Alternate Operation Relay

61F-AN/-APN2

CSM_61F-AN_-APN2_DS_E_4_3

Increases Motor Life and Enables Operating Only One Pump When Cleaning Tanks or as an Emergency Measure for Pump Failures.

- Electronic Relay with the same operation as the G4Q Latching Relay. Compared with the G4Q, the 61F-AN/-APN2 has a shorter power supply application time and no restrictions on mounting direction.
- Compact Models (61F-AN) and Compact Plug-in Models (61F-APN2) available.

Note: A changeover switch must be included in the sequence to enable operating only one pump.

⚠ Refer to *Safety Precautions for Floatless Level Controllers*.

■ Ordering Information

Type	Model
Alternate Operation Relay	61F-AN
	61F-APN2

Note: When ordering, specify the desired operating voltage at the end of the model number.

Example: 61F-AN [220VAC]

Desired supply voltage

■ Specifications

Ratings

Supply voltage	100, 110, 200, 220 VAC; 50/60 Hz
Operating voltage range	85% to 110% of rated voltage
Power consumption	3 VA
Accessories	Hold-down clip PFC-N8 *

* Hold-down clip PFC-N8 is attached only 61F-APN2.

Contact Ratings (with G2RK Keep Relay)

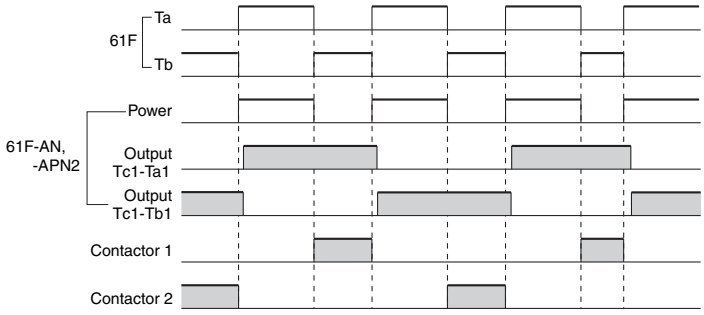
Item	Resistive load (cosϕ = 1)	Inductive load (cosϕ = 0.4, L/R = 7 ms)
Max. load	3 A at 250 VAC	1.5 A at 250 VAC
Carry contact	3 A	
Max. operating current	3 A	
Max. switching capacity	750 VA	375 VA

Characteristics

Response time	Operate: 25 ms max. Release: 30 ms max.
Minimum pulse width	Min. ON time: 40 ms min. Min. OFF time: 200 ms min.
Insulation resistance	100 MΩ min. at 500 VDC (between each terminal and power supply)
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min (between each terminal and power supply)
Vibration resistance	10 to 55 Hz, 1-mm double amplitude
Shock resistance	10 G (approx. 98 m/s^2)
Life expectancy	Mechanical: 1,000,000 operations (at operating frequency of 1,800 operations/hour) Electrical: 100,000 operations min. (rated load)
Ambient temperature	Operating: –10 to 55°C
Ambient humidity	Operating: 45% to 85% RH
Weight	61F-AN: Approx. 215 g 61F-APN2: Approx. 190 g

Time Chart for Alternate Operation of Water Supply

When the 61F-A□ Alternate Operation Relay is combined with a Floatless Level Switch, the Relay output contacts switch (break) while the contactor is engaged. The Relay output contacts will not switch simultaneously with engaging the contactor. In other words, the contactor or other load is switched with the output contacts from the Floatless Level Switch, not directly with the output contacts from the 61F-A□ Alternate Operation Relay. Using water supply as an example, after the control level is reached and the 61F Controllers' NC contacts turn OFF (break), the Relay's output contacts switch. The next time the 61F Controller's NC contacts turn ON, the output contacts have already switched. Thus, only the continuous carry current needs to be considered for the load capacity of the 61F-APN2, enabling application to the rated carry current of 3 A.

