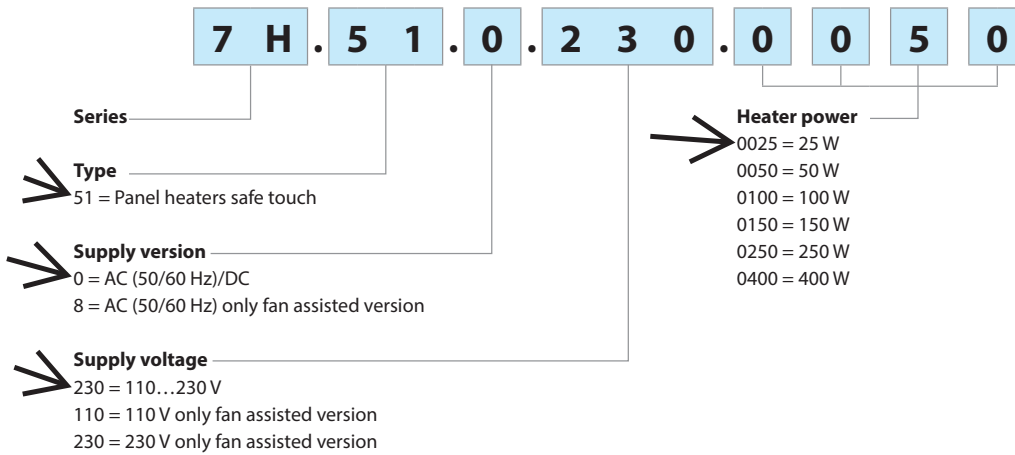
Radiator		Alluminium profile	
Electrical connection		Screw terminals	
Fitting position		Vertical	
Ambient temperature	°C	-45...+50	-45...+50
Protection category		IP 20	IP 20

Approvals (according to type)



Ordering information

Example: 7H series, Panel heaters, heating power 50 W, 110...230 V AC/DC.



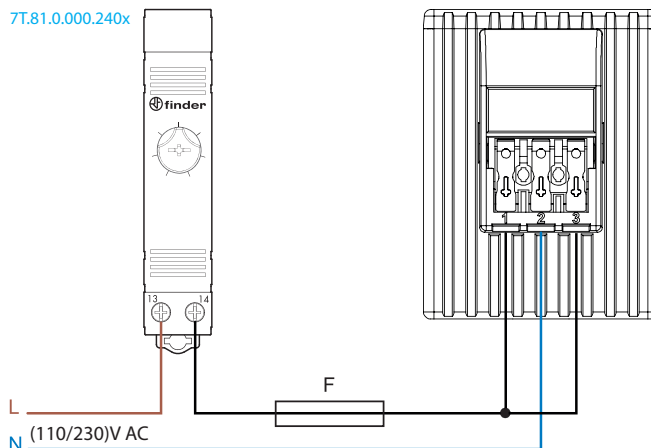
General data

Insulation		7H.51.0...025/050/100/150	7H.51.8...250/400
Rated voltage of power supply system	V AC	120/240	240
Rated insulations voltage	V AC	250	
Pollution degree		3	
Terminal insulation			
Dielectric strenght between L and N to metal clip on the housing	V AC (3s)	2500	
Overvoltage category		II	
Rated impulse voltage (1.2/50)µs	kV	2.5	
Terminals		solid cable	stranded cable
Max. wire size (push-in terminals)	mm ²	2 x 1.5	2 x 1.5
	AWG	2 x 16	2 x 16
Max. wire size (screw terminals)	mm ²	1 x 2.5	1 x 1.5
	AWG	1 x 12	1 x 16
Screw torque	Nm	0.5	

Wiring diagrams

Fan assisted version

7T.81.0.000.240x



NOTE: Separate supply (L) terminals for the heater and the internal fan allow them to be powered independently.

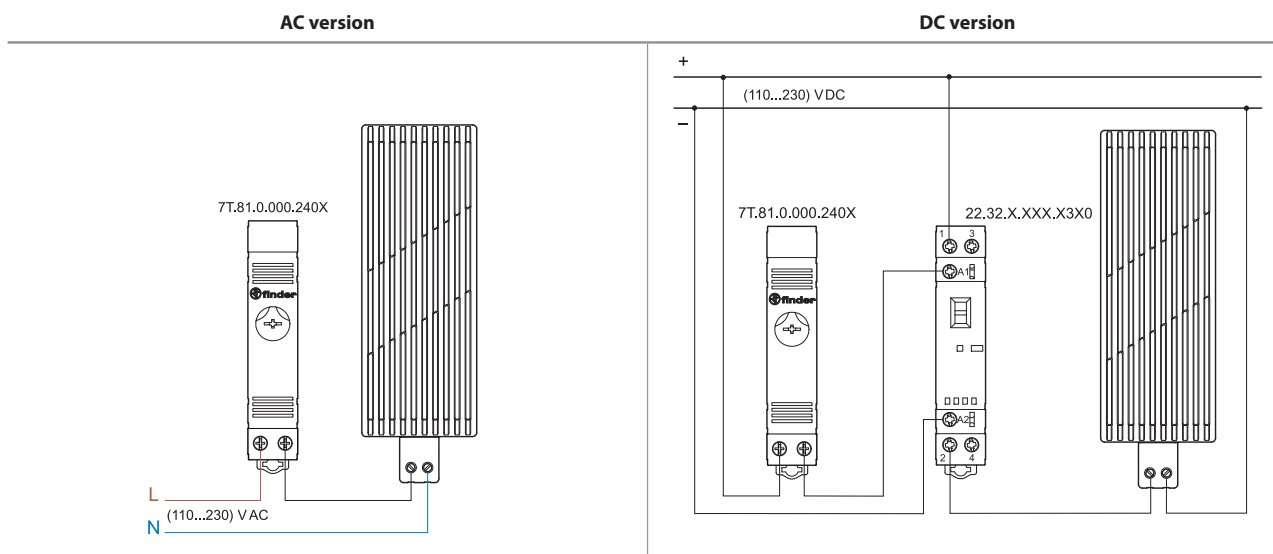
So, dependent on the specific situation, the installer might wish the heating element to be controlled by an upstream thermostat but require the fan to run continuously (although the latter will significantly reduce the product's life).

1 = L (heater)
2 = N
3 = L (fan)

F = aM 10 A @110 V AC
aM 6.3 A @230 V AC

Wiring diagrams

NOT Fan assisted versions



SAFETY NOTE

For reasons of safety and performance, heaters must be mounted in the following way:

1. keep a distance of 100 mm. from components above and below and of 60 mm from side components
2. install vertically (cables below heater) in the bottom part of cabinet
3. do not mount heaters over easily inflammable materials
4. do not operate in corrosive ambient air

WARNING

Do not cover the heater.

The 7H.51 Heater surface is very hot for 15-20 minutes after disconnecting.

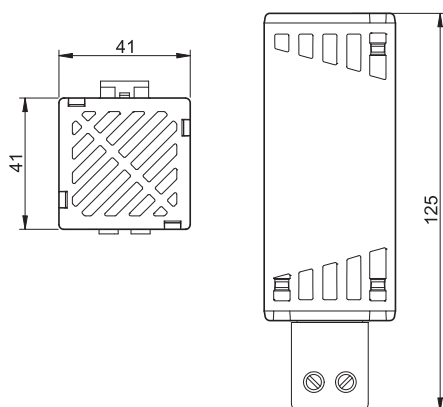
During working and maintenance, don't touch it.

Caution: risk of burns, temperatur of the side less than +100 °C..

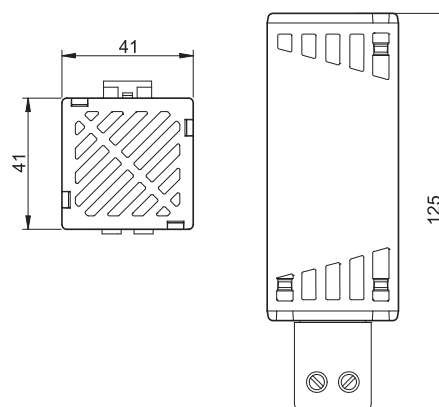
G

Outline drawings

Type 7H.51.0025
Screw terminal



Type 7H.51.0050
Screw terminal

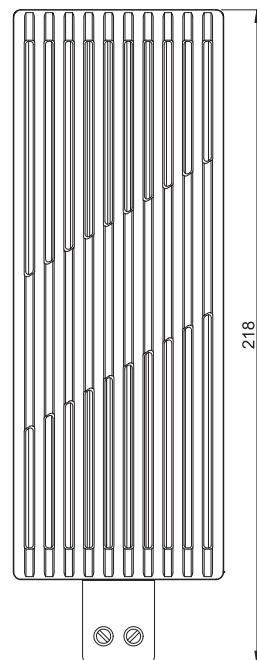
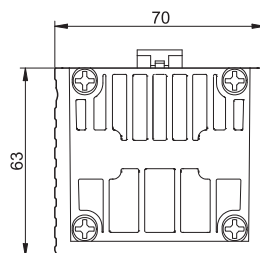
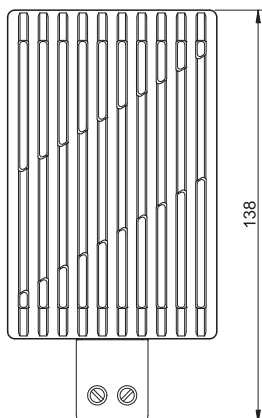
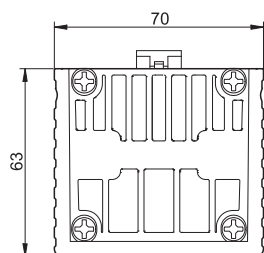


Outline drawings

Type 7H.51.0100
Screw terminal

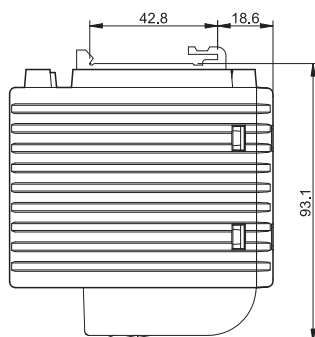
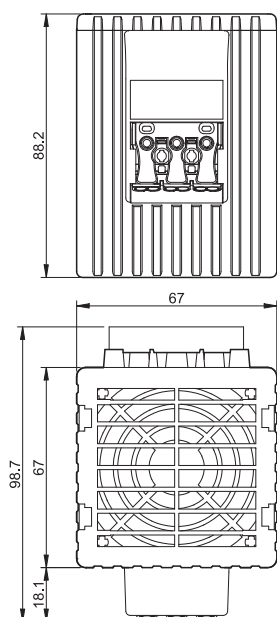


Type 7H.51.0150
Screw terminal



6

Types 7H.51.0250 / 0400
Push-in terminal



A

**General purpose relays
For socket mounting****Type 55.32**

- 2 CO 10 A

Type 55.33

- 3 CO 10 A

Type 55.34

- 4 CO 7 A

- AC & DC coils
- Lockable test button and mechanical flag indicator as standard on 2 & 4 pole types
- Integral LED and coil suppression options
- 94 series sockets for PCB or 35 mm rail mounting (EN 60715) with Screw, Screwless or Push-in terminals
- Coil Indication and EMC suppression modules 99 series and Timer module 86.30 options
- Optional alternative mounting adaptors
- UL Listing (certain relay/socket combinations)
- Cadmium Free contacts
- Contact material options
- European Patent

FOR UL RATINGS SEE:

"General technical information" page V

For outline drawing see page 6

Contact specification

Contact configuration		2 CO (DPDT)	3 CO (3PDT)	4 CO (4PDT)
Rated current/Maximum peak current	A	10/20	10/20	7/15
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400	250/250
Rated load AC1	VA	2500	2500	1750
Rated load AC15 (230 V AC)	VA	500	500	350
Single phase motor rating (230 V AC)	kW	0.37	0.37	0.125
Breaking capacity DC1: 30/110/220 V	A	10/0.5/0.25	10/0.5/0.25	7/0.5/0.25
Minimum switching load	mW (V/mA)	300 (5/5)	300 (5/5)	300 (5/5)
Standard contact material		AgNi	AgNi	AgNi

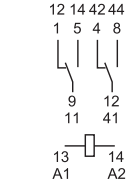
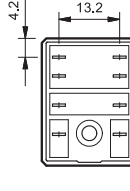
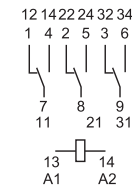
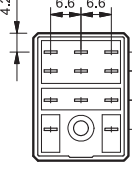
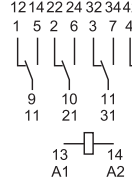
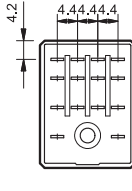
Coil specification

Nominal voltage (U_N)	V AC (50/60 Hz)	6 - 12 - 24 - 48 - 60 - 110 - 120 - 230 - 240		
	V DC	6 - 12 - 24 - 48 - 60 - 110 - 125 - 220		
Rated power AC/DC	VA (50 Hz)/W	1.5/1	1.5/1	1.5/1
Operating range	AC	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
	DC	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
Holding voltage	AC/DC	$0.8 U_N / 0.5 U_N$	$0.8 U_N / 0.5 U_N$	$0.8 U_N / 0.5 U_N$
Must drop-out voltage	AC/DC	$0.2 U_N / 0.1 U_N$	$0.2 U_N / 0.1 U_N$	$0.2 U_N / 0.1 U_N$

Technical data

Mechanical life AC/DC	cycles	$20 \cdot 10^6 / 50 \cdot 10^6$	$20 \cdot 10^6 / 50 \cdot 10^6$	$20 \cdot 10^6 / 50 \cdot 10^6$
Electrical life at rated load AC1	cycles	$200 \cdot 10^3$	$200 \cdot 10^3$	$150 \cdot 10^3$
Operate/release time	ms	10/5	9/5	9/5
Insulation between coil and contacts (1.2/50 μ s)	kV	4	4	4
Dielectric strength between open contacts	V AC	1000	1000	1000
Ambient temperature range	°C	-40...+85	-40...+85	-40...+85
Environmental protection		RT I	RT I	RT I

Approvals (according to type)

55.32	55.33	55.34
		
• 2 CO 10 A • Plug-in 94 series sockets	• 3 CO 10 A • Plug-in 94 series sockets	• 4 CO 7 A • Plug-in 94 series sockets
 	 	 

Ordering information

Example: 55 series plug-in relay, 4 CO, 12 V DC coil, lockable test button and mechanical indicator.

A

5 5 . 3 4 . 9 . 0 1 2 . 0 0 4 0

Series

Type
1 = PCB
3 = Plug-in

No. of poles
2 = 2 pole, 10 A
3 = 3 pole, 10 A
4 = 4 pole, 7 A

Coil version
8 = AC (50/60 Hz)
9 = DC

Coil voltage
See coil specifications

A: Contact material
0 = Standard AgNi
5 = AgNi + Au

B: Contact circuit
0 = CO (nPDT)

D: Special versions
0 = Standard
1 = Wash tight (RT III)
for 55.12, 55.13 and 55.14 only

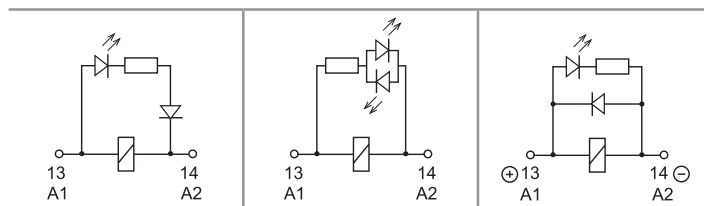
C: Options
0 = None
1 = Lockable test button
2 = Mechanical indicator
3 = LED (AC)
4 = Lockable test button + mechanical indicator
5 = Lockable test button + LED (AC)
54 = Lockable test button + LED (AC) + mechanical indicator
6* = Double LED (DC non-polarized)
7* = Lockable test button + double LED (DC non-polarized)
74* = Lockable test button + double LED (DC non-polarized) + mechanical indicator
8* = LED + diode (DC, polarity positive to pin A1/13)
9* = Lockable test button + LED + diode (DC, polarity positive to pin A1/13)
94* = Lockable test button + LED + diode (DC, polarity positive to pin A1/13) + mechanical indicator
* Options not available for 220 V DC versions.

Selecting features and options: only combinations in the same row are possible.

Preferred selections for best availability are shown in **bold**.

Type	Coil version	A	B	C	D
55.32/34	AC - DC	0 - 5	0	0	0
	AC	0 - 5	0	2 - 3 - 4 - 5	0
	AC	0 - 5	0	54	/
	DC	0 - 5	0	2 - 4 - 6 - 7 - 8 - 9	0
	DC	0 - 5	0	74 - 94	/
55.33	AC - DC	0 - 5	0	0	0
	AC	0 - 5	0	1 - 3 - 5	0
	DC	0 - 5	0	1 - 6 - 7 - 8 - 9	0
55.12/13/14	AC - DC	0 - 5	0	0	0 - 1

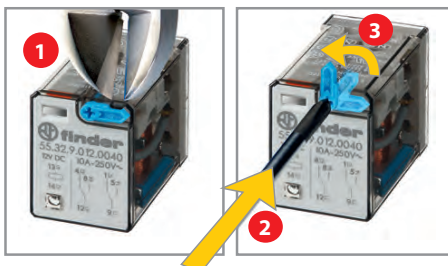
Descriptions: options and special versions



C: Option 3, 5, 54
LED (AC)

C: Option 6, 7, 74
Double LED
(DC non-polarized)

C: Option 8, 9, 94
LED + diode (DC, polarity
positive to pin A1/13)



Lockable test button and mechanical flag indicator
(0010, 0040, 0050, 0054, 0070, 0074, 0090, 0094)

The dual-purpose Finder test button can be used in two ways:

Case 1) The plastic pip (located directly above the test button) remains intact. In this case, when the test button is pushed, the contacts operate. When the test button is released the contacts return to their former state.

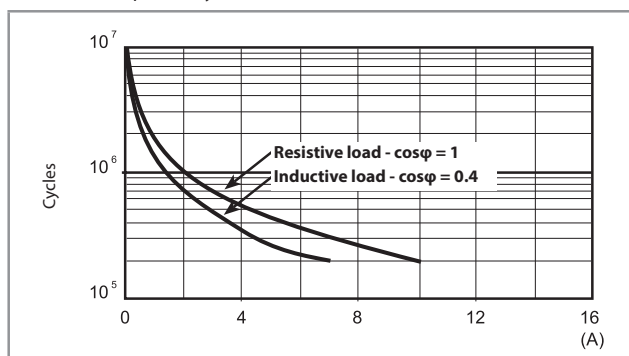
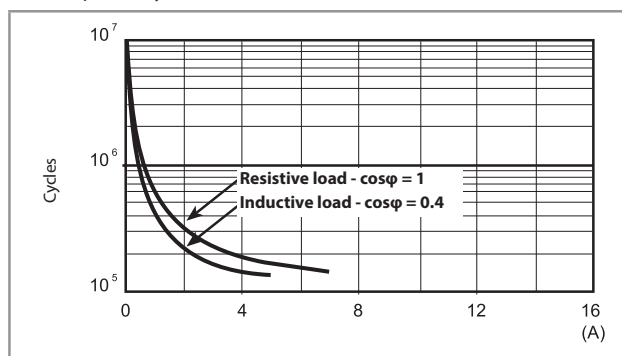
Case 2) The plastic pip is broken-off (using an appropriate cutting tool). In this case, (in addition to the above function), when the test button is pushed and rotated, the contacts are latched in the operating state, and remain so until the test button is rotated back to its former position. In both cases ensure that the test button actuation is swift and decisive.

Technical data

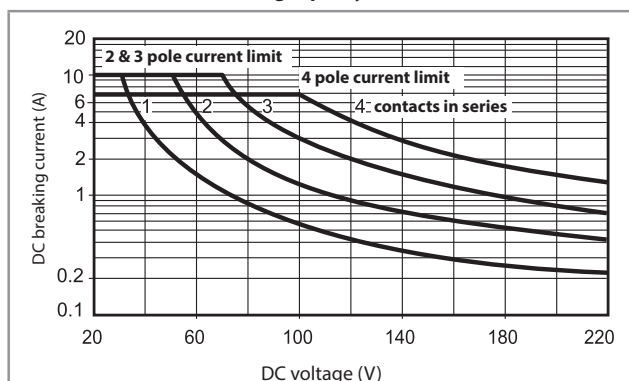
A

Insulation according to EN 61810-1			2 pole - 3 pole		4 pole	
Nominal voltage of supply system			V AC	230/400	230	
Rated insulation voltage			V AC	400	250	
Pollution degree				2	2	
Insulation between coil and contact set						
Type of Insulation				Basic	Basic	
Overvoltage category				III	III	
Rated impulse voltage			kV (1.2/50 μs)	4	4	
Dielectric strength			V AC	2000	2000	
Insulation between adjacent contacts						
Type of insulation				Basic	Basic	
Overvoltage category				III	II	
Rated impulse voltage			kV (1.2/50 μs)	4	2.5	
Dielectric strength			V AC	2000	2000	
Insulation between open contacts						
Type of disconnection				Micro-disconnection	Micro-disconnection	
Dielectric strength			V AC/kV (1.2/50 μs)	1000/1.5	1000/1.5	
Insulation between coil terminals						
Rated impulse voltage (surge) differential mode (according to EN 61000-4-5)			kV(1.2/50 μs)	4		
Other data						
Bounce time: NO/NC			ms	1/4 (2 pole), 1/6 (3 pole), 2/4 (4 pole)		
Vibration resistance (5...55)Hz: NO/NC			g	15/15		
Shock resistance			g	16		
Power lost to the environment		without contact current	W	1		
		with rated current	W	3 (2 pole)	4 (3 pole)	3 (4 pole)
Recommended distance between relays mounted on PCB			mm	≥ 5		

Contact specification

F 55 - Electrical life (AC) v contact current
2 and 3 pole relaysF 55 - Electrical life (AC) v contact current
4 pole relays

H 55 - Maximum DC1 breaking capacity



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of $\geq 100 \cdot 10^3$ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.

Note: the release time of the load will be increased.

Coil specifications

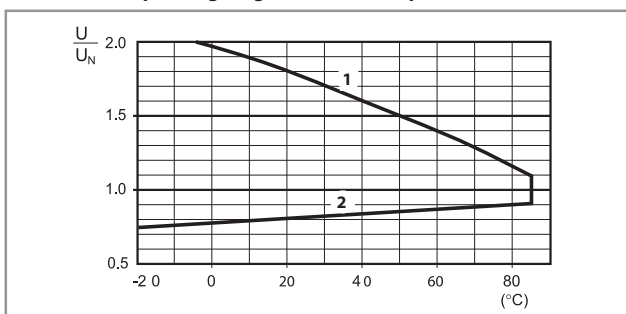
DC coil data

Nominal voltage U_N	Coil code	Operating range		Resistance R	Rated coil consumption I at U_N
V		U_{min} V	U_{max} V	Ω	mA
6	9.006	4.8	6.6	40	150
12	9.012	9.6	13.2	140	86
24	9.024	19.2	26.4	600	40
48	9.048	38.4	52.8	2400	20
60	9.060	48	66	4000	15
110	9.110	88	121	12500	8.8
125	9.125	100	138	17300	7.2
220	9.220	176	242	54000	4

AC coil data

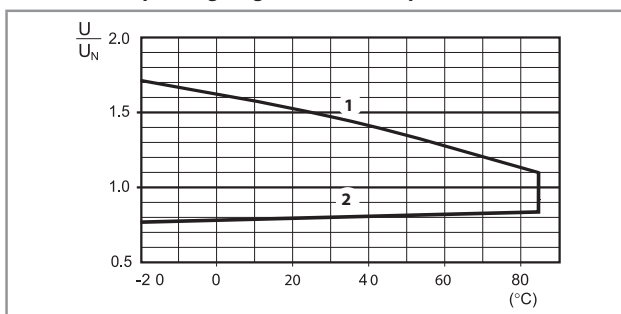
Nominal voltage U_N	Coil code	Operating range		Resistance R	Rated coil consumption I at U_N
V		U_{min} V	U_{max} V	Ω	mA
6	8.006	4.8	6.6	12	200
12	8.012	9.6	13.2	50	97
24	8.024	19.2	26.4	190	53
48	8.048	38.4	52.8	770	25
60	8.060	48	66	1200	21
110	8.110	88	121	3940	12.5
120	8.120	96	132	4700	12
230	8.230	184	253	17000	6
240	8.240	192	264	19100	5.3

R 55 - DC coil operating range v ambient temperature



- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

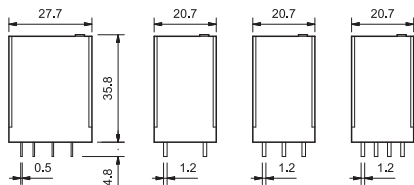
R 55 - AC coil operating range v ambient temperature



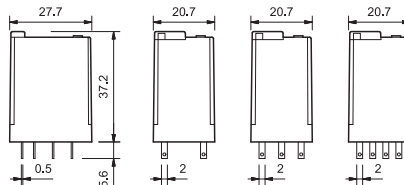
- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

Outline drawings

Types 55.12/13/14



Types 55.32/33/34



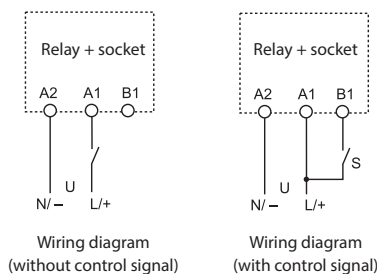
Timer modules for use in conjunction with relay & socket.
86.00 - Multi-function & multi-voltage timer module
86.30 - Bi-function & multi-voltage timer module

- Timer module type 86.00 for 90, 92, 96 series sockets and type 86.30 for 90, 92, 94, 95, 96, 97 series sockets
- Wide supply voltage range:
12...240 V AC/DC (86.00)
12...24 V AC/DC or 230...240 V AC (86.30)
- LED indicator
- Atex versions available

86.00

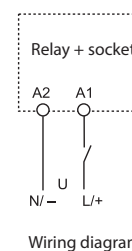

- Time scale: from 0.05 s to 100 h
- Multi-function
- Plug-in for use with 90.02, 90.03, 92.03 and 96.04 sockets

AI: On-delay
DI: Interval
SW: Symmetrical flasher (starting pulse on)
BE: Off-delay with control signal
CE: On- and off-delay with control signal
DE: Interval with control signal on
EE: Interval with control signal off
FE: Interval with control signal on and off


86.30


- Time scale: from 0.05 s to 100 h
- Bi-function
- Plug-in for use with 90.02, 90.03, 92.03, 94.P3, 94.P4, 94.02, 94.03, 94.04, 95.P3, 95.P5, 95.03, 95.05, 96.02, 96.04, 97.P1, 97.P2, 97.01 and 97.02 sockets

AI: On-delay
DI: Interval



* For Atex versions, refer to the "Other data" table on the page 4
For outline drawing see page 5

Contact specification*

Contact configuration

Rated current/Maximum peak current A

Rated voltage/Maximum switching voltage V AC

Rated load AC1 VA

Rated load AC15 (230 V AC) VA

Single phase motor rating (230 V AC) kW

Breaking capacity DC1: 24/110/220 V A

Minimum switching load mW (V/mA)

Standard contact material

Standard contact material

Supply specification*

Nominal voltage (U_N) V AC (50/60 Hz)

V DC

Rated power AC/DC W

Operating range V AC (50/60 Hz)

DC

Technical data

Specified time range

Repeatability %

Recovery time ms

Minimum control impulse ms

Setting accuracy full range %

Electrical life at rated load in AC1 cycles

Ambient temperature range °C

Protection category

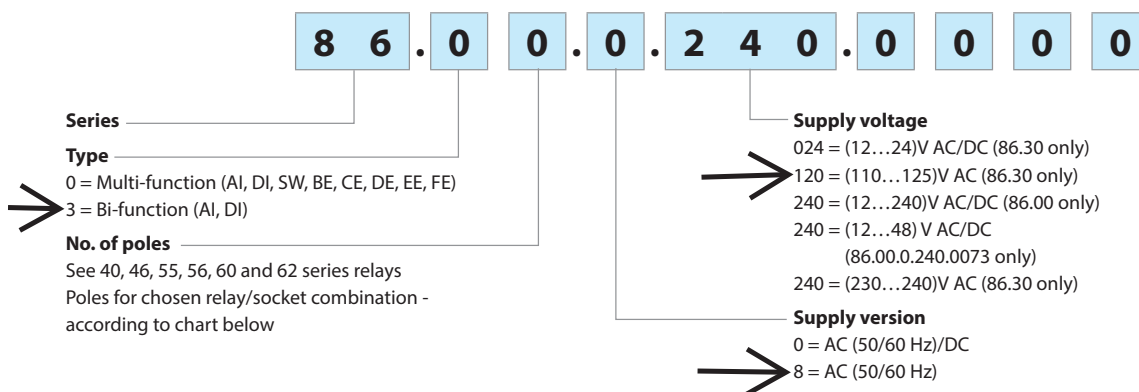
Approvals (according to type)

See 56, 60 and 62 series relays
Note: Do not use with relays
62.3x.x012.x300 and 62.3x.x012.x600

See 40, 46, 55, 56, 60 and
62 series relays

Ordering information

Example: 86 series multi-function timer module, (12...240)V AC/DC supply voltage.