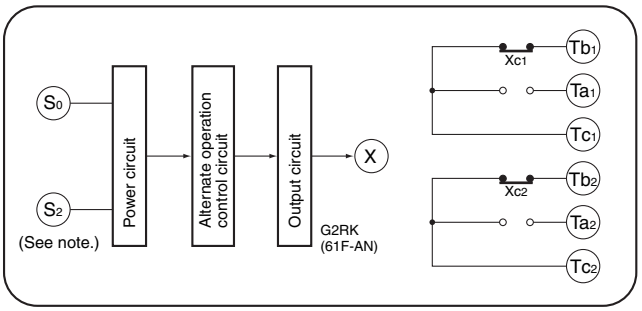


61F-AN (Compact Model)

Used in combination with a 61F-G□N Floatless Level Switch.

Operation

- The 61F-AN is used in combination with a Floatless Level Switch for alternate operation when using two pumps for level control in one location.
- When power is applied to the input terminals S_0 and S_2, NO contacts Tc_1 and Ta_1, and NO contacts Ta_2 and Tc_2 are turned ON via the alternate operation control circuit and the output circuit. This state is held with a magnetic lock even if the power supply is turned OFF.
- When power is applied to the input terminals again, the NO contacts are turned OFF and the NC contacts Tc_1 and Tb_1 and NC contacts Ta_2 and Tc_2 are turned ON. This state is held with a magnetic lock even if the power supply is turned OFF.
- The above operation is repeated each time the power supply is turned ON.
  (Power Supply Pulse Response Method)



Note: The above diagram is for a rated voltage of 200 or 220 VAC. Power is supplied to S_0 and S_1 for 100 or 110 VAC.

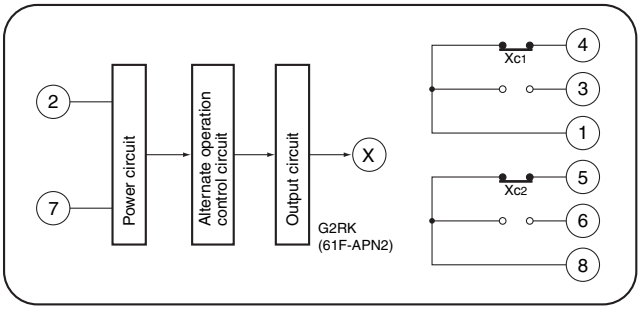
Connections (Refer to connection diagram.)

61F-APN2 (Compact Plug-in Model)

Used in combination with a Floatless Level Switch.

Operation

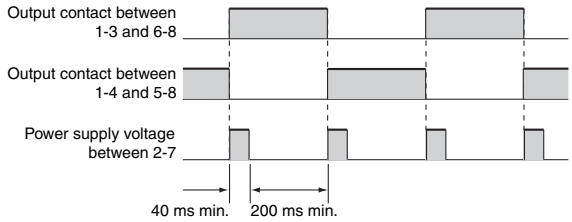
- The 61F-APN2 is used in combination with a Floatless Level Switch for alternate operation when using two pumps for level control in one location.
- When power is applied to the input terminals 2 and 7, NO contacts 1 and 3, and NO contacts 6 and 8 are turned ON via the alternate operation control circuit and the output circuit. This state is held with a magnetic lock even if the power supply is turned OFF.
- When power is applied to the input terminals again, the NO contacts are turned OFF and the NC contacts 1 and 4 and NC contacts 5 and 8 are turned ON. This state is held with a magnetic lock even if the power supply is turned OFF.
- The above operation is repeated each time the power supply is turned ON.
  (Power Supply Pulse Response Method)



Note: Refer to *Connecting Sockets, Mounting Brackets, DIN Rails* for the applicable Sockets.

Connections (Refer to connection diagram.)

- Connect output terminal Ta in the 61F-G example (page 5) to input terminal 2 on the 61F-APN2.
- Connect coil terminal A on each of the two contactors to the switching contact terminals 3 and 4 on the 61F-APN2.
- Use the switching contact terminals 5 and 6 on the 61F-APN2 to control the operation of the two pumps.
- The power supply of the 61F-APN2 is 100, 110, 200, or 220 VAC. Be sure to use the correct power supply.



■ Connections

Combining with the 61F-GN

61F-AN

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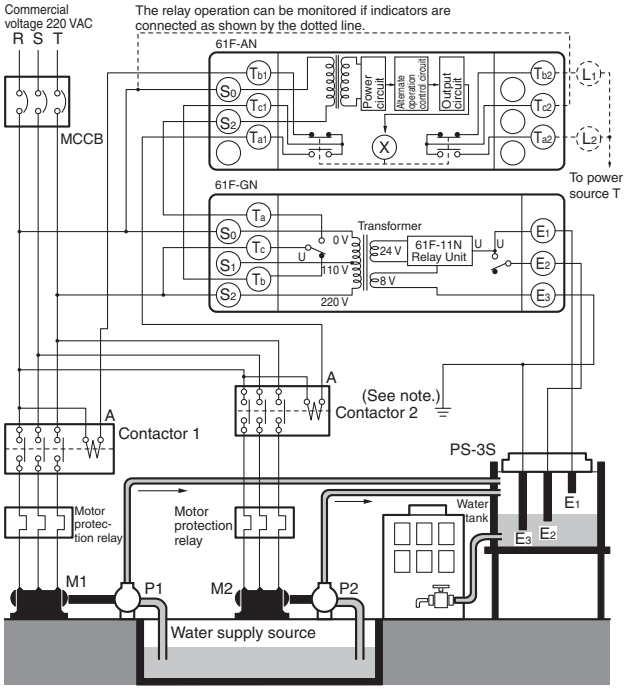
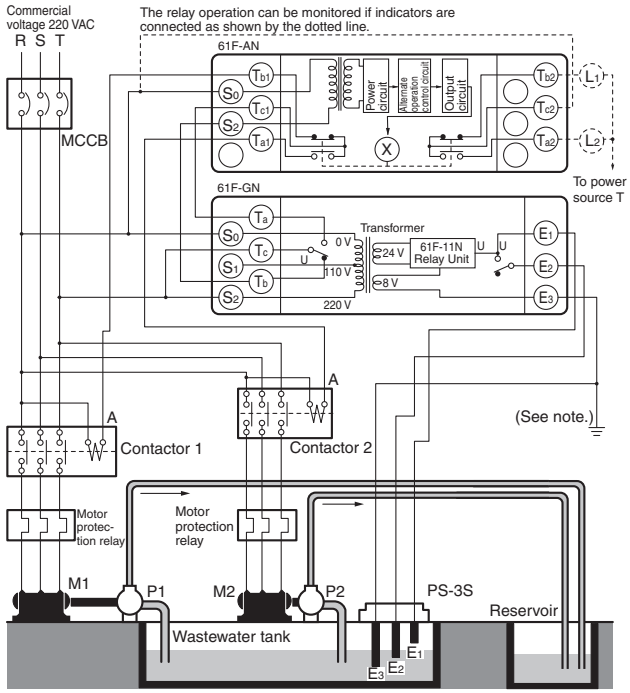
Combining with the 61F-GN