Combinations

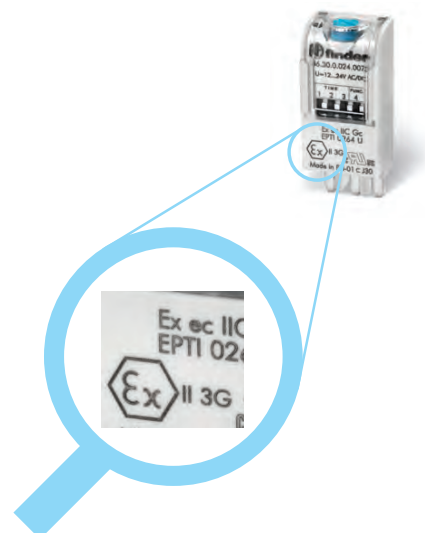
Number of poles	Relay type	Socket type	Timer module
1	40.31	95.P3/95.03	86.30
1	40.51/61	95.P5/95.05	86.30
1	46.61	97.P1/97.01	86.30
2	40.52/40.62	95.P5/95.05	86.30
2	46.52	97.P2/97.02	86.30
2	55.32	94.P4/94.02	86.30
2	56.32	96.02	86.30
2	60.12	90.02	86.00/86.30
2	62.32	92.03	86.00/86.30
3	55.33	94.P3/94.03	86.30
3	60.13	90.03	86.00/86.30
3	62.33	92.03	86.00/86.30
4	55.34	94.P4/94.04	86.30
4	56.34	96.04	86.00/86.30

Other data Timer ATEX versions

Code available	Nominal voltage	Operating range	Use temperature
86.00.0.240.0073	12-48 V AC/DC	10.2...60 V AC/DC	-20...+50°C
86.30.0.024.0073	12-24 V AC/DC	9.6...33.6 V AC/DC	-20...+50°C

Markings - ATEX versions - ATEX, II 3G Ex ec IIC Gc

MARKING	
	Specific marking of explosion protection
II	Component for surface plant (different from mines)
3	Category 3: normal level of protection
GAS	G Explosive atmosphere due to presence of combustible gas vapour or mist
	Ex ec Increased security
	IIC Gas group
	Gc Equipment Protection Level
-20 °C ≤ Ta ≤ +50 °C Ambient temperature	
EPTI 17 ATEX 0264 U EPTI: laboratory which issues the CE type certificate 17: year of issue of certificate 0264: number of CE type certificate	
U: ATEX component	



Technical data

EMC specifications				
Type of test		Reference standard	86.00	86.30
Electrostatic discharge	contact discharge	EN 61000-4-2	4 kV	n.a.
	air discharge	EN 61000-4-2	8 kV	8 kV
Radio-frequency electromagnetic field (80 ÷ 1000 MHz)		EN 61000-4-3	10 V/m	10 V/m
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals		EN 61000-4-4	4 kV	2 kV
Surges (1.2/50 µs) on Supply terminals	common mode	EN 61000-4-5	4 kV	2 kV
	differential mode	EN 61000-4-5	4 kV	1 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals		EN 61000-4-6	10 V	10 V
Radiated and conducted emission		EN55022	class B	class B
Other data		86.00	86.30	
Current absorption on signal control (B1)		mA	1	—
Power lost to the environment	without contact current	W	0.1 (12 V) - 1 (230 V)	0.2
	with rated current		See 56, 60 and 62 series relays	See 40, 46, 55, 56, 60, 62 series relays

Times scales

						
(0.05...1)s	(0.5...10)s	(5...100)s	(0.5...10)min	(5...100)min	(0.5...10)h	(5...100)h

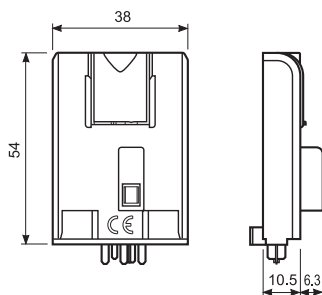
NOTE: Time scales and functions must be set before energising the timer.

To achieve the minimum time setting of 0.05 seconds it is necessary to use one of the functions with control signal.

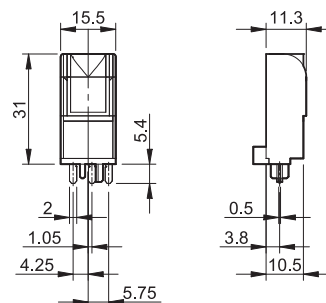
When setting very short times it may be necessary to take into account the operate time of the relay used.

Outline drawings

Type 86.00



Type 86.30



Functions

 U = Supply voltage S = Signal switch

— = Output contact

LED Type 86.00	LED Type 86.30	Supply voltage	NO output contact
		OFF	Open
		ON	Open
		ON	Open (Timing in Progress)
		ON	Closed

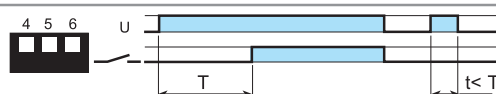
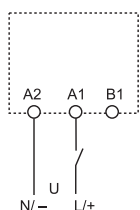
Without control signal = Start via contact in supply line (A1).

With control signal = Start via contact into control terminal (B1).

Wiring diagram

Type 86.00

Without control signal

**(AI) On-delay.**

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

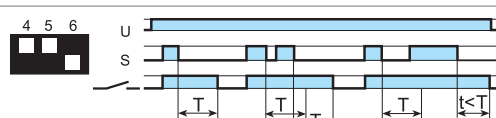
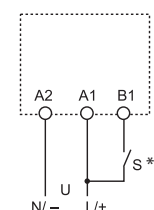
**(DI) Interval.**

Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

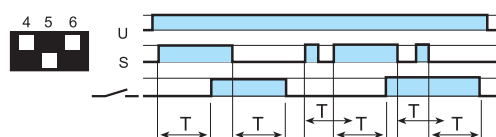
**(SW) Symmetrical flasher (starting pulse on).**

Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

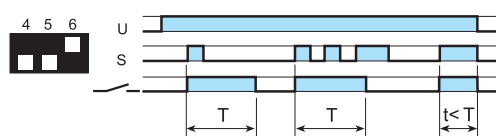
With control signal

**(BE) Off-delay with control signal.**

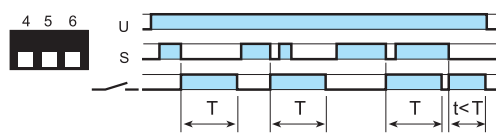
Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.

**(CE) On- and off-delay with control signal.**

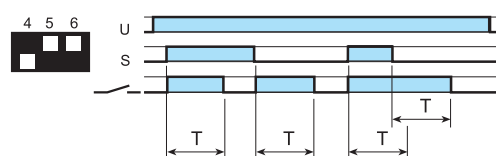
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which time the output contacts transfer. Opening the Signal switch initiates the same preset delay, after which time the output contacts reset.

**(DE) Interval with control signal on.**

Power is permanently applied to the timer. On momentary or maintained closure of Signal Switch (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

**(EE) Interval with control signal off.**

Power is permanently applied to the timer. On opening of the Signal Switch (S) the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

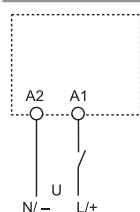
**(FE) Interval with control signal on and off.**

Power is permanently applied to the timer. Both the opening and closing of the Signal Switch (S) initiates the transfer of the output contacts. In both instances the contacts reset after the delay period has elapsed.

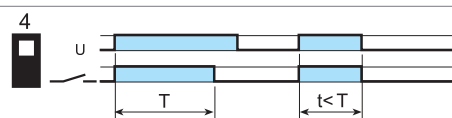
* With DC supply, positive polarity has to be connected to B1 terminal (according to EN 60204-1). Switch S should be exclusively used to provide the control signal to terminal B1. (Do not connect any other load at this point).

Wiring diagram

Type 86.30

**(AI) On-delay.**

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

**(DI) Interval.**

Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.



R15-MB

- Red Color Polycarbonate Lens
- 120v, 15w Bulb
- U.L. Listed NITW--Industrial Control Panels
- NEMA 4X
- 1/4" Quick Connect Terminals
- Single Hole Mount Design

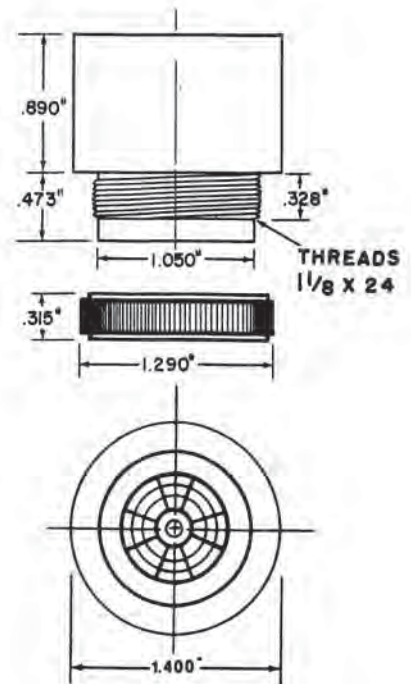
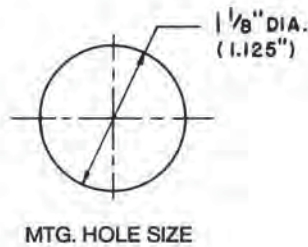
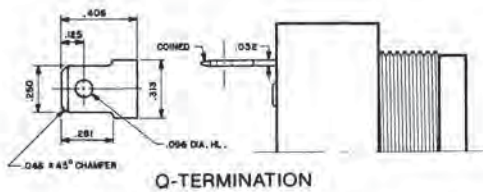


1376 Township Road 743 • Ashland, Ohio 44805
PH 419-281-9120 • FX 419-289-8261

AC⚡DC EQUIPMENT CO.

3101 Bernard Dr.
Edgewood, KY 41017
Phone (606) 341-0330

HORNS



- ⚡ Emits a warble tone.
- ⚡ Sound level at 2 feet - 95 DB
- ⚡ Operating current at max. voltage - See below.
- ⚡ Operating temperature -40°C (-40°F) to + 65° (150°F).
- ⚡ Reverse polarity protected.
- ⚡ Case - glass filled polyester.
- ⚡ Potting - epoxy resin.
- ⚡ Alarms mounted in a suitable enclosure can be used outdoors.

Ordering Information

Cat. No.	V	MA
MW-09-616-Q	12 VDC	18
MW-09-550-Q	24 VAC	8
MW-09-201-Q	120 VAC	8
MW-09-301-Q	220 VAC	8

Add suffix G to catalog no. for gasket

CONTACT AC-DC FOR MODIFICATIONS

Product data sheet

Specifications



Monolithic push button, Harmony XB7, plastic, black, 22mm, spring return, unmarked, 1NO+1NC

XB7NA25

Main

Range of Product	Harmony XB7
Product or Component Type	Push-button
Device short name	XB7
Mounting diamete	0.9 in (22 mm)
Sale per indivisible quantity	10
IP degree of protection	IP20 IEC 60529 rear face) IP65 IEC 60529 front face)
Shape of signaling unit head	Round
Type of operator	spring return
Operator profile	Black flush, unmarked
Contacts type and composition	1 NO + 1 NC
Connections - terminals	Screw clamp terminals, <= 2 x 1.5 mm² with cable end IEC 60947-1 Screw clamp terminals, 1 x 0.34...2 x 2.5 mm² without cable end IEC 60947-1
device presentation	Monolithic product

Complementary

CAD overall width	1.1 in (29 mm)
CAD overall height	1.1 in (29 mm)
CAD overall depth	2.03 in (51.5 mm)
Terminals description ISO n°1	(21-22)NC (13-14)NO
Net Weight	0.046 lb(US) (0.021 kg)
Device mounting	Fixing hole 0.9 in (22.5 mm) 22.3 +0.4/0 IEC 60947-1
Fixing center	>= 30 x 40 mm support panel) metal 0.04...0.2 in (1...6 mm) >= 30 x 40 mm support panel) plastic 0.08...0.2 in (2...6 mm)
Fixing mode	Fixing nut beneath head 17.7...21.2 lbf.in (2...2.4 N.m)
Contact operation	Slow-break
Positive opening	With NC contact IEC 60947-5-1 appendix K
Mechanical durability	1000000 cycles
Tightening torque	7.08...10.6 lbf.in (0.8...1.2 N.m) IEC 60947-1

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Shape of screw head	Cross JIS No 1 Cross Philips no 1 Cross pozidriv No 1 Slotted flat Ø 4 mm Slotted flat Ø 5.5 mm
Short-circuit protection	4 A cartridge fuse gG IEC 60947-5-1
[Ui] rated insulation voltage	250 V 3)IEC 60947-1
[Uimp] rated impulse withstand voltage	4 kV IEC 60947-1
[Ie] rated operational current	0.1 A 250 V, DC-13, R300 IEC 60947-5-1 0.22 A 125 V, DC-13, R300 IEC 60947-5-1 0.3 A 240 V, AC-14, D300 IEC 60947-5-1 0.6 A 120 V, AC-14, D300 IEC 60947-5-1
Electrical durability	1000000 cycles, DC-13, 0.3 A 24 V 216000 cyc/mn 0.5 IEC 60947-5-1 appendix C 1000000 cycles, AC-15, 0.03 A 230 V 216000 cyc/mn 0.5 IEC 60947-5-1 appendix C 1000000 cycles, AC-15, 0.09 A 240 V 108000 cyc/mn 0.5 IEC 60947-5-1 appendix C
Electrical reliability	$\Lambda \leq 10\exp(-6)$ 17 V, 5 mA IEC 60947-5-4

Environment

protective treatment	TH
Ambient Air Temperature for Storage	-40...158 °F (-40...70 °C)
Ambient Air Temperature for Operation	-13...158 °F (-25...70 °C)
Overvoltage category	Class II IEC 61140
NEMA degree of protection	NEMA 12 UL 50 E NEMA 3 UL 50 E
Standards	UL 508 JIS C8201-5-1 CSA C22.2 No 14 IEC 60947-1 IEC 60947-5-1 JIS C8201-1
Product Certifications	CCC GOST
Vibration resistance	5 gn 2...500 Hz)IEC 60068-2-6
Shock resistance	50 gn 11 ms) half sine wave acceleration IEC 60068-2-27 30 gn 18 ms) half sine wave acceleration IEC 60068-2-27

Ordering and shipping details

Category	US10CS222464
Discount Schedule	0CS2
GTIN	3606480469954
Returnability	Yes
Country of origin	ID

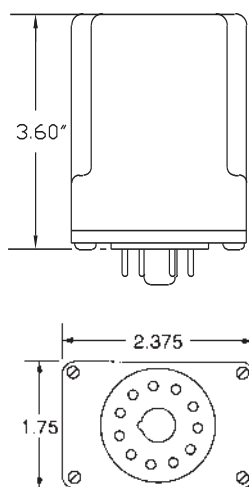
Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.4 in (6.0 cm)
Package 1 Width	1.2 in (3.0 cm)
Package 1 Length	1.2 in (3.0 cm)

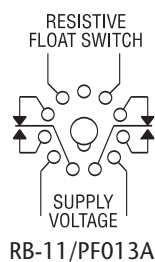
OPERATION

The ATC Diversified SPM Series Single channel seal failure module is a specialized control for monitoring the **shaft seal** of a **submersible pump motor**. A leak is detected by sensing the position of a resistive float switch installed in the seal cavity. When the resistance drops below the sensitivity rating, the output relay energizes and the LED illuminates. When the fault condition clears, the output relay resets automatically.

DIMENSIONS (INCHES)



WIRING



MODEL NUMBER >>>>>>	SPM	120	AAA	
				Sensitivity
				470 Ω $\pm 10\%$ Fixed
				470 Ω to 10K Ω $\pm 10\%$ Adjustable
				4.7K Ω to 100K Ω $\pm 10\%$ Adjustable

100K



CA[®]US

Single Channel Seal Failure Alarm

SPECIFICATIONS

CONTROL VOLTAGE	120 VAC, 50/60 Hz	
SWITCH VOLTAGE	9 VDC	
ISOLATION	2500 Volts	
POWER REQUIRED	2 VA	
DUTY CYCLE	Continuous	
SENSITIVITY	470 Ω $\pm 10\%$ Fixed	
	470 Ω to 10K Ω $\pm 10\%$ Adjustable	
	4.7K Ω to 100K Ω $\pm 10\%$ Adjustable	
CONTACT RATING	DPDT, 10 A @ 250 VAC Resistive, 360 VA Inductive	
RESPONSE TIMES	Operate	15 ms (approximately)
	Release	8 ms (approximately)
LIFE EXPECTANCY	Mechanical	10,000,000 Operations (Minimum)
	Electrical	50,000 Operations @ Rated Load
INDICATORS	Red LED illuminates when leak is detected	
TEMPERATURE RATING	Operate	-4° to 131°F (-20° to +55°C)
	Storage	-40° to 185°F (-40° to +85°C)
ENCLOSURE	11-Pin plug-in "A" style enclosure	
WEIGHT	8 oz.	



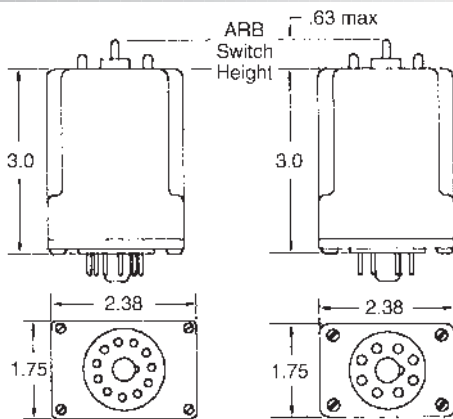
ARA

ARB



Duplexor

DIMENSIONS (INCHES)



The **Duplexor** is used in control panels where **two loads** are required to alternate to provide equal run time on the loads. The alternating action is initiated by a control switch, which is common with one side of the control voltage. The output contacts will change states each time the control switch is opened, thus alternating the two loads. The LED indicators show the position of the output relay.

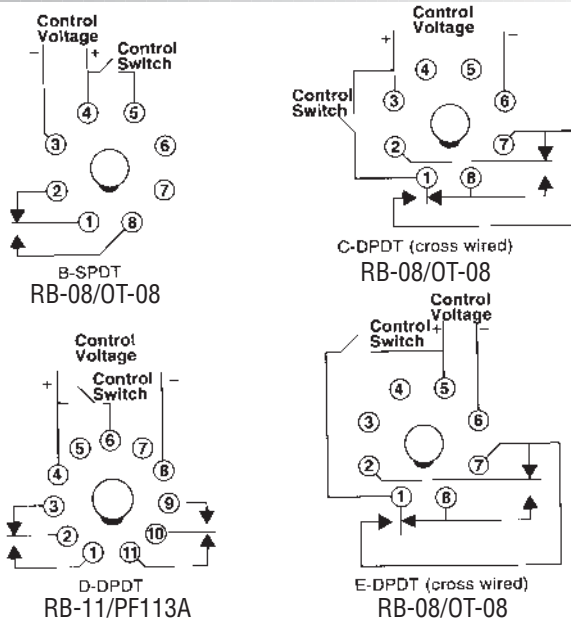
The ARA series is the standard Duplexor providing automatic alternating sequence. The ARB has the automatic sequencing feature plus the option of locking it into one sequence. A three position switch permits the field selection of normal duplexing action, locking in the A-B sequence, or B-A sequence.

SPECIFICATIONS

CONTROL VOLTAGE	24, 120 VAC/DC, 208, 240, 480 VAC, 50/60Hz, 48 VDC, $\pm 10\%$	
CONTROL SWITCH CURRENT	1 mA	
POWER REQUIRED	3 VA (Approximately)	
DUTY CYCLE	Continuous	
LIFE EXPECTANCY	Mechanical	10,000,000 Operations (Minimum)
	Electrical	100,000 Operations @ Rated Load
INDICATORS	LED Shows Output Position	
TEMPERATURES RATING	Operate	-4° to 131°F (-20° to +55°C)
	Storage	-40° to 185°F (-40° to +85°C)
CONTACT RATING	10 Amps @ 240 VAC, Resistive 1/8 hp @ 120 VAC, 1/4 hp @ 240 VAC Inductive, 360 VA @ 240 VAC, Inductive	
ENCLOSURE	"A" Lexan® Dust Cover	
TERMINATIONS	Industrial Plug-in	
WEIGHT	4.5 oz.	