Water Supply



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

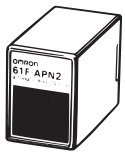
Drainage



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Combining with the 61F-G

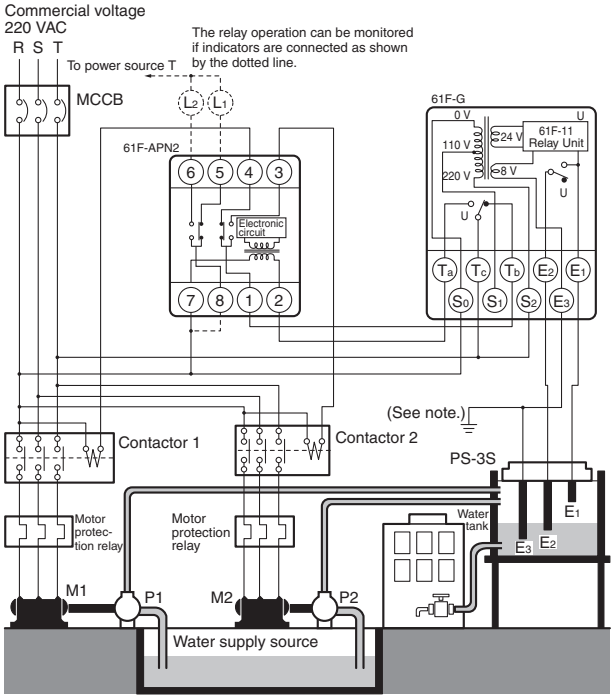
61F-APN2



Dimensions: page 17

Combining with the 61F-G

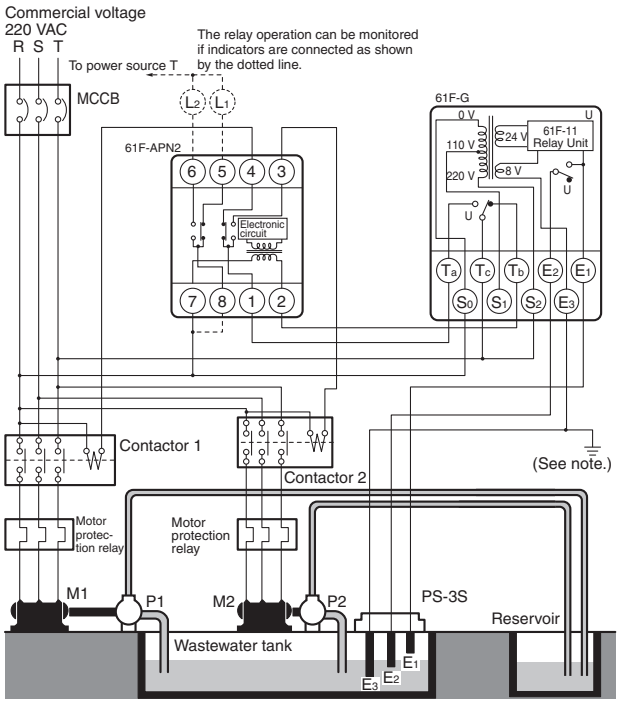
Water Supply



Connection Sockets
PF083A (Front-connecting)
PL08 (Rear-connecting)

Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Drainage

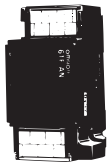


Connection Sockets
PF083A (Front-connecting)
PL08 (Rear-connecting)

Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Combining with the 61F-G1N

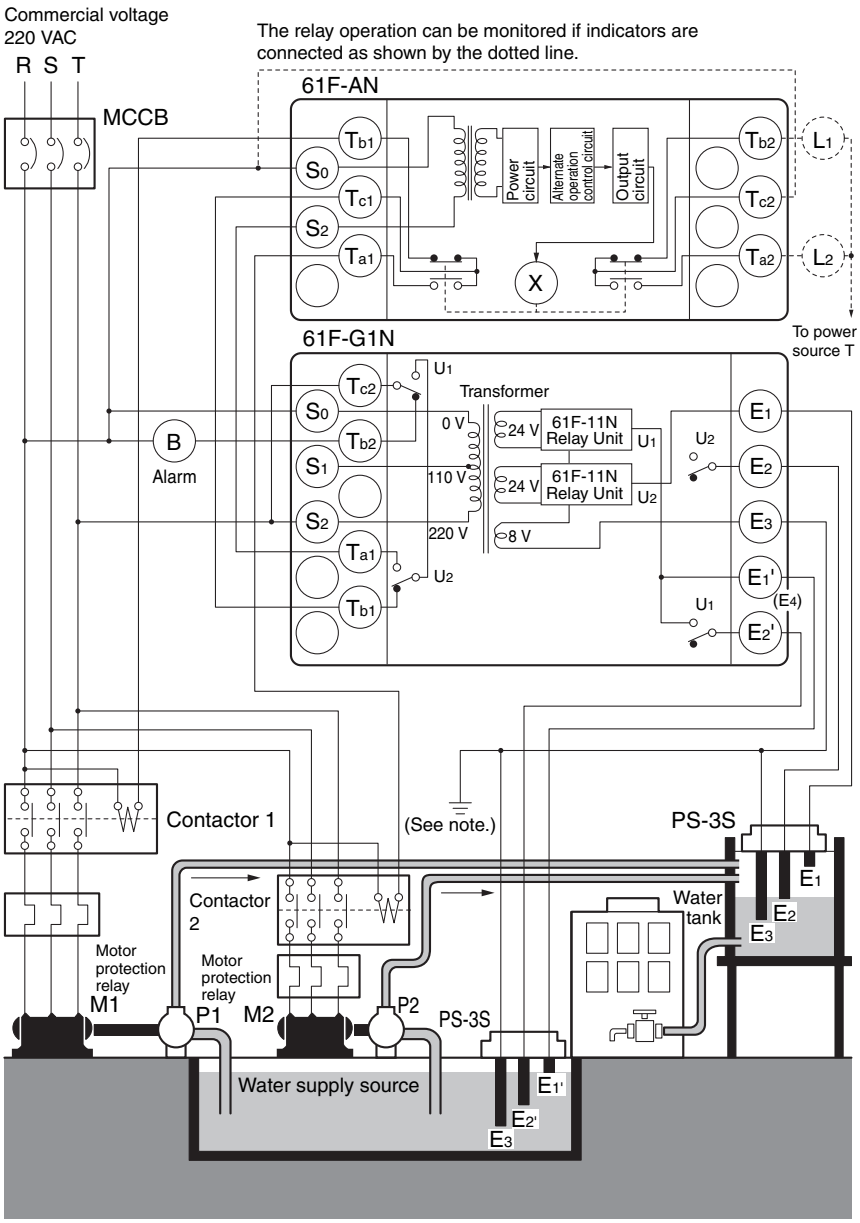
61F-AN



Dimensions: page 17

Combining with the 61F-G1N

Water Supply



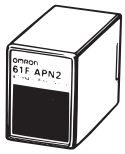
Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Drainage

The 61F-G1N is to be used only for supplying water and cannot be used for alternate operation for controlling drainage.