NOTE: For Analog signal inputs, ATC offers a duplexing pump control — the ATC-Digitec 3800 Panel Meter 480 VAC is not available in the D-DPDT 11-Pin configuration

WIRING



MODEL NUMBER >>>>>>	AR				A
Type of Alternating Relay					
Standard Duplexor	A				
Special Function Duplexor	B				
Control Voltage					
24 VAC/DC	24				
48 VDC	48				
120 VAC/DC	120				
208 VAC	208				
240 VAC	240				
380-408 VAC (Consult Factory)	480				
Type of Voltage					
VAC or VAC/DC	A				
48 VDC only	D				
Contact Configuration					
SPDT	B				
DPDT (Cross Wired)	C				
DPDT	D				
DPDT (Cross Wired)	E				
Enclosure Style	A				

Product data sheet

Specifications



Monolithic selector switch,
Harmony XB7, plastic, black,
22mm, stay put, 3 positions, stay
put, 2NO

XB7ND33

Main

Range of Product	Harmony XB7
Product or Component Type	Selector switch
Device short name	XB7
Mounting diamete	0.9 in (22 mm)
Sale per indivisible quantity	10
Net Weight	0.057 lb(US) (0.026 kg)
IP degree of protection	IP20 IEC 60529 rear face) IP65 IEC 60529 front face)
Shape of signaling unit head	Round
Type of operator	stay put
Operator profile	Black standard handle
Operator position information	3 positions +/- 45°
Contacts type and composition	2 NO
Positive opening	Without

Complementary

CAD overall width	1.1 in (29 mm)
CAD overall height	1.1 in (29 mm)
CAD overall depth	2.7 in (68.5 mm)
Terminals description ISO n°1	(23-24)NO (13-14)NO
Device mounting	Fixing hole 0.9 in (22.5 mm) 22.3 +0.4/0 IEC 60947-1
Fixing center	>= 30 x 40 mm support panel) metal 0.04...0.2 in (1...6 mm) >= 30 x 40 mm support panel) plastic 0.08...0.2 in (2...6 mm)
Fixing mode	Fixing nut 17.7...21.2 lbf.in (2...2.4 N.m)
Contact operation	Slow-break
Mechanical durability	300000 cycles
Connections - terminals	Screw clamp terminals, <= 2 x 1.5 mm² with cable end IEC 60947-1 Screw clamp terminals, 1 x 0.34...2 x 2.5 mm² without cable end IEC 60947-1
Tightening torque	7.08...10.6 lbf.in (0.8...1.2 N.m) IEC 60947-1

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Shape of screw head	Cross JIS No 1 Cross Philips no 1 Cross pozidriv No 1 Slotted flat Ø 4 mm Slotted flat Ø 5.5 mm
Short-circuit protection	4 A cartridge fuse gG IEC 60947-5-1
[Ui] rated insulation voltage	250 V 3)IEC 60947-1
[Uimp] rated impulse withstand voltage	4 kV IEC 60947-1
[Ie] rated operational current	0.1 A 250 V, DC-13, R300 IEC 60947-5-1 0.22 A 125 V, DC-13, R300 IEC 60947-5-1 0.3 A 240 V, AC-14, D300 IEC 60947-5-1 0.6 A 120 V, AC-14, D300 IEC 60947-5-1
Electrical durability	1000000 cycles, DC-13, 0.3 A 24 V 216000 cyc/mn 0.5 IEC 60947-5-1 appendix C 1000000 cycles, AC-15, 0.03 A 230 V 216000 cyc/mn 0.5 IEC 60947-5-1 appendix C 1000000 cycles, AC-15, 0.09 A 240 V 108000 cyc/mn 0.5 IEC 60947-5-1 appendix C
Electrical reliability	$\Lambda < 10^{\exp(-6)}$ 17 V 5 mA IEC 60947-5-4

Environment

protective treatment	TH
Ambient Air Temperature for Storage	-40...158 °F (-40...70 °C)
Ambient Air Temperature for Operation	-13...158 °F (-25...70 °C)
Electrical shock protection class	Class II IEC 61140
NEMA degree of protection	NEMA 12 UL 50 E NEMA 3 UL 50 E
Standards	IEC 60947-1 UL 508 IEC 60947-5-1 CSA C22.2 No 14 JIS C8201-5-1 JIS C8201-1
Vibration resistance	5 gn 2...500 Hz)IEC 60068-2-6
Shock resistance	50 gn 11 ms) half sine wave acceleration IEC 60068-2-27 30 gn 18 ms) half sine wave acceleration IEC 60068-2-27

Ordering and shipping details

Category	US10CS222464
Discount Schedule	0CS2
GTIN	3606480470264
Returnability	Yes
Country of origin	ID

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.8 in (7 cm)
Package 1 Width	1.3 in (3.2 cm)
Package 1 Length	1.3 in (3.2 cm)
Package 1 Weight	11.08 oz (314 g)

Product data sheet

Specifications



Monolithic pilot light, Harmony XB7, plastic, red, 22mm, integral LED, 110...120V AC

XB7EV04GP

Main

Range of Product	Harmony XB7
Product or Component Type	Pilot light
Device short name	XB7
Mounting diamete	0.9 in (22 mm)
Sale per indivisible quantity	10
Shape of signaling unit head	Round
Cap/operator or lens colour	Red
Light source	LED
Bulb base	Integral LED
[Us] Rated Supply Voltage	120 V AC 50/60 Hz
device presentation	Monolithic product

Complementary

Height	1.1 in (29 mm)
Width	1.1 in (29 mm)
Depth	2.1 in (54 mm)
Terminals description ISO n°1	(X1-X2)PL
Net Weight	0.04 lb(US) (0.02 kg)
Device mounting	Fixing hole 0.9 in (22.5 mm) 22.3 +0.4/0 IEC 60947-5-1
Fixing center	>= 30 x 40 mm support panel) metal 0.04...0.2 in (1...6 mm) >= 30 x 40 mm support panel) plastic 0.08...0.2 in (2...6 mm)
Fixing mode	Fixing nut beneath head 17.7...21.2 lbf.in (2...2.4 N.m)
Connections - terminals	Screw clamp terminals, <= 2 x 1.5 mm² with cable end IEC 60947-1 Screw clamp terminals, 1 x 0.22...2 x 2.5 mm² without cable end IEC 60947-1
Tightening torque	7.08...10.6 lbf.in (0.8...1.2 N.m) IEC 60947-1
Shape of screw head	Cross JIS No 1 Cross Philips no 1 Cross pozidriv No 1 Slotted flat Ø 4 mm Slotted flat Ø 5.5 mm
[Ui] rated insulation voltage	250 V 3)IEC 60947-1
[Uimp] rated impulse withstand voltage	6 kV IEC 60947-1

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Signalling type	Steady
Supply voltage limits	100...132 V AC
Current Consumption	18...21 mA
Service life	70000 h at rated voltage and 25 °C

Environment

protective treatment	TH
Ambient Air Temperature for Storage	-40...158 °F (-40...70 °C)
Ambient Air Temperature for Operation	-13...158 °F (-25...70 °C)
Overvoltage category	Class II IEC 60536
IP degree of protection	IP20 IEC 60529 rear face) IP65 IEC 60529 front face)
NEMA degree of protection	NEMA 4 UL 50 E NEMA 12 UL 50 E
Standards	IEC 60947-5-1 UL 508 IEC 60947-1 CSA C22.2 No 14 JIS C8201-5-1 JIS C8201-1
Vibration resistance	5 gn 2...500 Hz)IEC 60068-2-6
Shock resistance	50 gn 11 ms) half sine wave acceleration IEC 60068-2-27
Electromagnetic compatibility	Disturbing field emission class B conforming to IEC 55011

Product data sheet

Specifications



Monolithic pilot light, Harmony XB7, plastic, green, 22mm, integral LED, 110...120V AC

XB7EV03GP

Main

Range of Product	Harmony XB7
Product or Component Type	Pilot light
Device short name	XB7
Mounting diamete	0.9 in (22 mm)
Sale per indivisible quantity	10
Shape of signaling unit head	Round
Cap/operator or lens colour	Green
Light source	LED
Bulb base	Integral LED
[Us] Rated Supply Voltage	120 V AC 50/60 Hz
device presentation	Monolithic product

Complementary

Height	1.1 in (29 mm)
Width	1.1 in (29 mm)
Depth	2.1 in (54 mm)
Terminals description ISO n°1	(X1-X2)PL
Net Weight	0.04 lb(US) (0.02 kg)
Device mounting	Fixing hole 0.9 in (22.5 mm) 22.3 +0.4/0 IEC 60947-5-1
Fixing center	>= 30 x 40 mm support panel) metal 0.04...0.2 in (1...6 mm) >= 30 x 40 mm support panel) plastic 0.08...0.2 in (2...6 mm)
Fixing mode	Fixing nut beneath head 17.7...21.2 lbf.in (2...2.4 N.m)
Connections - terminals	Screw clamp terminals, <= 2 x 1.5 mm² with cable end IEC 60947-1 Screw clamp terminals, 1 x 0.22...2 x 2.5 mm² without cable end IEC 60947-1
Tightening torque	7.08...10.6 lbf.in (0.8...1.2 N.m) IEC 60947-1
Shape of screw head	Cross JIS No 1 Cross Philips no 1 Cross pozidriv No 1 Slotted flat Ø 4 mm Slotted flat Ø 5.5 mm
[Ui] rated insulation voltage	250 V 3)IEC 60947-1
[Uimp] rated impulse withstand voltage	6 kV IEC 60947-1

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Signalling type	Steady
Supply voltage limits	100...132 V AC
Current Consumption	18...21 mA
Service life	70000 h at rated voltage and 25 °C

Environment

protective treatment	TH
Ambient Air Temperature for Storage	-40...158 °F (-40...70 °C)
Ambient Air Temperature for Operation	-13...158 °F (-25...70 °C)
Overvoltage category	Class II IEC 60536
IP degree of protection	IP20 IEC 60529 rear face) IP65 IEC 60529 front face)
NEMA degree of protection	NEMA 4 UL 50 E NEMA 12 UL 50 E
Standards	UL 508 IEC 60947-5-1 IEC 60947-1 JIS C8201-5-1 CSA C22.2 No 14 JIS C8201-1
Vibration resistance	5 gn 2...500 Hz)IEC 60068-2-6
Shock resistance	50 gn 11 ms) half sine wave acceleration IEC 60068-2-27
Electromagnetic compatibility	Disturbing field emission class B conforming to IEC 55011

[ENM Counting Instruments](#) > [Electrical Counters](#) > [E6B Electrical Counter - Two-Hole Panel Mount](#) > [T14 DC Powered Hour Meter II.](#) > [T14 DC Powered Hour Meter I.](#) > [T18 AC Powered Hour Meter III.](#) > [T18 AC Powered Hour Meter II.](#) > [T32 AC/DC DIN Rail Mount Hour Meter](#) > [T40 Quartz DC Hour Meter](#) > [T40 3-Hole Quartz DC Hour Meter](#) > [T40 Square Mount Quartz DC Hour Meter II.](#) > [T41 Quartz DC Hour Meter II.](#) > [T41 Quartz DC Hour Meter I.](#) > [T50 Quartz AC Hour Meter I.](#) > [T50 Quartz AC Hour Meter II.](#) > Item # T50B2

Item # T50B2 T50 Quartz AC Hour Meter II.



T50 Quartz AC Hour Meter II.
T50 Quartz AC Hour Meter

Specifications

Series	T50
Display	6-Digit
Voltage	115 V AC
Reset	None
Size	1.68W x 1.68H x 1.26D Inch
Face Dia - Flange	2.80 Inch
Face Dia - Cutout	2 Inch
Weight	2 oz.
Mounting Style	3-Hole Panel
Power	Less than 0.4 W



USEMCO Incorporated
USEMCO
UNIVERSAL SANITARY EQUIPMENT MANUFACTURING COMPANY

Warranty Certificate

All control panels manufactured by USEMCO, Inc. are guaranteed to be free from defect in workmanship and material for a period of up to one year from the date the control panel is placed into operation by USEMCO's authorized personnel, but in no event is the control panel guaranteed for longer than 18 months from date of invoice.

Any part claimed defective will be either repaired or replaced, our option, when returned to our factory transportation charges paid. This guarantee only covers defects which have developed in the service for which the controls have designed.

The liability of the company shall not in any case exceed the cost of correcting defects in USEMCO's controls or parts, upon the above mentioned one year, all such liability shall terminate.

USEMCO shall not in any event be liable for indirect or consequential damages.

USEMCO, Inc.
Tomah, WI



USEMCO®

Universal Sanitary Equipment Manufacturing Company



WWW.USEMCO.COM

USEMCO INCORPORATED

550, 1602 REZIN RD, TOMAH, WI 54660

PHONE: (608) 372-5911

FAX: (608) 372-5016

Customer

Customer number

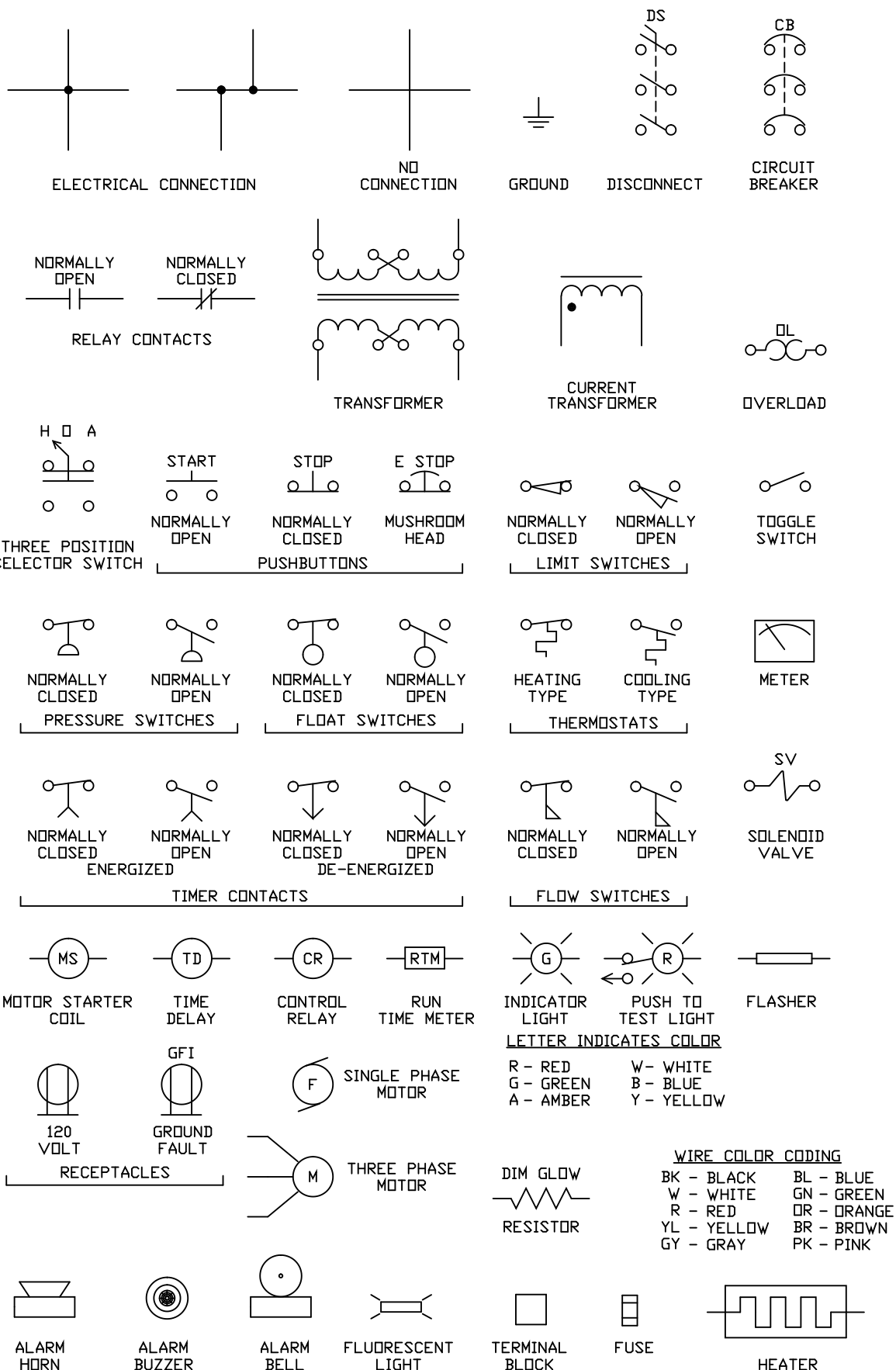
Project Description

DUPLEX 1-PHASE CONVERSION
CONTROL PANEL 10A TO 25A

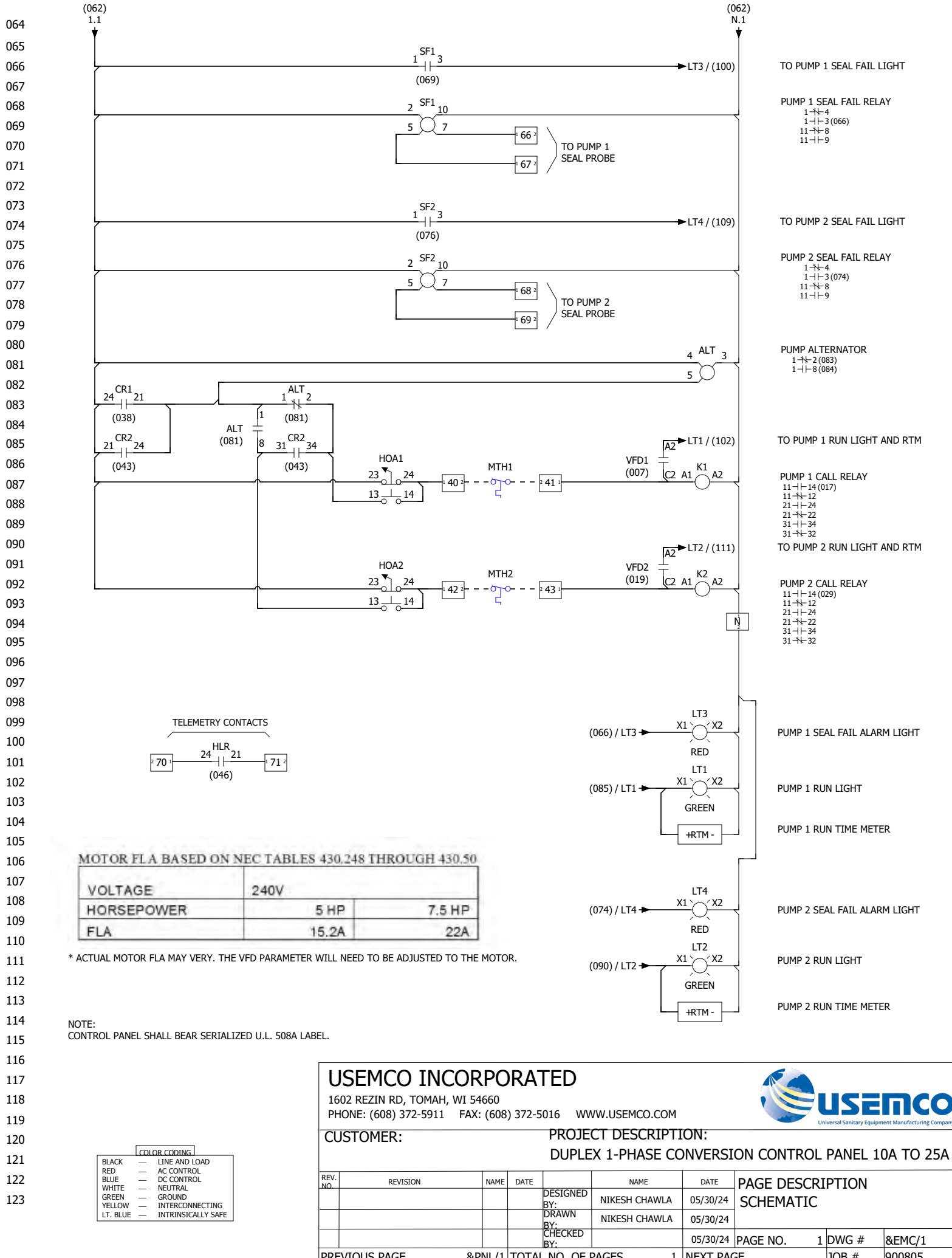
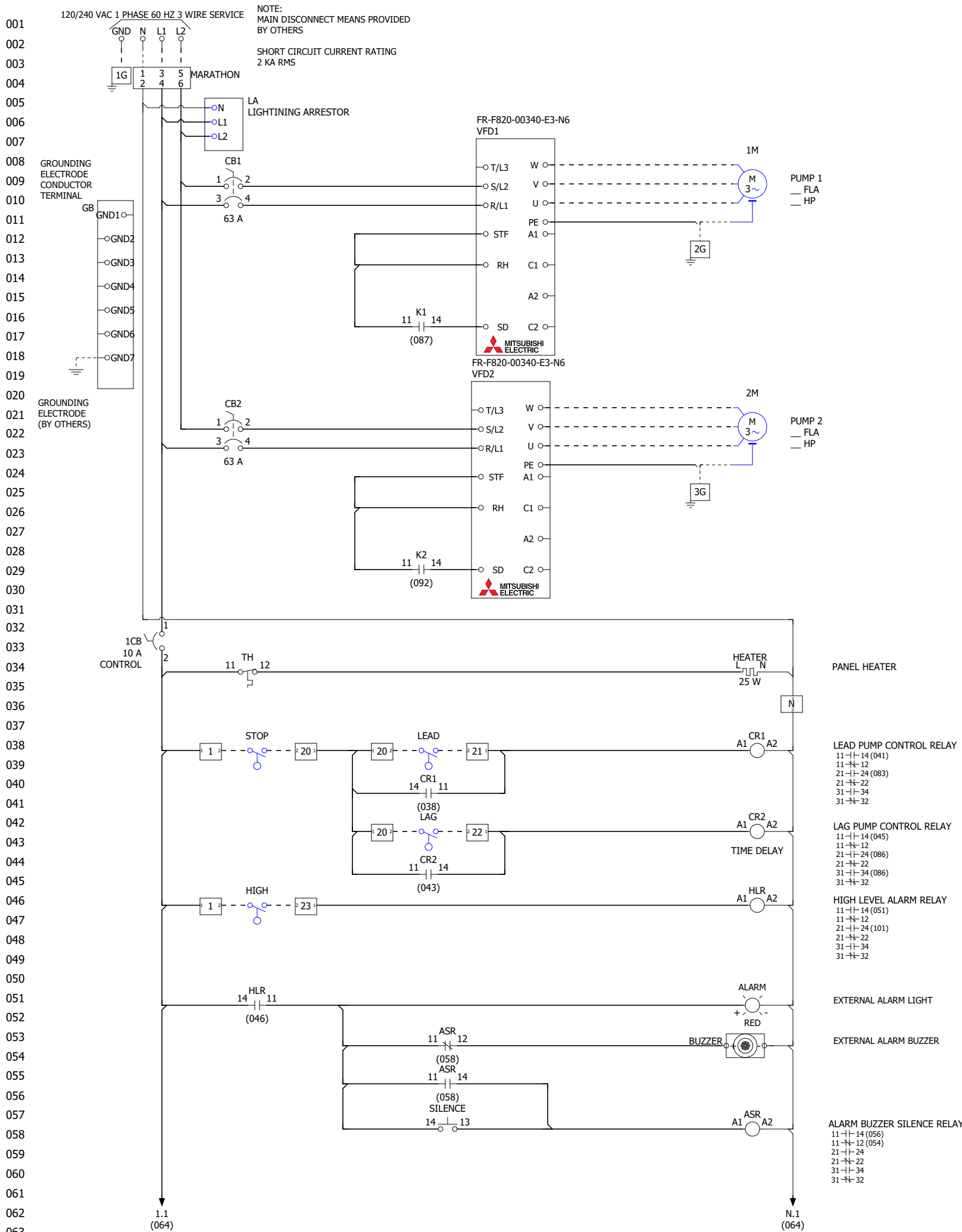
Job number

900805

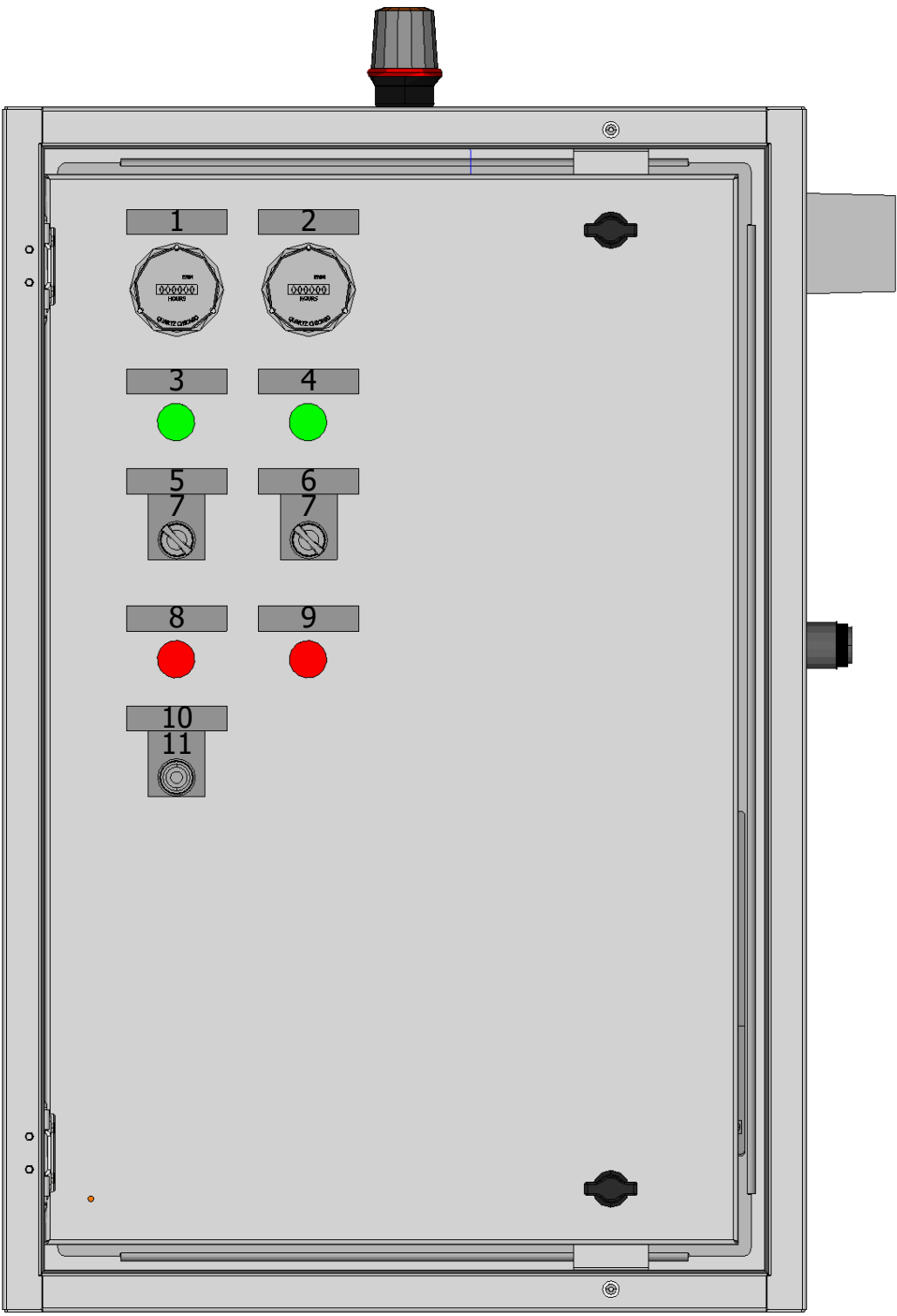
ELECTRIC CONTROL SYMBOLS



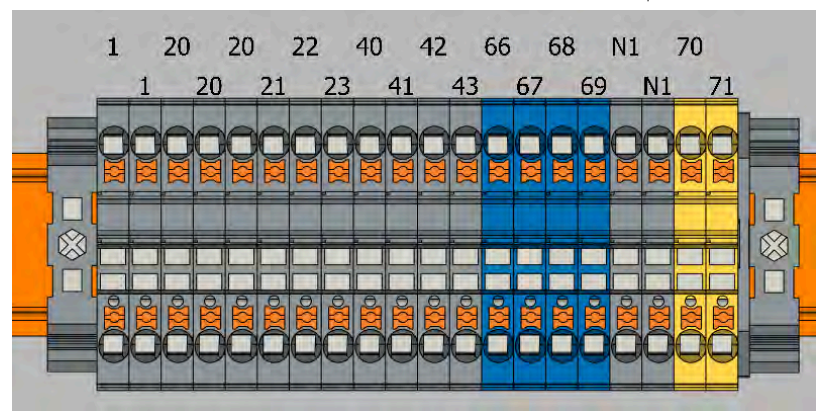
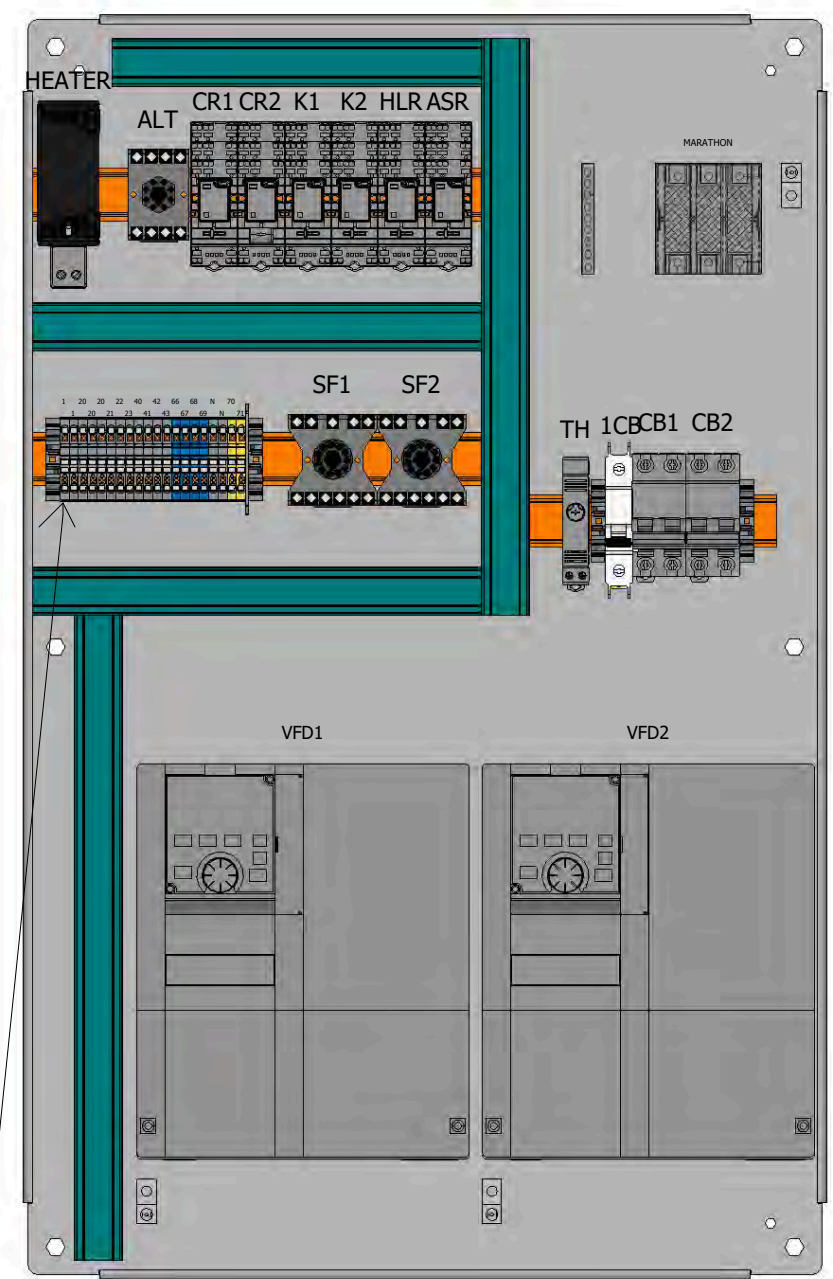
USEMCO INCORPORATED
P.O. BOX 550 (608) 372-5911 TOMAH, WI 54660
SYMBOLS



NEMA 4X STAINLESS STEEL ENCLOSURE
36"H x 24"W x 10"DP
OUTER DOOR NOT SHOWN



- NAMEPLATE LEGEND
- 1. PUMP 1 RTM
 - 2. PUMP 2 RTM
 - 3. PUMP 1 RUN
 - 4. PUMP 2 RUN
 - 5. PUMP 1
 - 6. PUMP 2
 - 7. HAND OFF AUTO
 - 8. SEAL 1 FAIL
 - 9. SEAL 2 FAIL
 - 10. ALARM
 - 11. SILENCE



USEMCO INCORPORATED

1602 REZIN RD, TOMAH, WI 54660
PHONE: (608) 372-5911 FAX: (608) 372-5016 WWW.USEMCO.COM



Universal Sanitary Equipment Manufacturing Company

CUSTOMER:

PROJECT DESCRIPTION:
DUPLEX 1-PHASE CONVERSION
CONTROL PANEL 10A TO 25A

REV. NO.	REVISION	NAME	DATE	DESIGNED BY:	NAME	DATE	PAGE DESCRIPTION			
				DESIGNED BY:	NIKESH CHAWLA	05/30/24	PANEL LAYOUT			
				DRAWN BY:	NIKESH CHAWLA	06/04/24				
				CHECKED BY:		06/04/24				
PREVIOUS PAGE		8/3		TOTAL NO. OF PAGES		1	NEXT PAGE	8/EMC/1	JOB NO.	900805

PAGE NO.

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DWG NO.

8PNL/1

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M 900805.V2 - 900805.V2 - DUPLEX 1-PH CONVERSION CONTROL PANEL 25A

Detail

Quantity

--10 ELEC-ASSY - ELECTRICAL- ASSEMBLY
CUT OUT PANEL

----322239 BUZZER AC-DC #MW-09-201-QG	1.00	EA
----322279.0 LIGHT ALARM AC-DC #R15-MB 120V, 15W, RED	1.00	EA
----420361.0210E VFD 10HP 240V 34A MITSUBISHI #FR-F820-00340-E3-N6 F800 SERIES VARIABLE TORQUE ETHERNET COMMUNICATIONS 10 HP (SLD) 240VAC FRAME SIZE "D" NEMA 1 SLD INPUT RATING 45.1A SLD OUTPUT RATING 34A SLD WATTS 355 12.76H 8.66W 6.69D	2.00	EA
----421394.10 BREAKER SQD 1P 10A M9F42110 CURVE C	1.00	EA
----421398.63 BREAKER SQD 2P 63A M9F42263 CURVE C	2.00	EA
----421494.07 BAR GROUND KIT SQD PK7GTA	1.00	EA
----422305.00 RELAY PROBE MACROMATIC #SFP120B100 SINGLE CHANNEL 11 PIN - DPDT 4.7K - 100K OHMS	2.00	EA
----422339.305 RELAY 10A FINDER 55 SERIES 3P 120 VAC PART # 55.33.8.120.0050 PLUG-IN RELAY, 3PDT, 10A 120V AC COIL LOCKABLE TEST BUTTON & LED	6.00	EA
----422345.6 RELAY ALT 10A DIV. ARB-120-ABA	1.00	EA
----423384.2 ARRESTER SURGE 1PH SQD #SDSA1175	1.00	EA
----423413 BLOCK TERMINAL PHOENIX GRAY #3211757	14.00	EA
----423413.1 BLOCK TERMINAL PHOENIX BLUE #3211760	4.00	EA
----423413.3 BLOCK TERMINAL PHOENIX YELLOW #3211762	2.00	EA
----423413.5 BLOCK TERMINAL PHOENIX END COVER #3030420	1.00	EA
----423413.6 BLOCK TERMINAL PHOENIX END STOP #0800886	4.00	EA
----423413.61 JUMPER 2 POLE PHOENIX #3030336	2.00	EA
----423413.62 JUMPER 3 POLE PHOENIX #3030242	1.00	EA
----423441.0 BLOCK 3PL LINE #2/0 LOAD #4 MARATHON #1423570 1 LINE 4 LOAD	1.00	EA
----423480.2 SOCKET RD 8 PIN IDEC SR2P-06	1.00	EA
----423481.2 SOCKET RD 11 PIN IDEC SR3P-06	2.00	EA
----423486.2 SOCKET 94 SERIES 3P FINDER 94.P3SPA	6.00	EA
----425123 TIMER MODULE FINDER 86.30.8.120.0000 .05 SEC TO 100 HR ADJUSTABLE	1.00	EA

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M 900805.V2 - 900805.V2 - DUPLEX 1-PH CONVERSION CONTROL PANEL 25A

Detail	Quantity	
----425200.0 RTM 120VAC 60HZ ENM #T50B2	2.00	EA
----428905.2 WIRE DUCT BASE 1" X 2" PANDUIT F1X2 LG6	2.00	EA
----428905.25 WIRE DUCT BASE 1" X 3" PANDUIT F1X3 LG6	4.00	EA
----428908.2 WIRE DUCT COVER 1" PANDUIT C1LG6	4.00	EA
----429094.02 DECAL USEMCO 2 7/16" X 7 1/8" .020 MILL ALUMINUM BLK PRINT W/468 ADHESIVE	1.00	EA
----429094.04 DECAL USEMCO 2" X 3" MADE IN USA	1.00	EA
----429096 LABEL U.L. INDUSTRIAL PANEL UL-508A FILE NUMBER E76571 PART NUMBER S1810	1.00	EA
----429105 DECAL USEMCO LIMITED WARRANTY 1 YEAR 3" X 4.75" WHITE BACKGROUND BLACK LETTERS Any part claimed defective will be either repaired or replaced, our option, when returned to our factory transportation charges paid. This guarantee only covers defect which have developed in the service for which the controls have been designed. The liability of the company shall not in any case exceed the cost of correcting defects in USEMCO'S controls or parts, upon the above mentioned one year, all such liability shall terminate. USEMCO shall not in any event be liable for indirect or consequential damages. USEMCO, Inc. Tomah, WI 54660 WORDING AS FOLLOWS: All control panels manufactured by USEMCO, Inc. are guaranteed to be free from defect in workmanship and material for a period of one (1) year from date of shipment.	1.00	EA
----429118.43 LABELS "WARNING" BRADY B30-25-595-ANSIWA 4" X 6" DIECUT ORDER 175 PER ROLL ORANGE "WARNING" HEADER ON WHITE LABEL	1.00	EA
----460480 RING SEAL T&B 5262 1/2" OR EQUAL	1.00	EA
----462848.73 ENCL N4X SAGINAW SCE-36EL2412SSLPPL TYPE 304 STAINLESS STEEL WITH 3-POINT LATCH AND KEYLOCKING/PADLOCKING HANDLE	1.00	EA
----463180.07 ENCL DEAD FRONT SAGINAW SCE-DF36EL24LP	1.00	EA
----463215.4 ENCL BP SAGINAW SCE-36P24	1.00	EA
----463371.2 ENCL PADLOCK WING KNOB LATCH #SCE-PLWKB	1.00	EA
----463442.74 THERMOSTAT FINDER NORMALLY CLOSED 7T.81.0.000.2403 Thermostat, SPST-NC 10A, 0°C (32°F) to +60°C (140°F)	1.00	EA
----463502.100 ENCL MTG KIT SAGINAW SCE-ELMFK4SS6-OS INCLUDES (4) 304 SS MUNTING FEET AND STAINLESS STEEL FASTENERS	1.00	EA
----469004 LUG ALUM SOLDERLESS MAX. #2 ILSCO TA-2, BLACKBURN ADR-2, BURNDY KA2U OR EQUAL	3.00	EA

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M 900805.V2 - 900805.V2 - DUPLEX 1-PH CONVERSION CONTROL PANEL 25A

Detail	Quantity	
----469068.7 HEATER TOUCH SAFE FINDER 25W 7H.51.0.230.0025 Panel Heater 110..230V AC/DC	1.00	EA
----470501.21 SWITCH PB MOMENTARY BLACK SQD XB7NA25 1NO 1NC 1NO 1NC BLACK PLASTIC	1.00	EA
----470501.22 SWITCH SEL 3 POS SQD #XB7ND33 2 NO CONTACT	2.00	EA
----480148.10 LIGHT COMPACT SQD GREEN LED XB7EV03GP 110V - 130VAC	2.00	EA
----480148.11 LIGHT COMPACT SQD RED LED XB7EV04GP 110V - 130VAC	2.00	EA
--30 ELEC-WIRE - ELECTRICAL- PANEL WIRING WIRE PANEL		
--40 ELEC-TEST - ELECTRICAL- PANEL TESTING TEST PANEL		



Your Enclosure Source®

Saginaw Control and Engineering
95 Midland Road Saginaw, MI 48638-5770
(800) 234-6871 - Fax: (989) 799-4524
SCE@SaginawControl.com

SCE-36EL2410SSLP



Product Specifications:

Part Number: SCE-36EL2410SSLP
Description: S.S. EL Enclosure
Height: 36.00"
Width: 24.00"
Depth: 10.00"

Construction

- * 0.075 In. stainless steel Type 304.
- * Seams continuously welded and ground smooth.
- * Flange trough collar around all sides of door opening.
- * Pour in place oil & water resistant gasket
- * Collar studs 3/8-16 provided for mounting optional panels.
- * Stainless steel concealed hinges.
- * Removable and interchangeable doors.
- * Black quarter turn latches.
- * Latches are opened or closed with a screwdriver (optional tamper-resistant inserts are available).
- * Mounting holes in back of enclosure.
- * Mounting hardware, sealing washer and hole plug included.
- * Removable print pocket furnished if height and width of enclosure is greater than 12 inches.
- * Ground studs on door and body.

Application

Designed to house electrical and electronic controls, instruments and components in areas which may be regularly hosed down or are in very wet conditions. Provides protection from dust, dirt, oil, and water. For outdoor application a drip shield and drain vent is recommended.

For details about the design, performance expectations, applications and design suggestions - See Design Considerations
www.saginawcontrol.com/instman/considerations.pdf

Options

Optional mounting feet available. Door hardware available.

Finish

#4 brushed finish on all exterior surfaces. Optional sub-panels are powder coated white.

Industry Standards - (IS6)

- * NEMA Type 3R, 4, 4X, 12 and Type 13
- * UL Listed Type 3R, 4, 4X and 12
- * CSA Type 4, 4X and 12
- * IEC 60529
- * IP 66

Notes

Special Instructions apply for IS3, IS4 and IS6 to maintain the environmental rating of Type 3R for these parts. Instructions are located on the enclosure door. Drip shield is required on IS3, drip shield is recommended on IS4 and IS6. Drain holes are required on all.

Optional Accessories

SCE-36P24 Subpanel, Bent
SCE-36P24GALV Subpanel, Bent Galvanized
SCE-BVK Breather Vent
SCE-DF36EL24LP Panel, Dead Front (Wall Mount)
SCE-DS24SS Shield, S.S. Drip
SCE-ELFM24WSS S.S. EL Flush Mount Frame
SCE-ELFM36HSS S.S. EL Flush Mount Frame
SCE-ELMFK4 Foot Kit, EL Mounting (4pc.)
SCE-ELSP3 KIT, Swing-Out Panel (20 High & Up)
SCE-RD36EL24SS Door, Replacement

Installation Information

- * Mounting Foot Kit for Enviroline Enclosures
- * EL Flush Mount Frame
- * Drip Shield Kit Assembly
- * Dead Front Wall Mount Installation Instructions
- * Swing Panel Assembly for Enviroline Enclosures
- * Dead Front Wall Mount < 20 In Height Installation Instructions
- * Swing Panel ELSP3 for Encl. Height > 16
- * Swing Panel ELSP for Encl. Height <= 16
- * Sealing Washer Specifications
- * Enviroline Series Single Door Enclosure

Product data sheet

Characteristics

SDSA1175T

Surge Protect - 36kA - 120VAC - 1P3W - 25 kA - T1



Main

Product or component type	Surge protection device
---------------------------	-------------------------

Complementary

Surge current	36 KA
[Ue] rated operational voltage	120 V AC
Phase	1 phase
Wiring configuration	3-wire
Connections - terminals	Wire
[Uc] maximum continuous operating voltage	150 V
Nominal discharge current	10 KA
Short-circuit protection	25 KA
Local signalling	Status LED
Height	2.25 In (57.15 mm)
Width	2.25 In (57.15 mm)
Depth	49.15 Mm (1.935 in)
Cable length	0.61 M (2 ft)

Environment

NEMA degree of protection	NEMA 1
Enclosure material	Black plastic
Standards	CSA C22.2 No 8 UL 1449:ed. 4

Product data sheet

Specifications



Miniature circuit breaker (MCB),
Multi9 C60BP, 2P, 63A, C curve,
10kA (UL489), 10kA (IEC/EN
60947-2)

M9F42263

Main

Range	Multi9
Product name	Multi9 C60
Product or Component Type	Miniature circuit-breaker
Device short name	C60BP
Device Application	Distribution
poles description	2P
Number of protected poles	2
Line Rated Current	63 A 77.0000000000 °F (25 °C) EN/IEC 60947-2
Network type	AC
Trip unit technology	Thermal-magnetic
Curve code	C
Breaking capacity	6 kA Icu 440 V AC EN/IEC 60947-2 10 kA Icu 415 V AC EN/IEC 60947-2 20 kA Icu 240 V AC EN/IEC 60947-2 6 kA Icu 440 V AC GB 14048.2 10 kA Icu 415 V AC GB 14048.2 20 kA Icu 240 V AC GB 14048.2 10 kA AIR 240 V AC UL 489 10 kA AIR 240 V AC CSA C22.2 No 5
Suitability for isolation	Yes EN/IEC 60947-2
Standards	EN/IEC 60947-2 GB 14048.2 UL 489 CSA C22.2 No 5
Product certifications	IEC CCC CSA UL

Complementary

[Ue] rated operational voltage	240 V AC 50/60 Hz 415 V AC 50/60 Hz 440 V AC 50/60 Hz
Magnetic tripping limit	8.5 x In +/- 20 % AC

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

[Ics] rated service breaking capacity	4.5 kA 75 % EN/IEC 60947-2 - 440 V AC 7.5 kA 75 % EN/IEC 60947-2 - 415 V AC 15 kA 75 % EN/IEC 60947-2 - 240 V AC 4.5 kA 75 % GB 14048.2 - 440 V AC 7.5 kA 75 % GB 14048.2 - 415 V AC 15 kA 75 % GB 14048.2 - 240 V AC
[Ui] rated insulation voltage	500 V AC EN/IEC 60947-2
[Uimp] rated impulse withstand voltage	6 kVEN/IEC 60947-2
Contact position indicator	Yes
Control Type	Toggle
local signalling	ON/OFF indication
Mounting Mode	Clip-on
Mounting Support	DIN rail
9 mm pitches	4
Height	4.06 in (103 mm)
Width	1.4 in (36 mm)
Depth	2.8 in (72 mm)
color	Gray
Mechanical durability	20000 cycles
Electrical durability	10000 cycles
Provision for padlocking	Padlockable
Connections - terminals	Tunnel type terminal top or bottom) 0.002...0.05 in² (1...35 mm²) AWG 18...AWG 2) - rigid Tunnel type terminal top or bottom) 0.002...0.04 in² (1...25 mm²) AWG 18...AWG 3) - flexible with ferrule Tunnel type terminal top or bottom) 0.002...0.04 in² (1...25 mm²) AWG 18...AWG 3) - flexible
Wire stripping length	0.6 in (14 mm) for top or bottom connection
Tightening torque	31.0 lbf.in (3.5 N.m) top or bottom
Earth-leakage protection	Without

Environment

IP degree of protection	IP20 conforming to IEC 60529 IP40 (modular enclosure) conforming to IEC 60529
Pollution degree	3 EN/IEC 60947-2
Tropicalisation	2 IEC 60068-1
Relative humidity	95 % 131.0000000000 °F (55 °C)
Operating altitude	0...6561.68 ft (0...2000 m)
Ambient air temperature for operation	-22.0000000000...158.0000000000 °F (-30...70 °C)
Ambient Air Temperature for Storage	-40.0000000000...176.0000000000 °F (-40...80 °C)

Ordering and shipping details

Category	US10DE200949
Discount Schedule	0DE2
GTIN	3606481169693
Returnability	Yes

Country of origin	US
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Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.953 in (7.500 cm)
Package 1 Width	1.417 in (3.600 cm)
Package 1 Length	4.055 in (10.300 cm)
Package 1 Weight	9.418 oz (267.000 g)
Unit Type of Package 2	BB1
Number of Units in Package 2	6
Package 2 Height	3.228 in (8.200 cm)
Package 2 Width	4.331 in (11.000 cm)
Package 2 Length	8.661 in (22.000 cm)
Package 2 Weight	3.644 lb(US) (1.653 kg)
Unit Type of Package 3	S03
Number of Units in Package 3	54
Package 3 Height	11.811 in (30.000 cm)
Package 3 Width	11.811 in (30.000 cm)
Package 3 Length	15.748 in (40.000 cm)
Package 3 Weight	33.885 lb(US) (15.370 kg)

Sustainability

Green Premium™ label is Schneider Electric’s commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO₂ products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

[Learn more about Green Premium >](#)

[Guide to assess a product’s sustainability >](#)



Transparency RoHS/REACH

Well-being performance

 Mercury Free	
 Rohs Exemption Information	Yes
 Halogen Free Product	

Certifications & Standards

Reach Regulation	REACH Declaration
Eu Rohs Directive	Compliant with Exemptions
China Rohs Regulation	China RoHS declaration Product out of China RoHS scope. Substance declaration for your information.
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.
Circularity Profile	No need of specific recycling operations



for a greener tomorrow

FR-F800

Power-saving frequency inverters

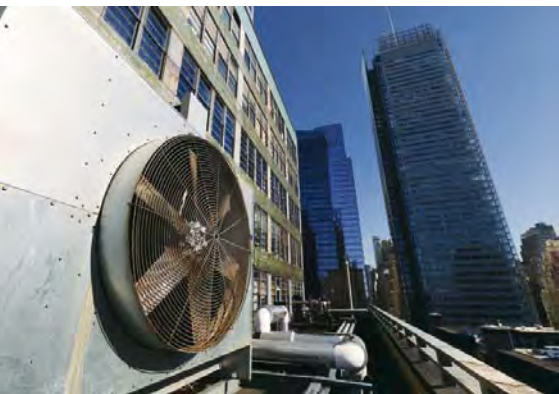


- Ideal for pump, compressor and fan applications
- High savings potential to reduce TCO
- Enhanced control due to expanded PID functionality
- High starting torque maximum energy saving

The ideal drive solution for pumps and fans



Pump applications, e.g. for building automation operate energy-saving with frequency inverters



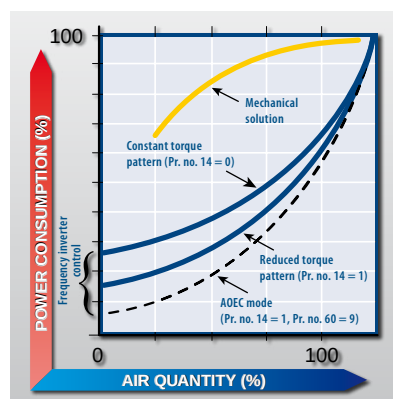
Fan applications benefit from frequency inverter use

Reduce Energy Costs

It's a fact that industrial and commercial energy users are increasingly burdened by rising energy costs. However, there is a proven way to reduce these high electricity prices by utilising frequency inverter control for pump and fan applications. Thanks to the intelligent functions, like Advanced Optimum Excitation Control or the enhanced PID

controller, these energy consumption and thus energy costs can be reduced very significantly.

The advanced optimum excitation control (AOEC) continuously adjusts the excitation current to an optimum level providing highest motor efficiency. With a small load torque, a substantial energy saving can be achieved. The newly developed AOEC, provides a large starting torque while maintaining the motor efficiency throughout the speed range.



Utilizing the motor capability to the full

This is done without the troublesome adjustment of parameters (acceleration/ deceleration time, torque boost, etc.).

Powerful features and intelligent functions

Detection of mechanical faults

With the load characteristics measurement function, 5 speed-torque values of the load can be detected and stored automatically. By comparing the present speed/load status with the stores speed/load characteristics, out-of-range warnings can be accurately measured and quickly acted upon, meaning unnecessary alarms/line stops can be avoided.

Our advanced algorithm means mechanical faults such as pump blockage/ dirty impeller or broken belt can be accurately detected.

Autotuning of IM and PM motors

To ensure that the motor and drive package are perfectly matched to reach highest performance, the F800 features a variety of autotuning methods/algorithms.

Cleaning of fans and pumps

Foreign matter on the impellers of fans or pumps can be removed by repeating forward/reverse rotation and stopping of the motor. This is avoiding expensive removal of the system.

This function can be also automatically started when the result of load characteristics measurement is out of range (overload).

Smooth Restart

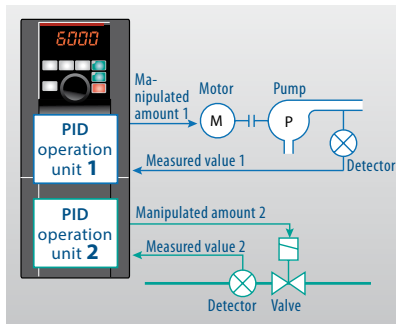
After an instantaneous power failure, the operation is restartable from the coasting motor speed automatically. With the advanced flying start function, the operation can be smoothly started from very low speed.

Advanced PID control functions

The inverter can perform PID control of the motor operation and control the external equipment at the same time.

During PID control the drive will activate "sleep mode" to avoid energy loss, when deviation is small and output speed is low. As soon deviation becomes bigger again the drive will start up immediately.

- One drive can control multi pumps
- Second PID controller



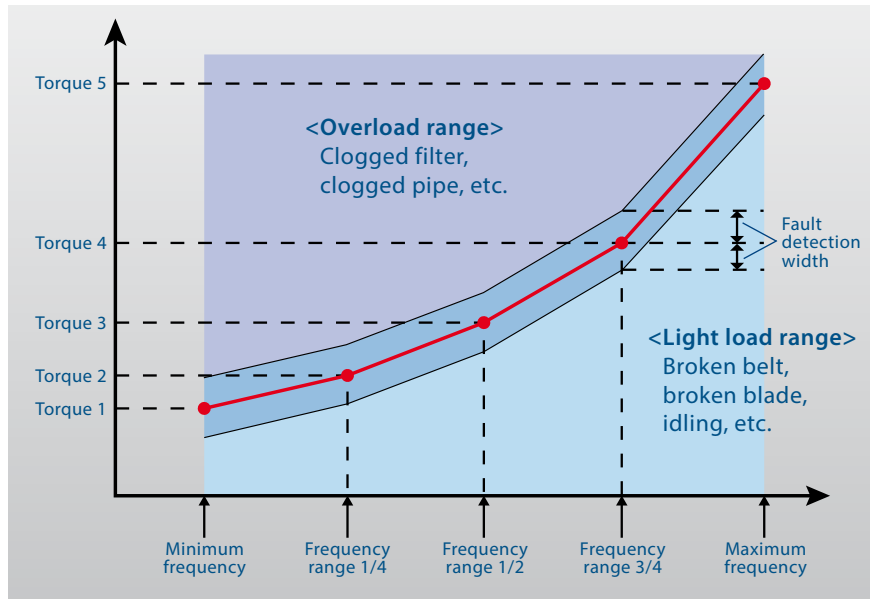
PID multiple loops (two loops)

- Direct access to PID setpoint by Display
- Pump Stir function
- PID output hold (incl. multi pump)
- PID upper/lower limit pre-warning
- Pipe burst detection / Dry run protection
- Digitally selectable PID set points
- Pipe soft fill to prevent water hammer
- PID pre-charge function
- Pre Sleep boost function
- Water Hammer avoidance at stop
- Automatic PID gain tuning

Easy handling

Easy setup

Users can comfortably setup the drives with the Setup-Software FR Configurator2, by direct connection via USB port. Easy start up of several drives can also be managed by down/ up loaded directly via USB stick.



Load characteristics measurement function

Easy operation

The operation panel with the one touch Digital Dial allows direct access to all important parameters. Select the operation panel ideal for your needs. Choose either a FR-LU08 operation panel with an LCD screen offering enhanced display functionality and a clock function, or a more economical FR-DU08 operation panel with a 5-digit, 12-segment display.



The operation panel allows the direct setting of the PID set point. The setting can be easily changed at hand.

Quick reaction to troubles

Clock setting is available in addition to the cumulative energization time. The time and date at a protective function activation are easily identified. The date and time are also saved with the trace data, which makes the fault analysis easier.

By using the real-time clock function with the optional FR-LU08 operation panel, the time is not reset even when the power supply is turned off.

Trace function

The F800 includes the ability to record or capture 8 of 72 device values.

This recording can be triggered automatically, meaning intermittent errors are easily investigated. These errors can be time stamped by the real time clock.

PLC Function

The integrated PLC function can be utilised to run e.g. stand alone compressor systems. This can be further enhanced by the Plug and Play connectable HMI.

Future proof technology

Fully backward compatible

The FR-F800 is fully backwards compatible with the FR-F700 series. Parameters can be easily copied by the programming package FR Configurator2.

Highest quality guaranteed

Mitsubishi is well known for high reliability, because our Ethos is to use only the highest quality components in our products. This means we are able to provide „fit and forget“ 3 year warranty.

F820 Selection Chart

Model Number	AMPS For Duty		Horsepower For Duty (NEC)		Frame Size	Weight (lbs)
	SLD	LD	SLD	LD		
FR-F820-00046-3-N6	4.6	4.2	1	1	A	6
FR-F820-00077-3-N6	7.7	7	2	2	B	6
FR-F820-00105-3-N6	10.5	9.6	3	3	C	9
FR-F820-00167-3-N6	16.7	15.2	5	5		9
FR-F820-00250-3-N6	25	23	7.5	7.5		9
FR-F820-00340-3-N6	34	31	10	10	D	17
FR-F820-00490-3-N6	49	45	20	15	E	17
FR-F820-00630-3-N6	63	58	20	20		20
FR-F820-00770-3-N6	77	70.5	25	25		37
FR-F820-00930-3-N6	93	85	30	30	F	37
FR-F820-01250-3-N6	125	114	40	40		37
FR-F820-01540-3-60	154	140	60	50	G	48
FR-F820-01870-3-60	187	170	60	60	H	92
FR-F820-02330-3-60	233	212	75	75		92
FR-F820-03160-3-60	316	288	125	100	K	119
FR-F820-03800-3-60	380	294	150	125	L	163
FR-F820-04750-3-60	475	432	150	150		163

Important Note: Drives in shaded area MUST be used together with FR-HEL DC Link Choke (supplied separately). Weights do not include separate DC Link chokes.

FR-HEL DC Link Chokes (supplied separately)

Drives in shaded area above MUST be used together with a DC Link Choke.

Model Number	LD	SLD
FR-F820-03160-3-60	FR-HEL-75K	FR-HEL-75K
FR-F820-03800-3-60	FR-HEL-90K	FR-HEL-110K
FR-F820-04750-3-60	FR-HEL-110K	FR-HEL-110K

Key to Duty Codes

	Overload Rating		
	60s	3s	Ambient Temp.
SLD	110%	120%	40°C
LD	120%	150%	50°C

F840 Selection Chart

Model Number	AMPS For Duty		Horsepower For Duty		Frame Size	Weight (lbs) *
	SLD	LD	SLD	LD		
FR-F840-00023-3-N6	2.3	2.1	1	1	C	8
FR-F840-00038-3-N6	3.8	3	2	2		8
FR-F840-00052-3-N6	5.2	4.8	3	3		8
FR-F840-00083-3-N6	8.3	7.6	5	5		9
FR-F840-00126-3-N6	12.6	11.5	7.5	7.5		9
FR-F840-00170-3-N6	17	16	10	10	D	17
FR-F840-00250-3-N6	25	23	15	15		17
FR-F840-00310-3-N6	31	29	20	20	E	20
FR-F840-00380-3-N6	38	35	25	25		20
FR-F840-00470-3-N6	47	43	30	30	F	37
FR-F840-00620-3-N6	62	57	40	40		37
FR-F840-00770-3-60	77	70	60	50	G	51
FR-F840-00930-3-60	93	85	60	60	H	90
FR-F840-01160-3-60	116	106	75	75		90
FR-F840-01800-3-60	180	144	150	100		95
FR-F840-02160-3-60	216	180	150	150	J	114
FR-F840-02600-3-60	260	216	200	150		121
FR-F840-03250-3-60	325	260	250	200	L	156
FR-F840-03610-3-60	361	325	300	250		172
FR-F840-04320-3-60	432	361	350	300	M	257
FR-F840-04810-3-60	481	432	400	350		257
FR-F840-05470-3-60	547	481	450	400	N	365
FR-F840-06100-3-60	610	547	500	450		365
FR-F840-06830-3-60	683	610	550	500		365
FR-F842-07700-3-60 + FR-CC2-H355K-60	-	683	-	550	P+R	827
FR-F842-07700-3-60 + FR-CC2-H400K-60	770	-	650	-	P+S	979
FR-F842-08660-3-60 + FR-CC2-H400K-60	-	770	-	650		979
FR-F842-08660-3-60 + FR-CC2-H450K-60	866	-	700	-		986
FR-F842-09620-3-60 + FR-CC2-H450K-60	-	866	-	700	Q+S	1162
FR-F842-09620-3-60 + FR-CC2-H500K-60	962	-	800	-		1168
FR-F842-10940-3-60 + FR-CC2-H500K-60	-	962	-	800		1168
FR-F842-10940-3-60 + FR-CC2-H560K-60	1094	-	900	-		1168
FR-F842-12120-3-60 + FR-CC2-H560K-60	-	1094	-	900		1168
FR-F842-12120-3-60 + FR-CC2-H630K-60	1212	-	1000	-		1168

*Weights of the drive and the CC2 modules are COMBINED
Important Note: Drives in shaded area MUST be used together with FR-HEL-H DC Link Choke (supplied separately). Weights do not include separate DC Link chokes.

Common specifications

Control specifications	Control method		Soft-PWM control, high carrier frequency PWM control (selectable among V/F control (Optimum excitation control, etc.), Advanced magnetic flux vector control (Advanced optimum excitation control, etc.), and PM motor control)
	Output frequency range		0.2 to 590 Hz (The upper-limit frequency is 400 Hz under Advanced magnetic flux vector control, and PM motor control.)
	Frequency setting resolution	Analog input	0.015 Hz/60 Hz (terminal 2, 4: 0 to 10 V/12 bits) 0.03 Hz/60 Hz (0 to 5 V/11 bits or 0 to 20 mA/approx. 11 bits for terminals 2 and 4, 0 to ± 10 V/12 bits for terminal 1) 0.06 Hz/60 Hz (0 to ± 5 V/11 bits for terminal 1)
		Digital input	0.01 Hz
	Frequency accuracy	Analog input	Within $\pm 0.2\%$ of the max. output frequency (25°C $\pm 10^\circ\text{C}$)
		Digital input	Within 0.01% of the set output frequency
	Voltage/frequency characteristics		Base frequency can be set from 0 to 590 Hz. Constant-torque/variable-torque pattern or adjustable 5 points V/F can be selected.
	Starting torque	Induction motor	120% 0.5 Hz (Advanced magnetic flux vector control)
		IPM motor	50%
	Torque boost		Manual torque boost
Operation specifications	Acceleration/deceleration time setting		0 to 3600 s (acceleration and deceleration can be set individually), linear or S-pattern acceleration/deceleration mode, backlash countermeasures acceleration/deceleration can be selected.
	DC injection brake (induction motor)		Operation frequency (0 to 120 Hz), operation time (0 to 10 s), operation voltage (0 to 30%) variable
	Stall prevention operation level		Activation range of stall prevention operation (SLD rating: 0 to 120%, LD rating: 0 to 150%). Whether to use the stall prevention or not can be selected. (V/F control, Advanced magnetic flux vector control)
	Frequency setting signal	Analog input	Terminals 2 and 4: 0 to 10 V, 0 to 5 V, 4 to 20 mA (0 to 20 mA) are available. Terminal 1: -10 to +10 V, -5 to 5 V are available.
		Digital input	Input using the setting dial of the operation panel or parameter unit Four-digit BCD or 16-bit binary (when used with option FR-A8AX)
	Start signal		Forward and reverse rotation or start signal automatic self-holding input (3-wire input) can be selected.
	Input signals (twelve terminals)		Low-speed operation command, Middle-speed operation command, High-speed operation command, Second function selection, Terminal 4 input selection, Jog operation selection, Output stop, Start self-holding selection, Forward rotation command, Reverse rotation command, Inverter reset The input signal can be changed using Pr.178 to Pr.189 (input terminal function selection) .
	Pulse train input		100 kpps
	Operational functions		Maximum frequency, minimum frequency, multi-speed operation, acceleration/deceleration pattern, thermal protection, DC injection brake, starting frequency, JOG operation, output stop (MRS), stall prevention, regeneration avoidance, increased magnetic excitation deceleration, DC feeding*1, frequency jump, rotation display, automatic restart after instantaneous power failure, electronic bypass sequence, remote setting, retry function, carrier frequency selection, fast-response current limit, forward/reverse rotation prevention, operation mode selection, slip compensation, speed smoothing control, traverse, auto tuning, applied motor selection, RS-485 communication, PID control, PID pre-charge function, cooling fan operation selection, stop selection (deceleration stop/coasting), power-failure deceleration stop function, PLC function, life diagnosis, maintenance timer, current average monitor, multiple rating, test run, 24 V power supply input for control circuit, safety stop function, self power management, BACnet communication, PID gain tuning, cleaning, load characteristics storage, emergency drive*1
	Output signal Open collector output (five terminals) Relay output (two terminals)		Inverter running, Up to frequency, Instantaneous power failure/undervoltage*1, Overload warning, Output frequency detection, Fault The output signal can be changed using Pr.190 to Pr.196 (output terminal function selection) . Fault codes of the inverter can be output (4 bits) from the open collector.
Indication	Pulse train output (FM type)		Max. 2.4 kHz: one terminal (output frequency) The monitored item can be changed using Pr.54 FM/CA terminal function selection .
	Current output (CA type)		Max. 20 mADC: one terminal (output current) The monitored item can be changed using Pr.54 FM/CA terminal function selection .
	Voltage output		Max. 10 VDC: one terminal (output voltage) The monitored item can be changed using Pr.158 AM terminal function selection .
	Operation panel (FR-DU08)	Operating status	Output frequency, output current, output voltage, frequency setting value The monitored item can be changed using Pr.52 Operation panel main monitor selection .
		Fault record	Fault record is displayed when a fault occurs. Past 8 fault records and the conditions immediately before the fault (output voltage/current/frequency/cumulative energization time/year/month/date/time) are saved.
	Protective/warning function	Protective function	Overcurrent trip during acceleration, Overcurrent trip during constant speed, Overcurrent trip during deceleration or stop, Regenerative overvoltage trip during acceleration, Regenerative overvoltage trip during constant speed, Regenerative overvoltage trip during deceleration or stop, Inverter overload trip (electronic thermal relay function), Motor overload trip (electronic thermal relay function), Heatsink overheat, Instantaneous power failure*1, Undervoltage*1, Input phase loss*1*2, Stall prevention stop, Loss of synchronism detection*2, Upper limit fault detection, Lower limit fault detection, Output side earth (ground) fault overcurrent, Output phase loss, External thermal relay operation*2, PTC thermistor operation*2, Option fault, Communication option fault, Parameter storage device fault, PU disconnection, Retry count excess*2, CPU fault, Operation panel power supply short circuit/RS-485 terminals power supply short circuit, 24 VDC power fault, Abnormal output current detection*2, Inrush current limit circuit fault*1, Communication fault (inverter), Analog input fault, USB communication fault, Safety circuit fault, Overspeed occurrence*2, 4 mA input fault*2, Pre-charge fault*2, PID signal fault*2, Internal circuit fault, User definition error by the PLC function
		Warning function	Fan alarm, Stall prevention (overcurrent), Stall prevention (overvoltage), Electronic thermal relay function pre-alarm, PU stop, Parameter copy, Safety stop, Maintenance timer 1 to 3*2, USB host error, Operation panel lock*2, Password locked*2, Parameter write error, Copy operation error, 24 V external power supply operation, Load fault warning, Emergency drive*1
	Surrounding air temperature		-10°C to +50°C (non-freezing) (LD ratings) -10°C to +40°C (non-freezing) (SLD rating)
	Surrounding air humidity		With circuit board coating (conforming to IEC60721-3-3 3C2/3S2): 95% RH or less (non-condensing) Without circuit board coating: 90% RH or less (non-condensing)
	Storage temperature*3		-20°C to +65°C
Environment	Atmosphere		Indoors (without corrosive gas, flammable gas, oil mist, dust and dirt, etc.)
	Altitude/vibration		Maximum 1000 m above sea level*4, 5.9 m/s ² or less*5 at 10 to 55 Hz (directions of X, Y, Z axes)

*1 Available only for the standard model.

*2 This protective function is not available in the initial status.

*3 Temperature applicable for a short time, e.g. in transit.

*4 For the installation at an altitude above 1,000 m (up to 2,500 m), derate the rated current 3% per 500 m.

*5 2.9 m/s² or less for the FR-F840-04320(185K) or higher.

M9F42110

Multi 9 - C60BP - MCB - 1P - 10 A - C Curve - 277 V - 10 kA - UL 489

Product availability : Stock - Normally stocked in distribution facility



Main

Range	Multi 9
Product name	Multi 9 C60
Product or component type	Miniature circuit-breaker
Device short name	C60BP
Device application	Distribution
Poles description	1P
Number of protected poles	1
[In] rated current	10 A at 77 °F (25 °C) conforming to EN/IEC 60947-2
Network type	AC DC
Trip unit technology	Thermal-magnetic
Curve code	C
Breaking capacity	Icu 3 kA at 415 V AC conforming to EN/IEC 60947-2 Icu 10 kA at 240 V AC conforming to EN/IEC 60947-2 Icu 20 kA at 60 V DC conforming to EN/IEC 60947-2 Icu 3 kA at 415 V AC conforming to GB 14048.2 Icu 10 kA at 240 V AC conforming to GB 14048.2 Icu 20 kA at 60 V DC conforming to GB 14048.2 AIR 10 kA at 277 V AC conforming to UL 489 AIR 14 kA at 240 V AC conforming to UL 489 AIR 14 kA at 120 V AC conforming to UL 489 AIR 10 kA at 60 V DC conforming to UL 489 AIR 10 kA at 277 V AC conforming to CSA C22.2 No 5 AIR 14 kA at 240 V AC conforming to CSA C22.2 No 5 AIR 14 kA at 120 V AC conforming to CSA C22.2 No 5 AIR 10 kA at 60 V DC conforming to CSA C22.2 No 5
Suitability for isolation	Yes conforming to EN/IEC 60947-2
Standards	UL 489 CSA C22.2 No 5 GB 14048.2 EN/IEC 60947-2

Product certifications	UL CSA CCC IEC
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Complementary

System Voltage	240 V AC 50/60 Hz 415 V AC 50/60 Hz 60 V DC
Magnetic tripping limit	8.5 x In +/- 20% AC 12 x In +/- 20% DC
[Ics] rated service breaking capacity	2.25 kA 75 % x Icu at 415 V AC conforming to EN/IEC 60947-2 7.5 kA 75 % x Icu at 240 V AC conforming to EN/IEC 60947-2 2.25 kA 75 % x Icu at 415 V AC conforming to GB 14048.2 7.5 kA 75 % x Icu at 240 V AC conforming to GB 14048.2 15 kA 75 % x Icu at 60 V DC conforming to GB 14048.2 15 kA 75 % x Icu at 60 V DC conforming to EN/IEC 60947-2
[Ui] rated insulation voltage	500 V AC conforming to EN/IEC 60947-2
[Uimp] rated impulse withstand voltage	6 kV conforming to EN/IEC 60947-2
Contact position indicator	Yes
Control type	Toggle
Local signalling	ON/OFF indication
Mounting mode	Clip-on
Mounting support	DIN rail
9 mm pitches	2
Height	4.06 in (103 mm)
Width	0.71 in (18 mm)
Depth	2.83 in (72 mm)
Colour	Grey
Mechanical durability	20000 cycles
Electrical durability	10000 cycles
Provision for padlocking	Padlockable
Connections - terminals	Tunnel type terminal, top or bottom flexible with ferrule wire(s) 0...0.02 in ² (1...16 mm ²) max (AWG 18...AWG 8) Tunnel type terminal, top or bottom rigid wire(s) 0...0.04 in ² (1...25 mm ²) max (AWG 18...AWG 8) Tunnel type terminal, top or bottom flexible wire(s) 0...0.02 in ² (1...16 mm ²) max (AWG 18...AWG 8)
Wire stripping length	0.55 in (14 mm) (top or bottom)
Tightening torque	22.12 lbf.in (2.5 N.m) (top or bottom)
Earth-leakage protection	Without

Environment

IP degree of protection	IP40 modular enclosure conforming to IEC 60529 IP20 conforming to IEC 60529
Pollution degree	3 conforming to EN/IEC 60947-2
Tropicalisation	2 conforming to IEC 60068-1
Relative humidity	95 % (131 °F (55 °C))
Operating altitude	0...6561.68 ft (0...2000 m)
Ambient air temperature for operation	-22...158 °F (-30...70 °C)
Ambient air temperature for storage	-40...176 °F (-40...80 °C)

Ordering and shipping details

Category	00949 - M9 GEN 2 CB UL489
Discount Schedule	DE2
GTIN	00785901669043
Nbr. of units in pkg.	1
Package weight(Lbs)	0.26000000000000001

Returnability	Y
Country of origin	FR

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1719 - Schneider Electric declaration of conformity  Schneider Electric declaration of conformity
REACH	Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold
Product environmental profile	Available
Product end of life instructions	Need no specific recycling operations

Panel Thermo-Hygrostat

- Small, compact size (17.5 mm wide)
- Electronic control
- 4 functions
- Nominal voltage 110...240 V AC/DC
- Temperature ranges from +10 ° to +60°C
- Humidity range up to 90%
- LED status indication contact ON
- 35 mm rail (EN 60715) mount

Panel thermostat

- Small, compact size (17.5 mm wide)
- Snap action thermostatic Bimetal sensor
- Wide temperature setting range
- Long electrical life
- 35 mm rail (EN 60715) mount

* Measured with 0.3 K/min

** Measured with 0.5 %/min

For outline drawing see page 6

Contact specification

Contact configuration		1 NO (SPST-NO)	1 NC (SPST-NC)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	10/15	10/20	10/20
Rated voltage/ Maximum switching voltage	V AC	250/400	250/250	250/250
Rated load AC1	VA	2500	2500	2500
Rated load AC15 (230 V AC)	VA	500	250	250
Single phase motor rating AC3 (230 V AC)	kW	—	1.1	1.1
Breaking capacity DC1: 24/110/220 V	A	10/0.3/0.12	1/0.3/0.15	1/0.3/0.15
Minimum switching load	mW (V/mA)	500 (12/10)	500 (12/10)	500 (12/10)
Standard contact material		AgNi	AgNi	AgNi

Coil specifications

Nominal Voltage	V AC/DC	110...240	—	—
Rated Power	VA (50Hz)/W	1.8/0.44	—	—
Operating range	V AC/DC	88...264	—	—

Temperature specifications *

Setting range (ventilation)	°C	+10...+60	-20...+40	-20...+60	0...+60	-20...+40	-20...+60	0...+60
Switch differential	K	4 ± 2	7 ± 4			7 ± 4		
Setting accuracy full range	K	-1...+3	—			—		

Humidity specifications **

Setting range (humidity)	%	50...90	—			—		
Hysteresis	%	4 ± 2	—			—		
Setting accuracy	%	5	—			—		

Technical data

Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³			100 · 10 ³		
Ambient temperature range	°C	-25...+60	-45...+80			-45...+80		
Protection category		IP 20	IP 20			IP 20		

Approvals (according to type)



Ordering information

Example: 7T Series, Thermo-Hygrostat for temperature and humidity control, 110...240 V AC/DC, Multifunction, 35 mm rail (EN 60715) mount.

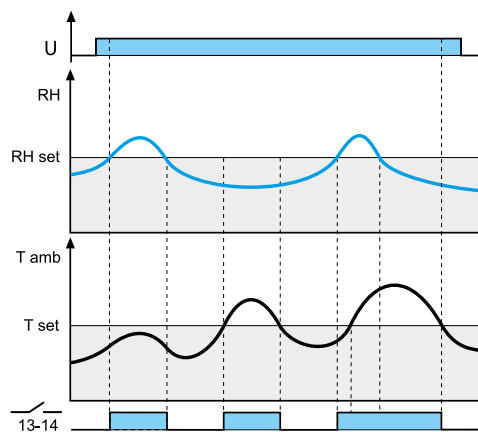
7 T . 5 1 . 0 . 2 3 0 . 4 3 6 0

Series	7 T	Control function	60 = Multifunction (only 7T.51) 01 = -20...+40 °C (only 7T.81) 02 = -20...+60 °C (only 7T.81) 03 = 0...+60 °C (only 7T.81)
Type	5 = Thermo-Hygrostatic control 8 = Temperature control	Contact configuration	3 = 1 NO contact 4 = 1 NC contact
No. of contacts	1 = 1 contact	Monitoring function	2 = Temperature control 4 = Temperature and Humidity, adjustable
Voltage type	0 = AC/DC (only 7T.51) 0 = No operating voltage required (only 7T.81)		
Rated operating voltage	230 = 110...240 V (only 7T.51) 000 = No operating voltage required		

Technical data

Insulation		7T.51	7T.81
Dielectric strength between open contacts	V AC	1000	500
Dielectric strength between supply and contact	V AC	2000	—
Other data			
Screw torque	Nm	0.5	0.5
Max. wire size		solid cable	stranded cable
	mm ²	1 x 2.5	1 x 1.5
	AWG	1 x 12	1 x 16

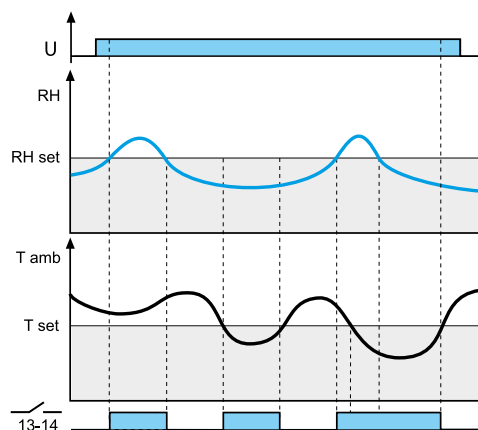
Functions 7T.51



HT: RH > RHset OR Tamb > Tset

Power is permanently applied to the thermo-hygrostat.
The contact 13-14 closes if the ambient humidity (RH) is > of set humidity (RHset) OR if the ambient temperature (Tamb) is > of set temperature (Tset).

When contact is close, LED is ON

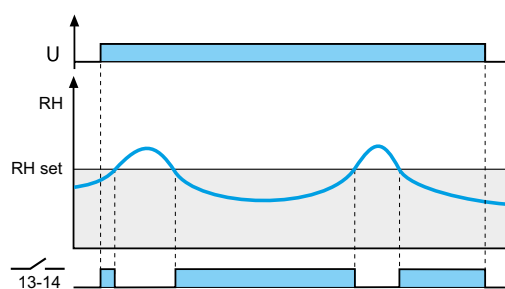


TH: RH > RHset OR Tamb < Tset

The contact 13-14 closes if the ambient humidity (RH) is > of set humidity (RHset) OR if the ambient temperature (Tamb) is < of set temperature (Tset).

When contact is close, LED is ON

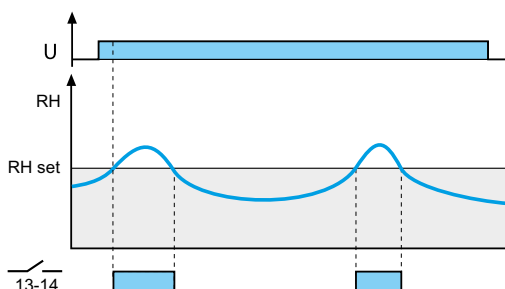
Functions 7T.51



HL: $RH < RH_{set}$

The contact 13-14 closes if the ambient humidity (RH) is < of set humidity (RHset)

When contact is close, LED is ON

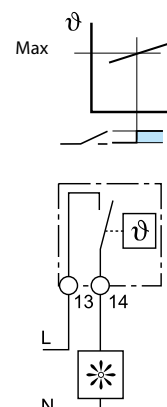
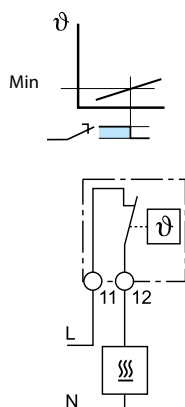


HM: $RH > RH_{set}$

The contact 13-14 closes if the ambient humidity (RH) is > of set humidity (RHset)

When contact is close, LED is ON

Functions 7T.81

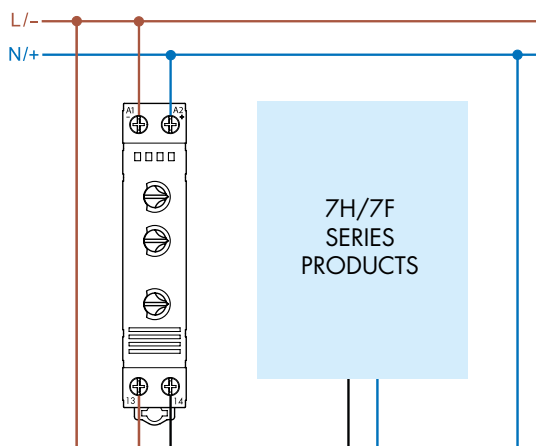


Heating control - Should the panel temperature fall below the (minimum) set temperature the contact will close to call for heat. The contact will open when this set temperature is exceeded.

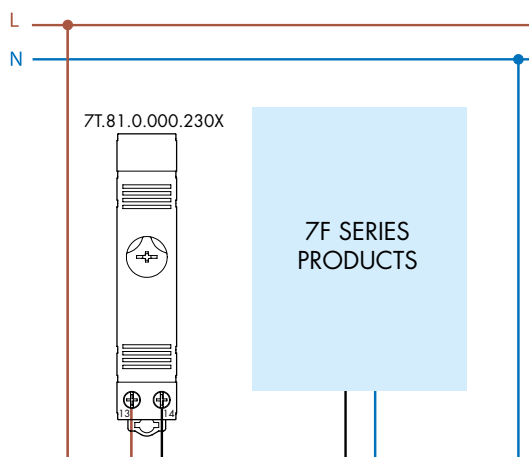
Ventilation control - Should the panel temperature exceed the (maximum) set temperature then the contact will close to call for cooling. The contact will open when the temperature falls below this set temperature.

Wiring diagrams

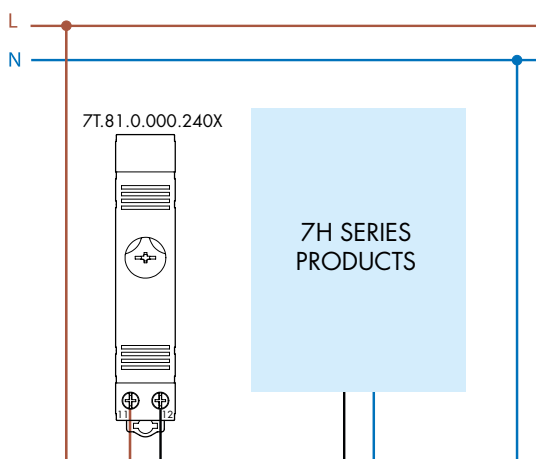
7T.51



7T.81...230x



7T.81...240x

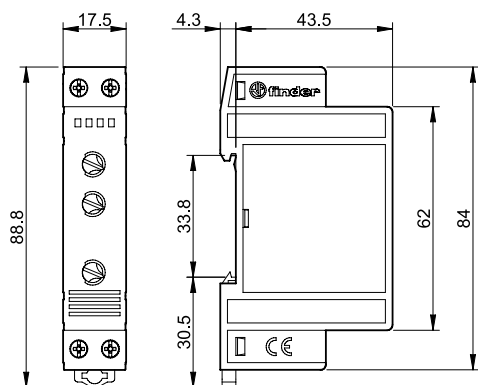


G

Outline drawings

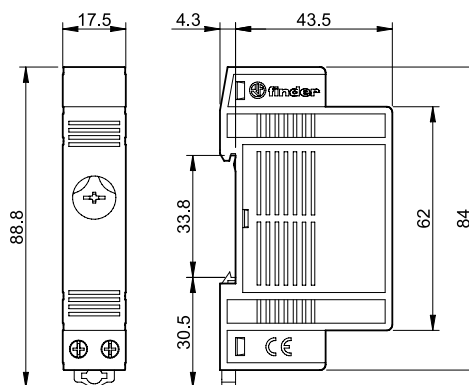
Type 7T.51

Screw terminal



Type 7T.81

Screw terminal



Panel heaters

Type 7H.51.0.230.0025

- Heating power 25 W

Type 7H.51.0.230.0050

- Heating power 50 W

- Nominal voltage (110...230)V AC/DC
- Safe touch
- PTC resistor, self regulating heating system
- Clip for 35 mm rail (EN 60715) mount

7H.51.0025/0050

Screw terminal



7H.51.0.230.0025



- Heating power 25 W
- Nominal voltage (110...230)V AC/DC
- Safe touch

7H.51.0.230.0050



- Heating power 50 W
- Nominal voltage (110...230)V AC/DC
- Safe touch

* At 20°C ambient temperature

** Except upper protection grille

For outline drawings see page 7

Heating specification

Heating power *	W	25	50
Heater		PTC resistor, self-regulating heating system	
Surface temperature**	°C	≤ 100	≤ 100
Housing		Plastic according to UL94 – V0, black	

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)/DC	110...230	110...230
Rated current	A	0.13	0.20
Operating range	V AC/DC	88...253	88...253

Technical data

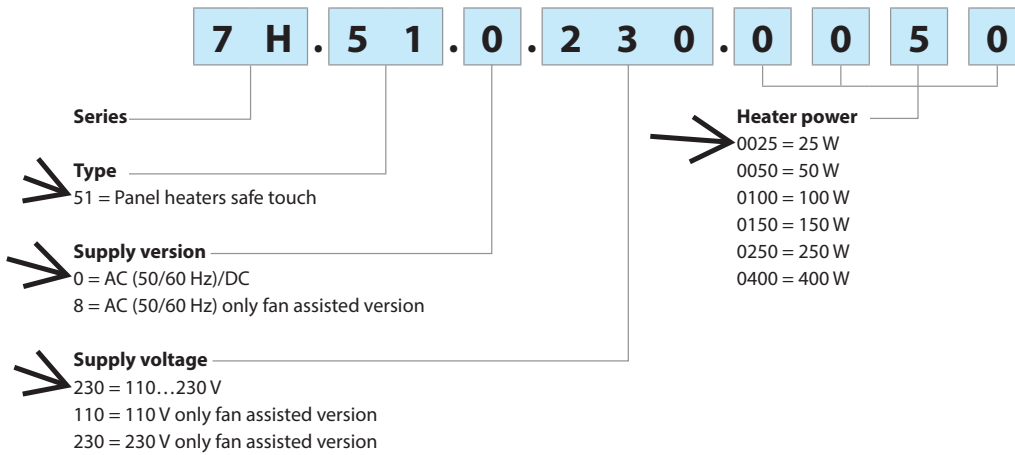
Radiator		Alluminium profile	
Electrical connection		Screw terminals	
Fitting position		Vertical	
Ambient temperature	°C	-45...+50	-45...+50
Protection category		IP 20	IP 20

Approvals (according to type)



Ordering information

Example: 7H series, Panel heaters, heating power 50 W, 110...230 V AC/DC.



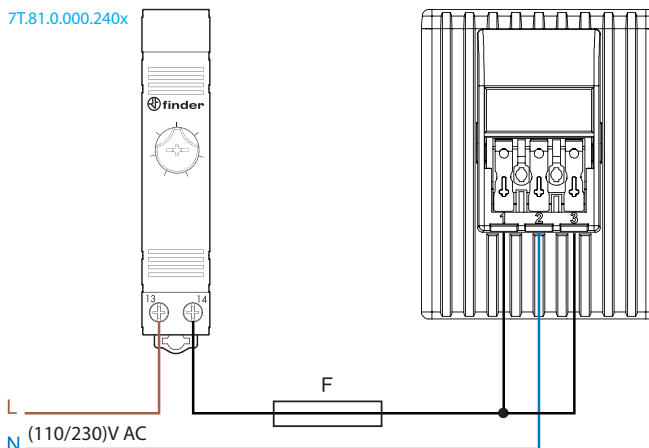
General data

Insulation		7H.51.0...025/050/100/150	7H.51.8...250/400
Rated voltage of power supply system	V AC	120/240	240
Rated insulations voltage	V AC	250	
Pollution degree		3	
Terminal insulation			
Dielectric strenght between L and N to metal clip on the housing	V AC (3s)	2500	
Overvoltage category		II	
Rated impulse voltage (1.2/50)µs	kV	2.5	
Terminals		solid cable	stranded cable
Max. wire size (push-in terminals)	mm ²	2 x 1.5	2 x 1.5
	AWG	2 x 16	2 x 16
Max. wire size (screw terminals)	mm ²	1 x 2.5	1 x 1.5
	AWG	1 x 12	1 x 16
Screw torque	Nm	0.5	

Wiring diagrams

Fan assisted version

7T.81.0.000.240x



NOTE: Separate supply (L) terminals for the heater and the internal fan allow them to be powered independently.

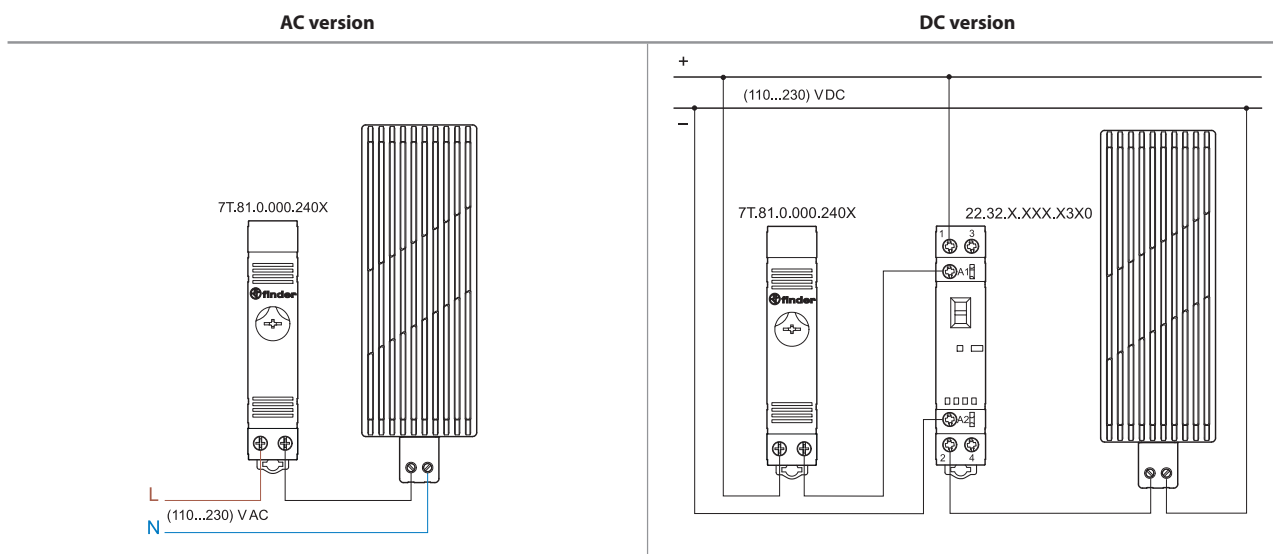
So, dependent on the specific situation, the installer might wish the heating element to be controlled by an upstream thermostat but require the fan to run continuously (although the latter will significantly reduce the product's life).

1 = L (heater)
2 = N
3 = L (fan)

F = aM 10 A @110 V AC
aM 6.3 A @230 V AC

Wiring diagrams

NOT Fan assisted versions



SAFETY NOTE

For reasons of safety and performance, heaters must be mounted in the following way:

1. keep a distance of 100 mm. from components above and below and of 60 mm from side components
2. install vertically (cables below heater) in the bottom part of cabinet
3. do not mount heaters over easily inflammable materials
4. do not operate in corrosive ambient air

WARNING

Do not cover the heater.

The 7H.51 Heater surface is very hot for 15-20 minutes after disconnecting.

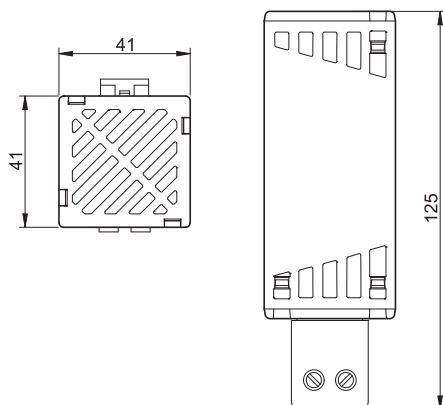
During working and maintenance, don't touch it.

Caution: risk of burns, temperatur of the side less than +100 °C..

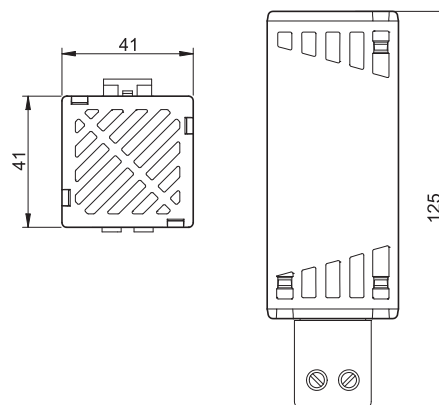
G

Outline drawings

Type 7H.51.0025
Screw terminal



Type 7H.51.0050
Screw terminal

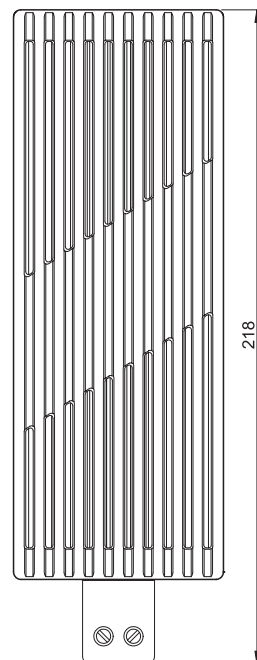
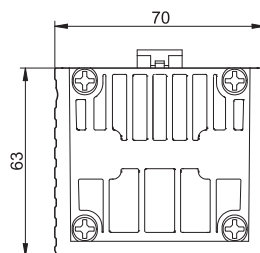
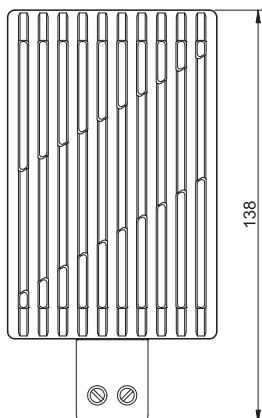
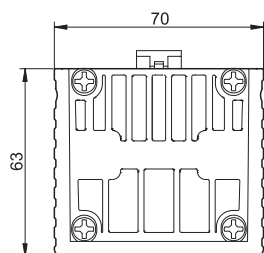


Outline drawings

Type 7H.51.0100
Screw terminal

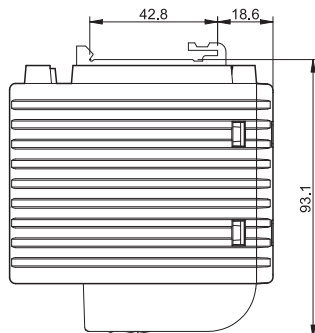
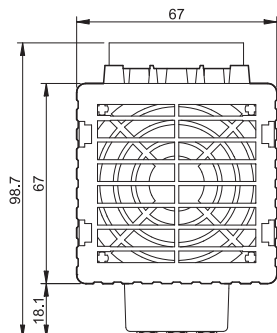
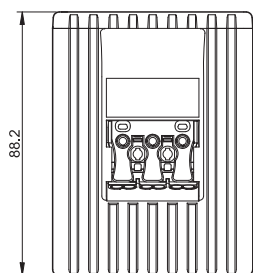


Type 7H.51.0150
Screw terminal



6

Types 7H.51.0250 / 0400
Push-in terminal



A

**General purpose relays
For socket mounting****Type 55.32**

- 2 CO 10 A

Type 55.33

- 3 CO 10 A

Type 55.34

- 4 CO 7 A

- AC & DC coils
- Lockable test button and mechanical flag indicator as standard on 2 & 4 pole types
- Integral LED and coil suppression options
- 94 series sockets for PCB or 35 mm rail mounting (EN 60715) with Screw, Screwless or Push-in terminals
- Coil Indication and EMC suppression modules 99 series and Timer module 86.30 options
- Optional alternative mounting adaptors
- UL Listing (certain relay/socket combinations)
- Cadmium Free contacts
- Contact material options
- European Patent

FOR UL RATINGS SEE:

"General technical information" page V

For outline drawing see page 6

Contact specification

Contact configuration		2 CO (DPDT)	3 CO (3PDT)	4 CO (4PDT)
Rated current/Maximum peak current	A	10/20	10/20	7/15
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400	250/250
Rated load AC1	VA	2500	2500	1750
Rated load AC15 (230 V AC)	VA	500	500	350
Single phase motor rating (230 V AC)	kW	0.37	0.37	0.125
Breaking capacity DC1: 30/110/220 V	A	10/0.5/0.25	10/0.5/0.25	7/0.5/0.25
Minimum switching load	mW (V/mA)	300 (5/5)	300 (5/5)	300 (5/5)
Standard contact material		AgNi	AgNi	AgNi

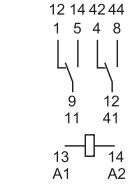
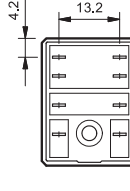
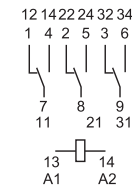
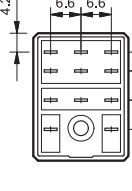
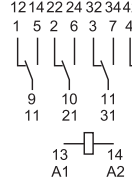
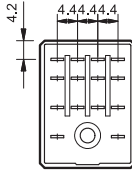
Coil specification

Nominal voltage (U_N)	V AC (50/60 Hz)	6 - 12 - 24 - 48 - 60 - 110 - 120 - 230 - 240		
	V DC	6 - 12 - 24 - 48 - 60 - 110 - 125 - 220		
Rated power AC/DC	VA (50 Hz)/W	1.5/1	1.5/1	1.5/1
Operating range	AC	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
	DC	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
Holding voltage	AC/DC	$0.8 U_N / 0.5 U_N$	$0.8 U_N / 0.5 U_N$	$0.8 U_N / 0.5 U_N$
Must drop-out voltage	AC/DC	$0.2 U_N / 0.1 U_N$	$0.2 U_N / 0.1 U_N$	$0.2 U_N / 0.1 U_N$

Technical data

Mechanical life AC/DC	cycles	$20 \cdot 10^6 / 50 \cdot 10^6$	$20 \cdot 10^6 / 50 \cdot 10^6$	$20 \cdot 10^6 / 50 \cdot 10^6$
Electrical life at rated load AC1	cycles	$200 \cdot 10^3$	$200 \cdot 10^3$	$150 \cdot 10^3$
Operate/release time	ms	10/5	9/5	9/5
Insulation between coil and contacts (1.2/50 μ s)	kV	4	4	4
Dielectric strength between open contacts	V AC	1000	1000	1000
Ambient temperature range	°C	-40...+85	-40...+85	-40...+85
Environmental protection		RT I	RT I	RT I

Approvals (according to type)

55.32	55.33	55.34
		
• 2 CO 10 A • Plug-in 94 series sockets	• 3 CO 10 A • Plug-in 94 series sockets	• 4 CO 7 A • Plug-in 94 series sockets
 	 	 

Ordering information

Example: 55 series plug-in relay, 4 CO, 12 V DC coil, lockable test button and mechanical indicator.

A

5 5 . 3 4 . 9 . 0 1 2 . 0 0 4 0

Series

Type
1 = PCB
3 = Plug-in

No. of poles
2 = 2 pole, 10 A
3 = 3 pole, 10 A
4 = 4 pole, 7 A

Coil version
8 = AC (50/60 Hz)
9 = DC

Coil voltage
See coil specifications

A: Contact material
0 = Standard AgNi
5 = AgNi + Au

B: Contact circuit
0 = CO (nPDT)

D: Special versions
0 = Standard
1 = Wash tight (RT III)
for 55.12, 55.13 and 55.14 only

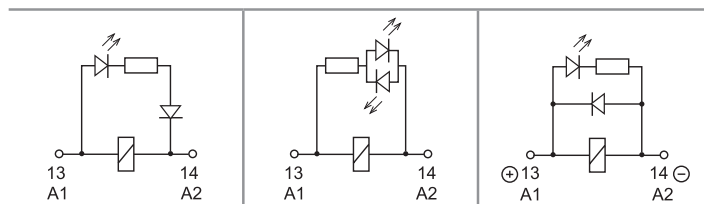
C: Options
0 = None
1 = Lockable test button
2 = Mechanical indicator
3 = LED (AC)
4 = Lockable test button + mechanical indicator
5 = Lockable test button + LED (AC)
54 = Lockable test button + LED (AC) + mechanical indicator
6* = Double LED (DC non-polarized)
7* = Lockable test button + double LED (DC non-polarized)
74* = Lockable test button + double LED (DC non-polarized) + mechanical indicator
8* = LED + diode (DC, polarity positive to pin A1/13)
9* = Lockable test button + LED + diode (DC, polarity positive to pin A1/13)
94* = Lockable test button + LED + diode (DC, polarity positive to pin A1/13) + mechanical indicator
* Options not available for 220 V DC versions.

Selecting features and options: only combinations in the same row are possible.

Preferred selections for best availability are shown in **bold**.

Type	Coil version	A	B	C	D
55.32/34	AC - DC	0 - 5	0	0	0
	AC	0 - 5	0	2 - 3 - 4 - 5	0
	AC	0 - 5	0	54	/
	DC	0 - 5	0	2 - 4 - 6 - 7 - 8 - 9	0
	DC	0 - 5	0	74 - 94	/
55.33	AC - DC	0 - 5	0	0	0
	AC	0 - 5	0	1 - 3 - 5	0
	DC	0 - 5	0	1 - 6 - 7 - 8 - 9	0
55.12/13/14	AC - DC	0 - 5	0	0	0 - 1

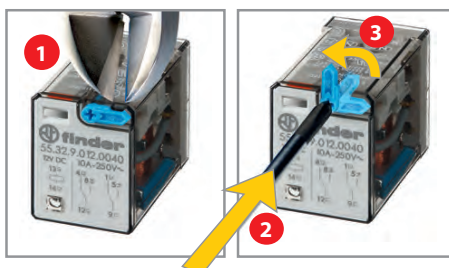
Descriptions: options and special versions



C: Option 3, 5, 54
LED (AC)

C: Option 6, 7, 74
Double LED
(DC non-polarized)

C: Option 8, 9, 94
LED + diode (DC, polarity positive to pin A1/13)



Lockable test button and mechanical flag indicator
(0010, 0040, 0050, 0054, 0070, 0074, 0090, 0094)

The dual-purpose Finder test button can be used in two ways:

Case 1) The plastic pip (located directly above the test button) remains intact. In this case, when the test button is pushed, the contacts operate. When the test button is released the contacts return to their former state.

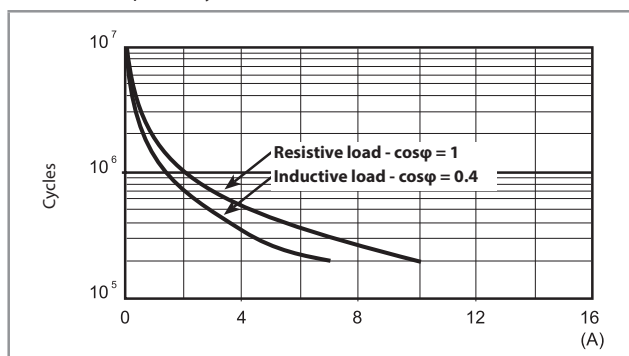
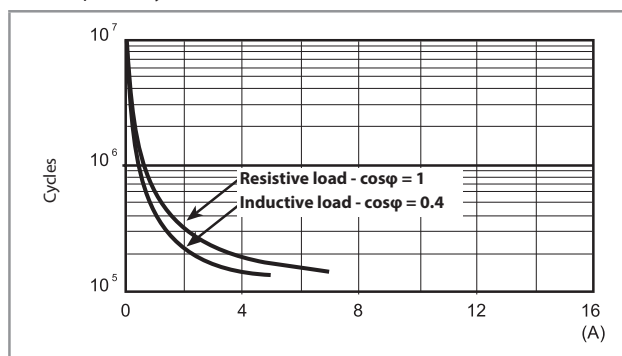
Case 2) The plastic pip is broken-off (using an appropriate cutting tool). In this case, (in addition to the above function), when the test button is pushed and rotated, the contacts are latched in the operating state, and remain so until the test button is rotated back to its former position. In both cases ensure that the test button actuation is swift and decisive.

Technical data

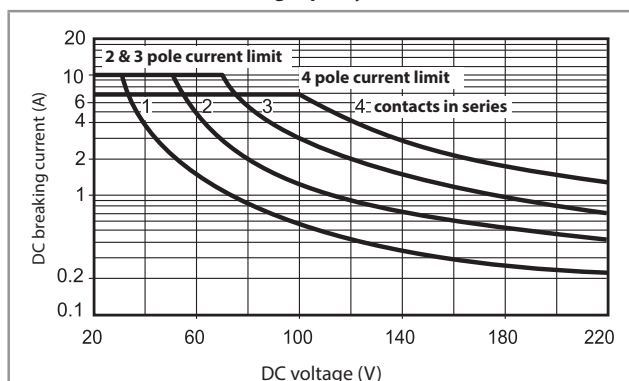
A

Insulation according to EN 61810-1			2 pole - 3 pole		4 pole	
Nominal voltage of supply system			V AC	230/400	230	
Rated insulation voltage			V AC	400	250	
Pollution degree				2	2	
Insulation between coil and contact set						
Type of Insulation				Basic	Basic	
Overvoltage category				III	III	
Rated impulse voltage			kV (1.2/50 μs)	4	4	
Dielectric strength			V AC	2000	2000	
Insulation between adjacent contacts						
Type of insulation				Basic	Basic	
Overvoltage category				III	II	
Rated impulse voltage			kV (1.2/50 μs)	4	2.5	
Dielectric strength			V AC	2000	2000	
Insulation between open contacts						
Type of disconnection				Micro-disconnection	Micro-disconnection	
Dielectric strength			V AC/kV (1.2/50 μs)	1000/1.5	1000/1.5	
Insulation between coil terminals						
Rated impulse voltage (surge) differential mode (according to EN 61000-4-5)			kV(1.2/50 μs)	4		
Other data						
Bounce time: NO/NC			ms	1/4 (2 pole), 1/6 (3 pole), 2/4 (4 pole)		
Vibration resistance (5...55)Hz: NO/NC			g	15/15		
Shock resistance			g	16		
Power lost to the environment		without contact current	W	1		
		with rated current	W	3 (2 pole)	4 (3 pole)	3 (4 pole)
Recommended distance between relays mounted on PCB			mm	≥ 5		

Contact specification

F 55 - Electrical life (AC) v contact current
2 and 3 pole relaysF 55 - Electrical life (AC) v contact current
4 pole relays

H 55 - Maximum DC1 breaking capacity



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of $\geq 100 \cdot 10^3$ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.

Note: the release time of the load will be increased.

Coil specifications

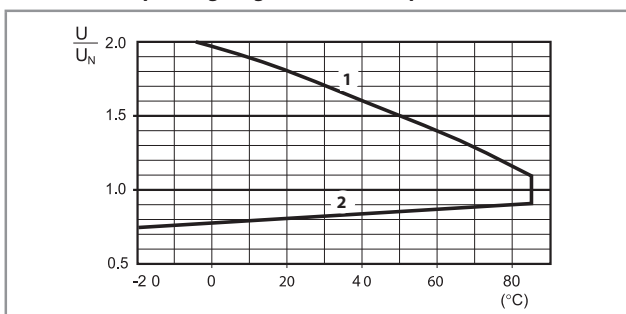
DC coil data

Nominal voltage U_N	Coil code	Operating range		Resistance R	Rated coil consumption I at U_N
V		U_{min} V	U_{max} V	Ω	mA
6	9.006	4.8	6.6	40	150
12	9.012	9.6	13.2	140	86
24	9.024	19.2	26.4	600	40
48	9.048	38.4	52.8	2400	20
60	9.060	48	66	4000	15
110	9.110	88	121	12500	8.8
125	9.125	100	138	17300	7.2
220	9.220	176	242	54000	4

AC coil data

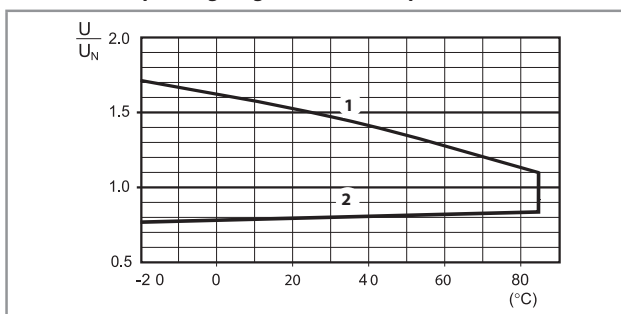
Nominal voltage U_N	Coil code	Operating range		Resistance R	Rated coil consumption I at U_N
V		U_{min} V	U_{max} V	Ω	mA
6	8.006	4.8	6.6	12	200
12	8.012	9.6	13.2	50	97
24	8.024	19.2	26.4	190	53
48	8.048	38.4	52.8	770	25
60	8.060	48	66	1200	21
110	8.110	88	121	3940	12.5
120	8.120	96	132	4700	12
230	8.230	184	253	17000	6
240	8.240	192	264	19100	5.3

R 55 - DC coil operating range v ambient temperature



- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

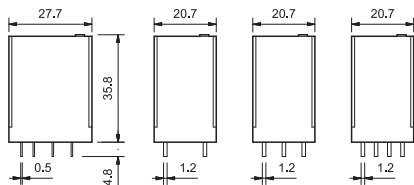
R 55 - AC coil operating range v ambient temperature



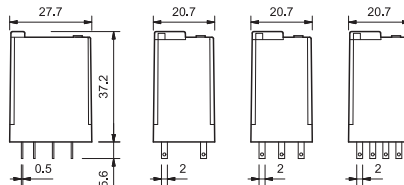
- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

Outline drawings

Types 55.12/13/14



Types 55.32/33/34



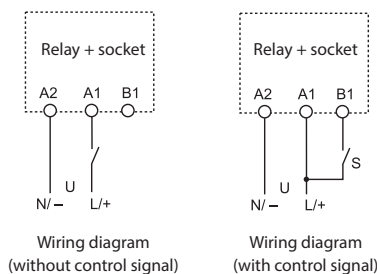
Timer modules for use in conjunction with relay & socket.
86.00 - Multi-function & multi-voltage timer module
86.30 - Bi-function & multi-voltage timer module

- Timer module type 86.00 for 90, 92, 96 series sockets and type 86.30 for 90, 92, 94, 95, 96, 97 series sockets
- Wide supply voltage range:
12...240 V AC/DC (86.00)
12...24 V AC/DC or 230...240 V AC (86.30)
- LED indicator
- Atex versions available

86.00

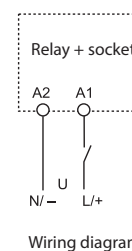

- Time scale: from 0.05 s to 100 h
- Multi-function
- Plug-in for use with 90.02, 90.03, 92.03 and 96.04 sockets

AI: On-delay
DI: Interval
SW: Symmetrical flasher (starting pulse on)
BE: Off-delay with control signal
CE: On- and off-delay with control signal
DE: Interval with control signal on
EE: Interval with control signal off
FE: Interval with control signal on and off


86.30


- Time scale: from 0.05 s to 100 h
- Bi-function
- Plug-in for use with 90.02, 90.03, 92.03, 94.P3, 94.P4, 94.02, 94.03, 94.04, 95.P3, 95.P5, 95.03, 95.05, 96.02, 96.04, 97.P1, 97.P2, 97.01 and 97.02 sockets

AI: On-delay
DI: Interval



* For Atex versions, refer to the "Other data" table on the page 4
For outline drawing see page 5

Contact specification*

Contact configuration

Rated current/Maximum peak current A

Rated voltage/Maximum switching voltage V AC

Rated load AC1 VA

Rated load AC15 (230 V AC) VA

Single phase motor rating (230 V AC) kW

Breaking capacity DC1: 24/110/220 V A

Minimum switching load mW (V/mA)

Standard contact material

Standard contact material

Supply specification*

Nominal voltage (U_N) V AC (50/60 Hz)

V DC

Rated power AC/DC W

Operating range V AC (50/60 Hz)

DC

Technical data

Specified time range

Repeatability %

Recovery time ms

Minimum control impulse ms

Setting accuracy full range %

Electrical life at rated load in AC1 cycles

Ambient temperature range °C

Protection category

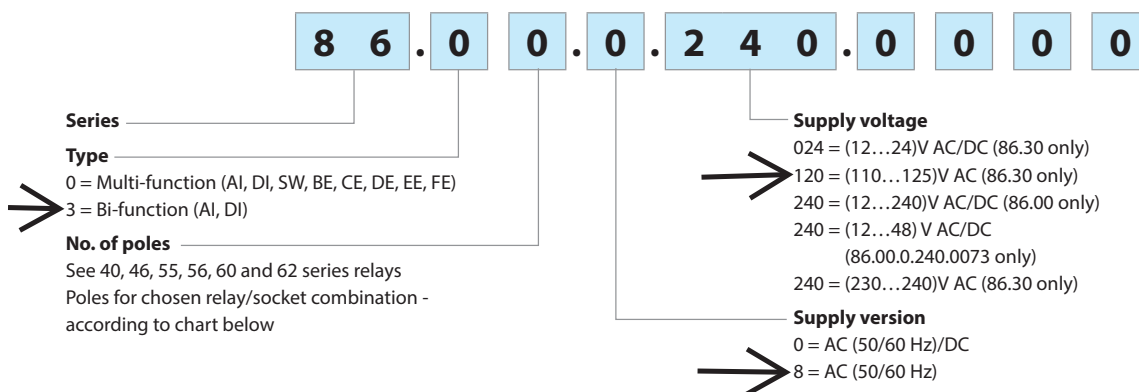
Approvals (according to type)

See 56, 60 and 62 series relays
Note: Do not use with relays
62.3x.x012.x300 and 62.3x.x012.x600

See 40, 46, 55, 56, 60 and
62 series relays

Ordering information

Example: 86 series multi-function timer module, (12...240)V AC/DC supply voltage.



Combinations

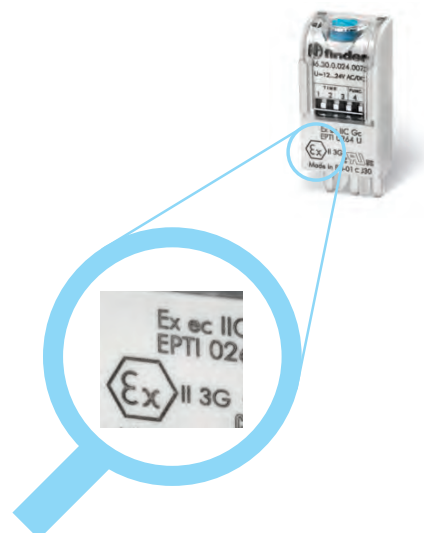
Number of poles	Relay type	Socket type	Timer module
1	40.31	95.P3/95.03	86.30
1	40.51/61	95.P5/95.05	86.30
1	46.61	97.P1/97.01	86.30
2	40.52/40.62	95.P5/95.05	86.30
2	46.52	97.P2/97.02	86.30
2	55.32	94.P4/94.02	86.30
2	56.32	96.02	86.30
2	60.12	90.02	86.00/86.30
2	62.32	92.03	86.00/86.30
3	55.33	94.P3/94.03	86.30
3	60.13	90.03	86.00/86.30
3	62.33	92.03	86.00/86.30
4	55.34	94.P4/94.04	86.30
4	56.34	96.04	86.00/86.30

Other data Timer ATEX versions

Code available	Nominal voltage	Operating range	Use temperature
86.00.0.240.0073	12-48 V AC/DC	10.2...60 V AC/DC	-20...+50°C
86.30.0.024.0073	12-24 V AC/DC	9.6...33.6 V AC/DC	-20...+50°C

Markings - ATEX versions - ATEX, II 3G Ex ec IIC Gc

MARKING	
	Specific marking of explosion protection
II	Component for surface plant (different from mines)
3	Category 3: normal level of protection
GAS	G Explosive atmosphere due to presence of combustible gas vapour or mist
	Ex ec Increased security
	IIC Gas group
	Gc Equipment Protection Level
	-20 °C ≤ Ta ≤ +50 °C Ambient temperature
EPTI 17 ATEX 0264 U	
EPTI: laboratory which issues the CE type certificate	
17: year of issue of certificate	
0264: number of CE type certificate	
U: ATEX component	



Technical data

EMC specifications				
Type of test		Reference standard	86.00	86.30
Electrostatic discharge	contact discharge	EN 61000-4-2	4 kV	n.a.
	air discharge	EN 61000-4-2	8 kV	8 kV
Radio-frequency electromagnetic field (80 ÷ 1000 MHz)		EN 61000-4-3	10 V/m	10 V/m
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals		EN 61000-4-4	4 kV	2 kV
Surges (1.2/50 µs) on Supply terminals	common mode	EN 61000-4-5	4 kV	2 kV
	differential mode	EN 61000-4-5	4 kV	1 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals		EN 61000-4-6	10 V	10 V
Radiated and conducted emission		EN55022	class B	class B
Other data		86.00	86.30	
Current absorption on signal control (B1)	mA	1	—	
Power lost to the environment	without contact current	W	0.1 (12 V) - 1 (230 V)	0.2
	with rated current		See 56, 60 and 62 series relays	
			See 40, 46, 55, 56, 60, 62 series relays	

Times scales

						
(0.05...1)s	(0.5...10)s	(5...100)s	(0.5...10)min	(5...100)min	(0.5...10)h	(5...100)h

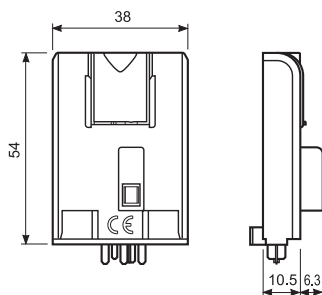
NOTE: Time scales and functions must be set before energising the timer.

To achieve the minimum time setting of 0.05 seconds it is necessary to use one of the functions with control signal.

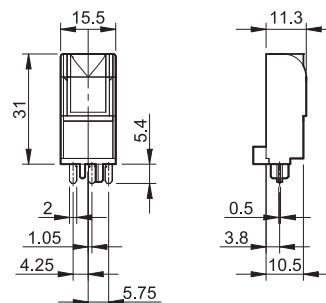
When setting very short times it may be necessary to take into account the operate time of the relay used.

Outline drawings

Type 86.00



Type 86.30



Functions

 U = Supply voltage S = Signal switch

— = Output contact

LED Type 86.00	LED Type 86.30	Supply voltage	NO output contact
		OFF	Open
		ON	Open
		ON	Open (Timing in Progress)
		ON	Closed

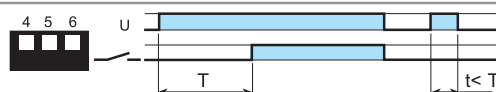
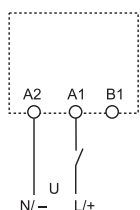
Without control signal = Start via contact in supply line (A1).

With control signal = Start via contact into control terminal (B1).

Wiring diagram

Type 86.00

Without control signal

**(AI) On-delay.**

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

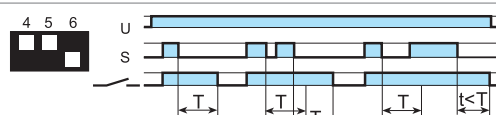
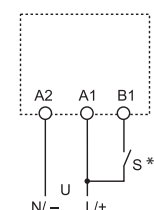
**(DI) Interval.**

Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

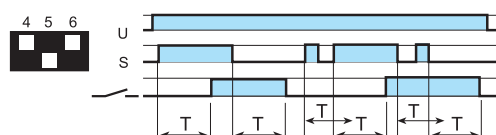
**(SW) Symmetrical flasher (starting pulse on).**

Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

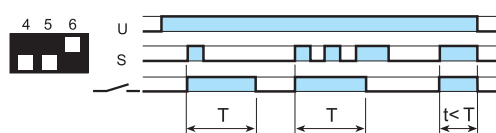
With control signal

**(BE) Off-delay with control signal.**

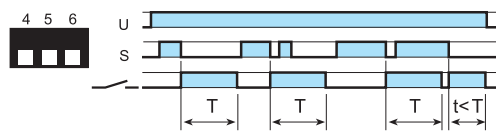
Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.

**(CE) On- and off-delay with control signal.**

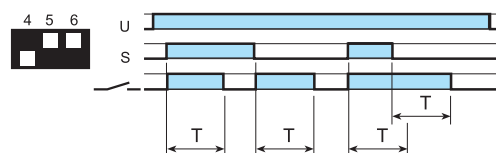
Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which time the output contacts transfer. Opening the Signal switch initiates the same preset delay, after which time the output contacts reset.

**(DE) Interval with control signal on.**

Power is permanently applied to the timer. On momentary or maintained closure of Signal Switch (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

**(EE) Interval with control signal off.**

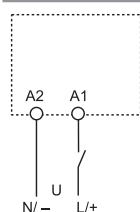
Power is permanently applied to the timer. On opening of the Signal Switch (S) the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

**(FE) Interval with control signal on and off.**

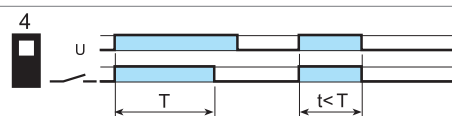
Power is permanently applied to the timer. Both the opening and closing of the Signal Switch (S) initiates the transfer of the output contacts. In both instances the contacts reset after the delay period has elapsed.

Wiring diagram

Type 86.30

**(AI) On-delay.**

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

**(DI) Interval.**

Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.



R15-MB

- Red Color Polycarbonate Lens
- 120v, 15w Bulb
- U.L. Listed NITW--Industrial Control Panels
- NEMA 4X
- 1/4" Quick Connect Terminals
- Single Hole Mount Design

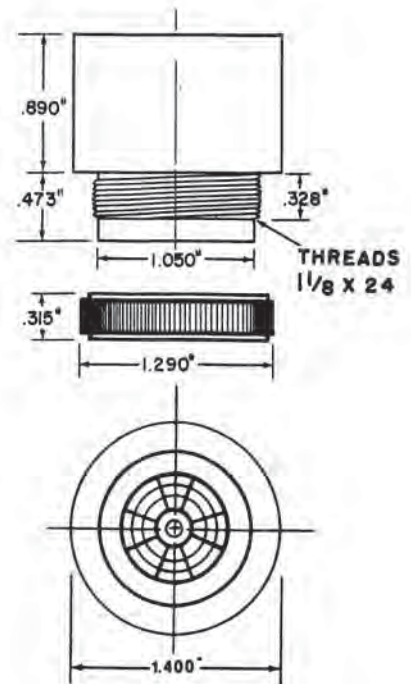
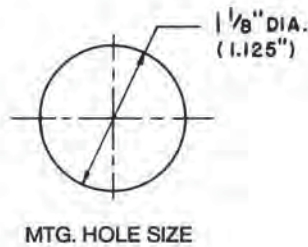
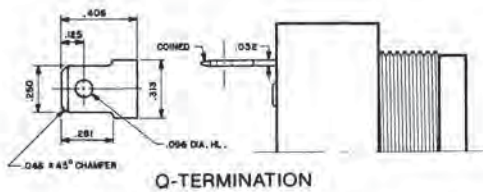


1376 Township Road 743 • Ashland, Ohio 44805
PH 419-281-9120 • FX 419-289-8261

AC⚡DC EQUIPMENT CO.

3101 Bernard Dr.
Edgewood, KY 41017
Phone (606) 341-0330

HORNS



- ⚡ Emits a warble tone.
- ⚡ Sound level at 2 feet - 95 DB
- ⚡ Operating current at max. voltage - See below.
- ⚡ Operating temperature -40°C (-40°F) to + 65° (150°F).
- ⚡ Reverse polarity protected.
- ⚡ Case - glass filled polyester.
- ⚡ Potting - epoxy resin.
- ⚡ Alarms mounted in a suitable enclosure can be used outdoors.

Ordering Information

Cat. No.	V	MA
MW-09-616-Q	12 VDC	18
MW-09-550-Q	24 VAC	8
MW-09-201-Q	120 VAC	8
MW-09-301-Q	220 VAC	8

Add suffix G to catalog no. for gasket

CONTACT AC-DC FOR MODIFICATIONS

Product data sheet

Specifications



Monolithic push button, Harmony XB7, plastic, black, 22mm, spring return, unmarked, 1NO+1NC

XB7NA25

Main

Range of Product	Harmony XB7
Product or Component Type	Push-button
Device short name	XB7
Mounting diamete	0.9 in (22 mm)
Sale per indivisible quantity	10
IP degree of protection	IP20 IEC 60529 rear face) IP65 IEC 60529 front face)
Shape of signaling unit head	Round
Type of operator	spring return
Operator profile	Black flush, unmarked
Contacts type and composition	1 NO + 1 NC
Connections - terminals	Screw clamp terminals, <= 2 x 1.5 mm² with cable end IEC 60947-1 Screw clamp terminals, 1 x 0.34...2 x 2.5 mm² without cable end IEC 60947-1
device presentation	Monolithic product

Complementary

CAD overall width	1.1 in (29 mm)
CAD overall height	1.1 in (29 mm)
CAD overall depth	2.03 in (51.5 mm)
Terminals description ISO n°1	(21-22)NC (13-14)NO
Net Weight	0.046 lb(US) (0.021 kg)
Device mounting	Fixing hole 0.9 in (22.5 mm) 22.3 +0.4/0 IEC 60947-1
Fixing center	>= 30 x 40 mm support panel) metal 0.04...0.2 in (1...6 mm) >= 30 x 40 mm support panel) plastic 0.08...0.2 in (2...6 mm)
Fixing mode	Fixing nut beneath head 17.7...21.2 lbf.in (2...2.4 N.m)
Contact operation	Slow-break
Positive opening	With NC contact IEC 60947-5-1 appendix K
Mechanical durability	1000000 cycles
Tightening torque	7.08...10.6 lbf.in (0.8...1.2 N.m) IEC 60947-1

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Shape of screw head	Cross JIS No 1 Cross Philips no 1 Cross pozidriv No 1 Slotted flat Ø 4 mm Slotted flat Ø 5.5 mm
Short-circuit protection	4 A cartridge fuse gG IEC 60947-5-1
[Ui] rated insulation voltage	250 V 3)IEC 60947-1
[Uimp] rated impulse withstand voltage	4 kV IEC 60947-1
[Ie] rated operational current	0.1 A 250 V, DC-13, R300 IEC 60947-5-1 0.22 A 125 V, DC-13, R300 IEC 60947-5-1 0.3 A 240 V, AC-14, D300 IEC 60947-5-1 0.6 A 120 V, AC-14, D300 IEC 60947-5-1
Electrical durability	1000000 cycles, DC-13, 0.3 A 24 V 216000 cyc/mn 0.5 IEC 60947-5-1 appendix C 1000000 cycles, AC-15, 0.03 A 230 V 216000 cyc/mn 0.5 IEC 60947-5-1 appendix C 1000000 cycles, AC-15, 0.09 A 240 V 108000 cyc/mn 0.5 IEC 60947-5-1 appendix C
Electrical reliability	$\Lambda \leq 10\exp(-6)$ 17 V, 5 mA IEC 60947-5-4

Environment

protective treatment	TH
Ambient Air Temperature for Storage	-40...158 °F (-40...70 °C)
Ambient Air Temperature for Operation	-13...158 °F (-25...70 °C)
Overvoltage category	Class II IEC 61140
NEMA degree of protection	NEMA 12 UL 50 E NEMA 3 UL 50 E
Standards	UL 508 JIS C8201-5-1 CSA C22.2 No 14 IEC 60947-1 IEC 60947-5-1 JIS C8201-1
Product Certifications	CCC GOST
Vibration resistance	5 gn 2...500 Hz)IEC 60068-2-6
Shock resistance	50 gn 11 ms) half sine wave acceleration IEC 60068-2-27 30 gn 18 ms) half sine wave acceleration IEC 60068-2-27

Ordering and shipping details

Category	US10CS222464
Discount Schedule	0CS2
GTIN	3606480469954
Returnability	Yes
Country of origin	ID

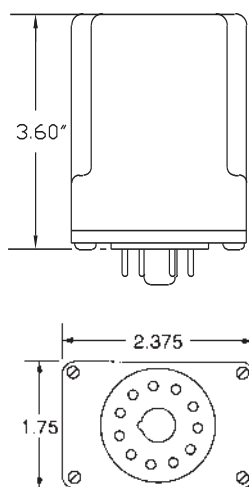
Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.4 in (6.0 cm)
Package 1 Width	1.2 in (3.0 cm)
Package 1 Length	1.2 in (3.0 cm)

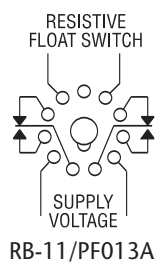
OPERATION

The ATC Diversified SPM Series Single channel seal failure module is a specialized control for monitoring the **shaft seal** of a **submersible pump motor**. A leak is detected by sensing the position of a resistive float switch installed in the seal cavity. When the resistance drops below the sensitivity rating, the output relay energizes and the LED illuminates. When the fault condition clears, the output relay resets automatically.

DIMENSIONS (INCHES)



WIRING



MODEL NUMBER >>>>>>	SPM	120	AAA	
Sensitivity				
470 Ω $\pm$ 10% Fixed				470
470 Ω to 10K Ω $\pm$ 10% Adjustable				10K
4.7K Ω to 100K Ω $\pm$ 10% Adjustable				100K



CA[®]US

Single Channel Seal Failure Alarm

SPECIFICATIONS

CONTROL VOLTAGE	120 VAC, 50/60 Hz	
SWITCH VOLTAGE	9 VDC	
ISOLATION	2500 Volts	
POWER REQUIRED	2 VA	
DUTY CYCLE	Continuous	
SENSITIVITY	470 Ω $\pm$ 10% Fixed	
	470 Ω to 10K Ω $\pm$ 10% Adjustable	
	4.7K Ω to 100K Ω $\pm$ 10% Adjustable	
CONTACT RATING	DPDT, 10 A @ 250 VAC Resistive, 360 VA Inductive	
RESPONSE TIMES	Operate	15 ms (approximately)
	Release	8 ms (approximately)
LIFE EXPECTANCY	Mechanical	10,000,000 Operations (Minimum)
	Electrical	50,000 Operations @ Rated Load
INDICATORS	Red LED illuminates when leak is detected	
TEMPERATURE RATING	Operate	-4° to 131°F (-20° to +55°C)
	Storage	-40° to 185°F (-40° to +85°C)
ENCLOSURE	11-Pin plug-in "A" style enclosure	
WEIGHT	8 oz.	



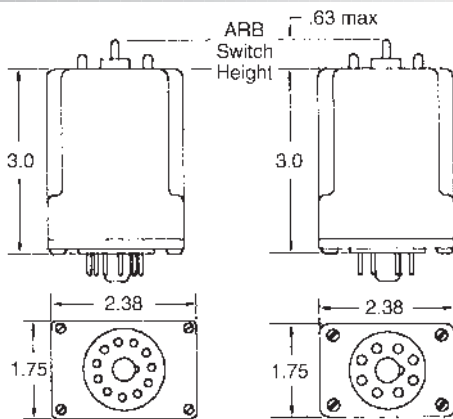
ARA

ARB



Duplexor

DIMENSIONS (INCHES)



The **Duplexor** is used in control panels where **two loads** are required to alternate to provide equal run time on the loads. The alternating action is initiated by a control switch, which is common with one side of the control voltage. The output contacts will change states each time the control switch is opened, thus alternating the two loads. The LED indicators show the position of the output relay.

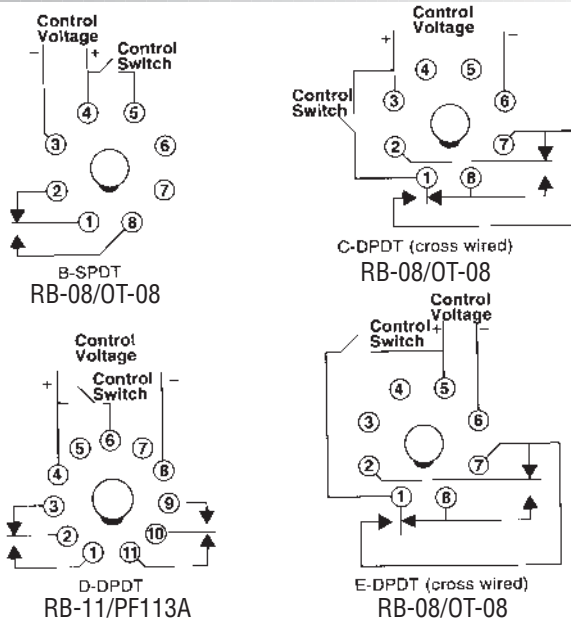
The ARA series is the standard Duplexor providing automatic alternating sequence. The ARB has the automatic sequencing feature plus the option of locking it into one sequence. A three position switch permits the field selection of normal duplexing action, locking in the A-B sequence, or B-A sequence.

SPECIFICATIONS

CONTROL VOLTAGE	24, 120 VAC/DC, 208, 240, 480 VAC, 50/60Hz, 48 VDC, $\pm 10\%$	
CONTROL SWITCH CURRENT	1 mA	
POWER REQUIRED	3 VA (Approximately)	
DUTY CYCLE	Continuous	
LIFE EXPECTANCY	Mechanical	10,000,000 Operations (Minimum)
	Electrical	100,000 Operations @ Rated Load
INDICATORS	LED Shows Output Position	
TEMPERATURES RATING	Operate	-4° to 131°F (-20° to +55°C)
	Storage	-40° to 185°F (-40° to +85°C)
CONTACT RATING	10 Amps @ 240 VAC, Resistive 1/8 hp @ 120 VAC, 1/4 hp @ 240 VAC Inductive, 360 VA @ 240 VAC, Inductive	
ENCLOSURE	"A" Lexan® Dust Cover	
TERMINATIONS	Industrial Plug-in	
WEIGHT	4.5 oz.	

NOTE: For Analog signal inputs, ATC offers a duplexing pump control — the ATC-Digitec 3800 Panel Meter 480 VAC is not available in the D-DPDT 11-Pin configuration

WIRING



MODEL NUMBER >>>>>>	AR				A
Type of Alternating Relay					
Standard Duplexor	A				
Special Function Duplexor	B				
Control Voltage					
24 VAC/DC	24				
48 VDC	48				
120 VAC/DC	120				
208 VAC	208				
240 VAC	240				
380-408 VAC (Consult Factory)	480				
Type of Voltage					
VAC or VAC/DC	A				
48 VDC only	D				
Contact Configuration					
SPDT	B				
DPDT (Cross Wired)	C				
DPDT	D				
DPDT (Cross Wired)	E				
Enclosure Style	A				

Product data sheet

Specifications



Monolithic selector switch,
Harmony XB7, plastic, black,
22mm, stay put, 3 positions, stay
put, 2NO

XB7ND33

Main

Range of Product	Harmony XB7
Product or Component Type	Selector switch
Device short name	XB7
Mounting diamete	0.9 in (22 mm)
Sale per indivisible quantity	10
Net Weight	0.057 lb(US) (0.026 kg)
IP degree of protection	IP20 IEC 60529 rear face) IP65 IEC 60529 front face)
Shape of signaling unit head	Round
Type of operator	stay put
Operator profile	Black standard handle
Operator position information	3 positions +/- 45°
Contacts type and composition	2 NO
Positive opening	Without

Complementary

CAD overall width	1.1 in (29 mm)
CAD overall height	1.1 in (29 mm)
CAD overall depth	2.7 in (68.5 mm)
Terminals description ISO n°1	(23-24)NO (13-14)NO
Device mounting	Fixing hole 0.9 in (22.5 mm) 22.3 +0.4/0 IEC 60947-1
Fixing center	>= 30 x 40 mm support panel) metal 0.04...0.2 in (1...6 mm) >= 30 x 40 mm support panel) plastic 0.08...0.2 in (2...6 mm)
Fixing mode	Fixing nut 17.7...21.2 lbf.in (2...2.4 N.m)
Contact operation	Slow-break
Mechanical durability	300000 cycles
Connections - terminals	Screw clamp terminals, <= 2 x 1.5 mm² with cable end IEC 60947-1 Screw clamp terminals, 1 x 0.34...2 x 2.5 mm² without cable end IEC 60947-1
Tightening torque	7.08...10.6 lbf.in (0.8...1.2 N.m) IEC 60947-1

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Shape of screw head	Cross JIS No 1 Cross Philips no 1 Cross pozidriv No 1 Slotted flat Ø 4 mm Slotted flat Ø 5.5 mm
Short-circuit protection	4 A cartridge fuse gG IEC 60947-5-1
[Ui] rated insulation voltage	250 V 3)IEC 60947-1
[Uimp] rated impulse withstand voltage	4 kV IEC 60947-1
[Ie] rated operational current	0.1 A 250 V, DC-13, R300 IEC 60947-5-1 0.22 A 125 V, DC-13, R300 IEC 60947-5-1 0.3 A 240 V, AC-14, D300 IEC 60947-5-1 0.6 A 120 V, AC-14, D300 IEC 60947-5-1
Electrical durability	1000000 cycles, DC-13, 0.3 A 24 V 216000 cyc/mn 0.5 IEC 60947-5-1 appendix C 1000000 cycles, AC-15, 0.03 A 230 V 216000 cyc/mn 0.5 IEC 60947-5-1 appendix C 1000000 cycles, AC-15, 0.09 A 240 V 108000 cyc/mn 0.5 IEC 60947-5-1 appendix C
Electrical reliability	$\Lambda < 10^{\exp(-6)}$ 17 V 5 mA IEC 60947-5-4

Environment

protective treatment	TH
Ambient Air Temperature for Storage	-40...158 °F (-40...70 °C)
Ambient Air Temperature for Operation	-13...158 °F (-25...70 °C)
Electrical shock protection class	Class II IEC 61140
NEMA degree of protection	NEMA 12 UL 50 E NEMA 3 UL 50 E
Standards	IEC 60947-1 UL 508 IEC 60947-5-1 CSA C22.2 No 14 JIS C8201-5-1 JIS C8201-1
Vibration resistance	5 gn 2...500 Hz)IEC 60068-2-6
Shock resistance	50 gn 11 ms) half sine wave acceleration IEC 60068-2-27 30 gn 18 ms) half sine wave acceleration IEC 60068-2-27

Ordering and shipping details

Category	US10CS222464
Discount Schedule	0CS2
GTIN	3606480470264
Returnability	Yes
Country of origin	ID

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.8 in (7 cm)
Package 1 Width	1.3 in (3.2 cm)
Package 1 Length	1.3 in (3.2 cm)
Package 1 Weight	11.08 oz (314 g)

Product data sheet

Specifications



Monolithic pilot light, Harmony XB7, plastic, red, 22mm, integral LED, 110...120V AC

XB7EV04GP

Main

Range of Product	Harmony XB7
Product or Component Type	Pilot light
Device short name	XB7
Mounting diamete	0.9 in (22 mm)
Sale per indivisible quantity	10
Shape of signaling unit head	Round
Cap/operator or lens colour	Red
Light source	LED
Bulb base	Integral LED
[Us] Rated Supply Voltage	120 V AC 50/60 Hz
device presentation	Monolithic product

Complementary

Height	1.1 in (29 mm)
Width	1.1 in (29 mm)
Depth	2.1 in (54 mm)
Terminals description ISO n°1	(X1-X2)PL
Net Weight	0.04 lb(US) (0.02 kg)
Device mounting	Fixing hole 0.9 in (22.5 mm) 22.3 +0.4/0 IEC 60947-5-1
Fixing center	>= 30 x 40 mm support panel) metal 0.04...0.2 in (1...6 mm) >= 30 x 40 mm support panel) plastic 0.08...0.2 in (2...6 mm)
Fixing mode	Fixing nut beneath head 17.7...21.2 lbf.in (2...2.4 N.m)
Connections - terminals	Screw clamp terminals, <= 2 x 1.5 mm² with cable end IEC 60947-1 Screw clamp terminals, 1 x 0.22...2 x 2.5 mm² without cable end IEC 60947-1
Tightening torque	7.08...10.6 lbf.in (0.8...1.2 N.m) IEC 60947-1
Shape of screw head	Cross JIS No 1 Cross Philips no 1 Cross pozidriv No 1 Slotted flat Ø 4 mm Slotted flat Ø 5.5 mm
[Ui] rated insulation voltage	250 V 3)IEC 60947-1
[Uimp] rated impulse withstand voltage	6 kV IEC 60947-1

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Signalling type	Steady
Supply voltage limits	100...132 V AC
Current Consumption	18...21 mA
Service life	70000 h at rated voltage and 25 °C

Environment

protective treatment	TH
Ambient Air Temperature for Storage	-40...158 °F (-40...70 °C)
Ambient Air Temperature for Operation	-13...158 °F (-25...70 °C)
Overvoltage category	Class II IEC 60536
IP degree of protection	IP20 IEC 60529 rear face) IP65 IEC 60529 front face)
NEMA degree of protection	NEMA 4 UL 50 E NEMA 12 UL 50 E
Standards	IEC 60947-5-1 UL 508 IEC 60947-1 CSA C22.2 No 14 JIS C8201-5-1 JIS C8201-1
Vibration resistance	5 gn 2...500 Hz)IEC 60068-2-6
Shock resistance	50 gn 11 ms) half sine wave acceleration IEC 60068-2-27
Electromagnetic compatibility	Disturbing field emission class B conforming to IEC 55011

Product data sheet

Specifications



Monolithic pilot light, Harmony XB7, plastic, green, 22mm, integral LED, 110...120V AC

XB7EV03GP

Main

Range of Product	Harmony XB7
Product or Component Type	Pilot light
Device short name	XB7
Mounting diamete	0.9 in (22 mm)
Sale per indivisible quantity	10
Shape of signaling unit head	Round
Cap/operator or lens colour	Green
Light source	LED
Bulb base	Integral LED
[Us] Rated Supply Voltage	120 V AC 50/60 Hz
device presentation	Monolithic product

Complementary

Height	1.1 in (29 mm)
Width	1.1 in (29 mm)
Depth	2.1 in (54 mm)
Terminals description ISO n°1	(X1-X2)PL
Net Weight	0.04 lb(US) (0.02 kg)
Device mounting	Fixing hole 0.9 in (22.5 mm) 22.3 +0.4/0 IEC 60947-5-1
Fixing center	>= 30 x 40 mm support panel) metal 0.04...0.2 in (1...6 mm) >= 30 x 40 mm support panel) plastic 0.08...0.2 in (2...6 mm)
Fixing mode	Fixing nut beneath head 17.7...21.2 lbf.in (2...2.4 N.m)
Connections - terminals	Screw clamp terminals, <= 2 x 1.5 mm² with cable end IEC 60947-1 Screw clamp terminals, 1 x 0.22...2 x 2.5 mm² without cable end IEC 60947-1
Tightening torque	7.08...10.6 lbf.in (0.8...1.2 N.m) IEC 60947-1
Shape of screw head	Cross JIS No 1 Cross Philips no 1 Cross pozidriv No 1 Slotted flat Ø 4 mm Slotted flat Ø 5.5 mm
[Ui] rated insulation voltage	250 V 3)IEC 60947-1
[Uimp] rated impulse withstand voltage	6 kV IEC 60947-1

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Signalling type	Steady
Supply voltage limits	100...132 V AC
Current Consumption	18...21 mA
Service life	70000 h at rated voltage and 25 °C

Environment

protective treatment	TH
Ambient Air Temperature for Storage	-40...158 °F (-40...70 °C)
Ambient Air Temperature for Operation	-13...158 °F (-25...70 °C)
Overvoltage category	Class II IEC 60536
IP degree of protection	IP20 IEC 60529 rear face) IP65 IEC 60529 front face)
NEMA degree of protection	NEMA 4 UL 50 E NEMA 12 UL 50 E
Standards	UL 508 IEC 60947-5-1 IEC 60947-1 JIS C8201-5-1 CSA C22.2 No 14 JIS C8201-1
Vibration resistance	5 gn 2...500 Hz)IEC 60068-2-6
Shock resistance	50 gn 11 ms) half sine wave acceleration IEC 60068-2-27
Electromagnetic compatibility	Disturbing field emission class B conforming to IEC 55011

[ENM Counting Instruments](#) > [Electrical Counters](#) > [E6B Electrical Counter - Two-Hole Panel Mount](#) > [T14 DC Powered Hour Meter II.](#) > [T14 DC Powered Hour Meter I.](#) > [T18 AC Powered Hour Meter III.](#) > [T18 AC Powered Hour Meter II.](#) > [T32 AC/DC DIN Rail Mount Hour Meter](#) > [T40 Quartz DC Hour Meter](#) > [T40 3-Hole Quartz DC Hour Meter](#) > [T40 Square Mount Quartz DC Hour Meter II.](#) > [T41 Quartz DC Hour Meter II.](#) > [T41 Quartz DC Hour Meter I.](#) > [T50 Quartz AC Hour Meter I.](#) > [T50 Quartz AC Hour Meter II.](#) > Item # T50B2

Item # T50B2 T50 Quartz AC Hour Meter II.



T50 Quartz AC Hour Meter II.
T50 Quartz AC Hour Meter

Specifications

Series	T50
Display	6-Digit
Voltage	115 V AC
Reset	None
Size	1.68W x 1.68H x 1.26D Inch
Face Dia - Flange	2.80 Inch
Face Dia - Cutout	2 Inch
Weight	2 oz.
Mounting Style	3-Hole Panel
Power	Less than 0.4 W



USEMCO Incorporated
USEMCO
UNIVERSAL SANITARY EQUIPMENT MANUFACTURING COMPANY

Warranty Certificate

All control panels manufactured by USEMCO, Inc. are guaranteed to be free from defect in workmanship and material for a period of up to one year from the date the control panel is placed into operation by USEMCO's authorized personnel, but in no event is the control panel guaranteed for longer than 18 months from date of invoice.

Any part claimed defective will be either repaired or replaced, our option, when returned to our factory transportation charges paid. This guarantee only covers defects which have developed in the service for which the controls have designed.

The liability of the company shall not in any case exceed the cost of correcting defects in USEMCO's controls or parts, upon the above mentioned one year, all such liability shall terminate.

USEMCO shall not in any event be liable for indirect or consequential damages.

USEMCO, Inc.
Tomah, WI

Copy

**ASSIGNMENT AND ASSUMPTION
OF SANITARY SEWER SERVICE AGREEMENT**

THIS ASSIGNMENT AND ASSUMPTION OF SANITARY SEWER SERVICE AGREEMENT (the “Assignment”), is made as of _____, 2025 (the “Execution Date”) and effective as of the Closing Date (defined below), by and between **GREAT AMERICAN RESORTS, INC.**, a Minnesota business corporation (“Assignor”), **CSLC MILLE LACS RESORT LLC**, a Delaware limited liability company (“Assignee”), and consented to by the **CITY OF WAHKON**, a municipal corporation under the laws of the State of Minnesota (the “City”). For purposes of this Assignment, the term “Closing Date” means the date that Assignee closes on its acquisition of the Property (defined below) from Assignor.

RECITALS:

A. On April 4, 2023, the City and Assignor entered into that certain Sanitary Sewer Service Agreement, recorded with the Mille Lacs County Recorder on April 10, 2023 as Document Number A435762 (the “Agreement”), which encumbers certain real property legally described on **Exhibit A** attached hereto (the “Property”).

B. As part of a contemplated sale of the Property by Assignor to Assignee, Assignor desires to assign to Assignee, and Assignee desires to assume, all of Assignor’s rights, interests, duties, obligations and responsibilities under the Agreement.

C. Section 18 of the Agreement provides that Assignor may not assign the Agreement without the prior written consent of the City.

NOW THEREFORE, the parties hereby agree as follows:

1. **Assignment.** As of the Closing Date, Assignor hereby assigns all of its right, title, interest, equity in, and obligations under the Agreement to Assignee.

2. **Acceptance.** As of the Closing Date, Assignee hereby accepts the foregoing assignment from Assignor and agrees assume all of Assignor’s right, title, interest, equity in, and obligations under the Agreement.

3. **Representations and Warranties (Assignee)**. Assignee hereby represents and warrants that:

(a) Assignee has the power to enter into this Assignment and to perform all obligations under the Agreement and has not received written notice that it is in violation of any local, state or federal laws.

(b) Assignee is a Delaware limited liability company, authorized to operate under the laws of the State of Minnesota, and has full power and authority to enter into this Assignment.

(c) The execution, delivery and performance by Assignee of this Assignment and any other agreements relating to the assignment and assumption of the Agreement by Assignee have been duly authorized by all necessary action on the part of Assignee. The respective documents have been duly executed and delivered by Assignee and, assuming the due execution and delivery of said documents by the other parties, constitute the legal, valid and binding obligations of Assignee enforceable against Assignee in accordance with their respective terms.

4. **Representations and Warranties (Assignor)**. Assignor hereby represents and warrants that:

(a) Assignor has the power to enter into this Assignment and to perform all obligations under the Agreement and has not received written notice that it is in violation of any local, state or federal laws.

(b) Assignor is a Minnesota corporation, authorized to operate under the laws of the State of Minnesota, and has full power and authority to enter into this Assignment.

(c) The execution, delivery and performance by Assignor of this Assignment and any other agreements relating to the assignment and assumption of the Agreement by Assignor have been duly authorized by all necessary action on the part of Assignor. The respective documents have been duly executed and delivered by Assignor and, assuming the due execution and delivery of said documents by the other parties, constitute the legal, valid and binding obligations of Assignor enforceable against Assignor in accordance with their respective terms.

5. **Representations and Warranties (City)**. The City hereby represents and warrants that:

(a) The City has the power to enter into this Assignment and to perform all obligations under the Agreement and has not received written notice that it is in violation of any local, state or federal laws.

(b) The City is a municipal corporation, authorized to operate under the laws of the State of Minnesota, and has full power and authority to enter into this Assignment.

(c) The execution, delivery and performance by the City of this Assignment have been duly authorized by all necessary action on the part of the City. The respective documents have been duly executed and delivered by the City and, assuming the due execution and delivery

of said documents by the other parties, constitute the legal, valid and binding obligations of the City enforceable against the City in accordance with their respective terms.

6. **Notices.** Pursuant to Section 19 of the Agreement, from and after the Closing Date, any notice or correspondence to be given to Assignee under the Agreement shall be delivered to the following:

CSLC MILLE LACS RESORT LLC
c/o Legacy Communities
8800 E. Raintree Drive, Suite 330
Scottsdale, AZ 85260
Attn: Patrick O'Malley

7. **Consent.** In accordance with Section 18 of the Agreement, the City hereby consents to the assignment to, and assumption by, Assignee of the right, title, interest, equity in, and obligations of Assignor under the Agreement.

8. **Recording.** This Assignment shall run with the land and be recorded against the Property with the Mille Lacs County Recorder.

9. **Entire Agreement; Governing Law.** This Assignment represents the entire agreement of the parties pertaining to the assignment of the Agreement. This Assignment shall be interpreted and construed under the laws of the State of Minnesota, and shall be binding upon the parties, their heirs, successors, and assigns. Except for the assignment and assumption expressly contemplated herein, all terms and conditions of the Agreement shall remain in full force and effect.

10. **Duplicate Originals; Counterparts.** This Assignment may be executed in any number of duplicate originals and each duplicate original shall be deemed to be an original. This Assignment may be executed in several counterparts, each of which counterparts shall be deemed an original instrument and all of which together shall constitute a single agreement.

[SIGNATURE PAGES TO FOLLOW]

ASSIGNEE

CSLC MILLE LACS RESORT LLC,
a Delaware limited liability company

By: _____
Patrick O'Malley, Authorized Signatory

STATE OF WISCONSIN)
) SS
COUNTY VILAS)

On _____, 2025, before me,
_____, a Notary Public, personally
appeared **Patrick O'Malley** who proved to me on the basis of satisfactory evidence to be the
person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that
he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their
signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted,
executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Wisconsin that the
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

THE CITY

THE CITY OF WAHKON,
a Minnesota municipal corporation

By: _____
Mayor

By: _____
City Clerk-Treasurer

STATE OF MINNESOTA)
) ss.
COUNTY OF MILLE LACS)

The foregoing instrument was acknowledged before me this ____ day of _____, 2025, by _____, the mayor of the city of Wahkon, a Minnesota municipal corporation, on behalf of the municipal corporation.

Notary Public

STATE OF MINNESOTA)
) ss.
COUNTY OF MILLE LACS)

The foregoing instrument was acknowledged before me this ____ day of _____, 2025, by _____, the city clerk-treasurer of the city of Wahkon, a Minnesota municipal corporation, on behalf of the municipal corporation.

Notary Public

This document drafted by:

Kennedy & Graven, Chartered
700 Fifth Street Towers
150 South Fifth Street
Minneapolis, MN 55402
(612) 337-9300

EXHIBIT A

Government Lots 2 and 3 in Section 18, Township 42 North, Range 25 West, except for that portion of Government Lot 2 platted as Mi-Nis Terrace, and except that part of Government Lot 2, Section 18, Township 42 North, Range 25 West, described as follows:

Beginning at the intersection of the centerline of East Moose Lane and the northeasterly extension of the Northwesterly line of Lot 1, Block 2, all being in Mi-Nis Terrace according to the recorded plat thereof; thence on an assumed bearing of North 24 degrees 04 minutes 29 seconds West, along the northwesterly extension of the said centerline of East Moose Lane (now known as Arrowhead Road), 254.04 feet; thence North 19 degrees 05 minutes 15 seconds West, a distance of 233.84 feet; thence northwesterly along a tangential curve concave to the southwest, 128.67 feet to a point of compound curvature, said curve has a radius of 131.66 feet and a central angel of 55 degrees 59 minutes 49 seconds; thence westerly along a 672.67 foot radius curve, central angle of 10 degrees 44 minutes 28 seconds, 126.11 feet; thence North 85 degrees 49 minutes 33 seconds West, tangent to last described curve, 84.58 feet; thence South 23 degrees 54 minutes 29 seconds East, a distance of 380.44 feet; thence South 66 degrees 05 minutes 31 seconds West, a distance of 110.00 feet; thence South 23 degrees 54 minutes 29 seconds, a distance of 218.46 feet; thence North 89 degrees 59 minutes 53 seconds West; a distance of 59.10 feet; thence South 0 degrees 00 minutes 07 seconds West, a distance of 96.00 feet; thence South 89 degrees 59 minutes 53 seconds, a distance of 221.99 feet; thence South 23 degrees 54 minutes 29 seconds East, a distance of 397.84 feet to its intersection with the southwesterly extension of the southeasterly line of Lot 11, said Block 2; thence North 65 degrees 55 minutes 31 seconds East, along said southwesterly extension, 90.70 feet to the southwest corner of said Lot 11; thence North 24 degrees 04 minutes 29 seconds West, along the southwesterly line of said Block 2, 440.00 feet to the northwest corner of said Lot 1; thence North 65 degrees 55 minutes 31 seconds East, along the northwesterly line of said Lot 1, 120.00 feet to the point of beginning.

AND EXCEPT THE West 650 FT OF GOV LOT 3, SECTION 18, TOWNSHIP 42, RANGE 25.

(Abstract Property)

(Parcel Number 08-018-0201)

Exhibit A
to
Assignment and Assumption of Sanitary Sewer Service Agreement

Reports

STAFF REPORT

Community: City of Wahkon	Month: October
Agenda Section: Reports	Item: Community Development Report

PREVIOUS PLANNING COMMISSION REVIEW OR ACTION: The Planning Commission held a meeting on Monday, September 29th with two public hearings for conditional use permit applications. After review and public comments, the Commission recommended moving both applications forward for approval at the October 13th Council meeting.

ISSUED ZONING PERMITS:

- No general zoning permits issued.

OTHER ACTIVITY:

- General planning and zoning questions.
- Conditional Use Permit Application for a commercial restaurant for a vacant building on main street.
- Conditional Use Permit Application for a salon and spa on main street.

POTENTIAL PERMITS OR ACTIONS REQUESTED: None.

ATTACHMENTS:

- YTD Permit list.

2025 Land Use Permits

Permit #	Date Approved	PID #	Last Name	Address	Description	Fee
P01-25	1/9/2025	25-040-0830	Feierabend	251 North Main Street	Child Advocacy Center Remodel	\$100.00
P02-25	1/15/2025	25-561-0730	Bushinski	1480 Lakeshore BLVD	SF house (42'x62' 2,256 square feet)	\$175.00
P03-25	3/24/2025	25-520-0170	Rich	815 Hwy 27	Deck addition (1248 sq ft & 280 sq ft)	\$100.00
P04-25	4/23/2025	25-041-0420	Vivant	615 Hwy 27	Accessory Shed	\$85.00
P05-25	4/29/2025	25-562-0100	Wimmergren	415 Bennett Street Unit 12	10'x12' Patio and 6' x 8' Fence	\$85.00
P06-25	4/29/2025	25-562-0090	Wehking	415 Bennett Street Unit 11	10'x12' Patio and 6' x 8' Fence	\$85.00
P07-25	4/29/2025	25-562-0080	Milless	415 Bennett Street Unit 10	10'x12' Patio and 6' x 8' Fence	\$85.00
P08-25	5/22/2025	25-561-0010	Lundquist	2725 Lakshore Drive	To place a 10'x38' Recreational vehicle on property	\$125.00
P09-25	9/3/2025	25-561-0080	Braaten	2415 Lakeshore Blvd	Two additions attached garage(32x32) to the house and a detached garage (24x24)	\$300.00
P10-25	7/31/2025	25-561-0720	McConville	1430 Lake Shore Blvd	To construct a 50' fence on west property line	\$100.00
P11-25	8/11/2025	25-561-0262	Greenwaldt	1765 Lake Shore Blvd	Permit Extension for new construction of home	N/A
P12-25						

2025 CUP/IUP

Permit #	Date Received	PID #	Last Name	Commercial Name	Address	Description	Fee
CUP01-25	9/10/2025	25-040-0470	Jensen	Lake Haven Beauty & Spa	260 North Main St	To operate a hair salon & spa	\$500.00
CUP02-25	9/10/2025	25-040-0950	Perez	El Limon LLC	185 North Main St	To operate a Commerical Restaurant	\$500.00
CUP03-25							