Combining with the 61F-G1

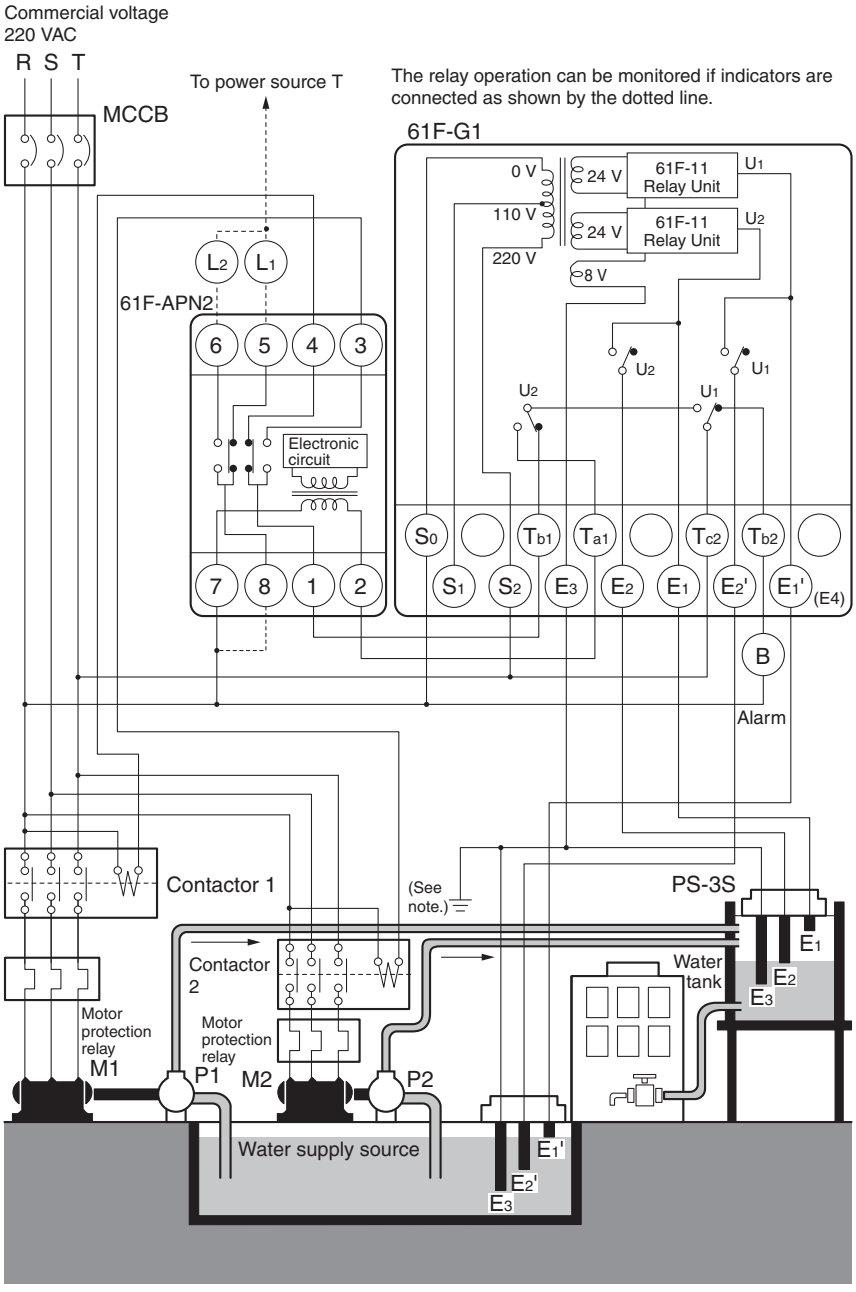
61F-APN2



Dimensions: page 17

Combining with the 61F-G1

Water Supply



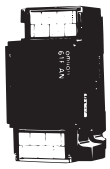
Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Water Drainage

The 61F-G1N is to be used only for supplying water and cannot be used for alternate operation for controlling drainage.

Combining with the 61F-G2N

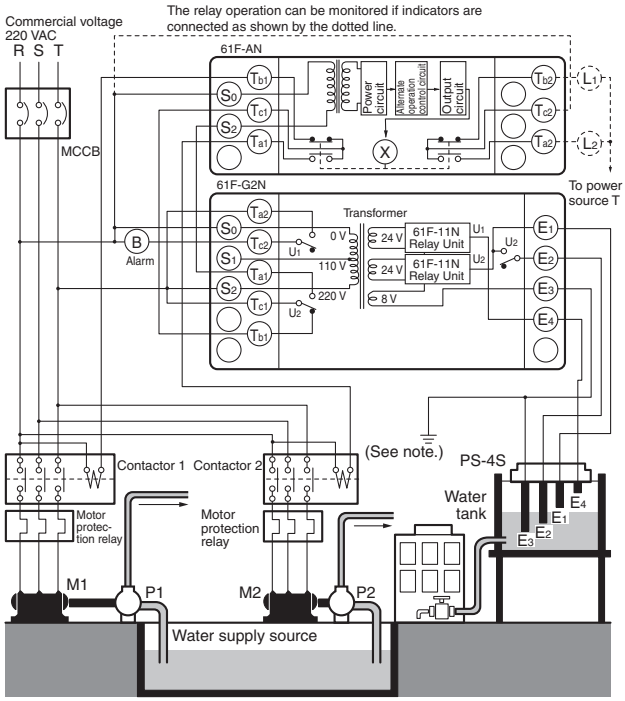
61F-AN



Dimensions: page 17

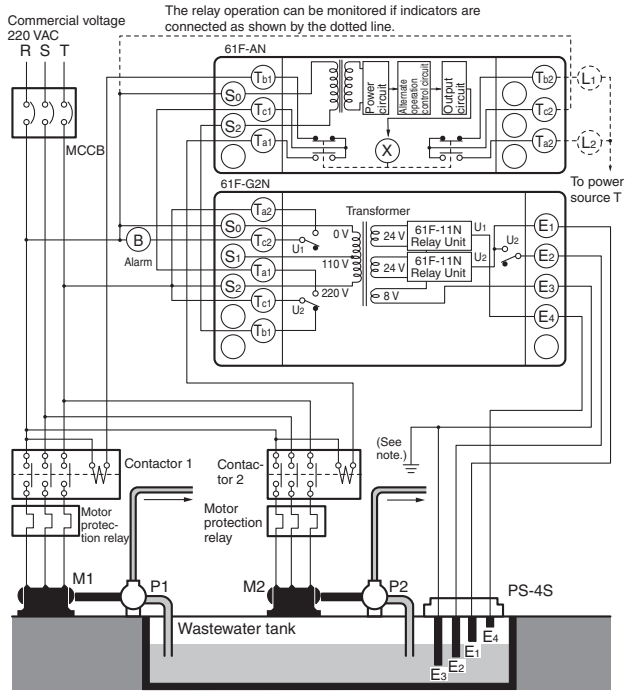
Combining with the 61F-G2N

Water Supply



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

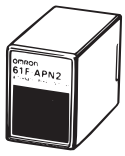
Drainage



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Combining with the 61F-G2

61F-APN2



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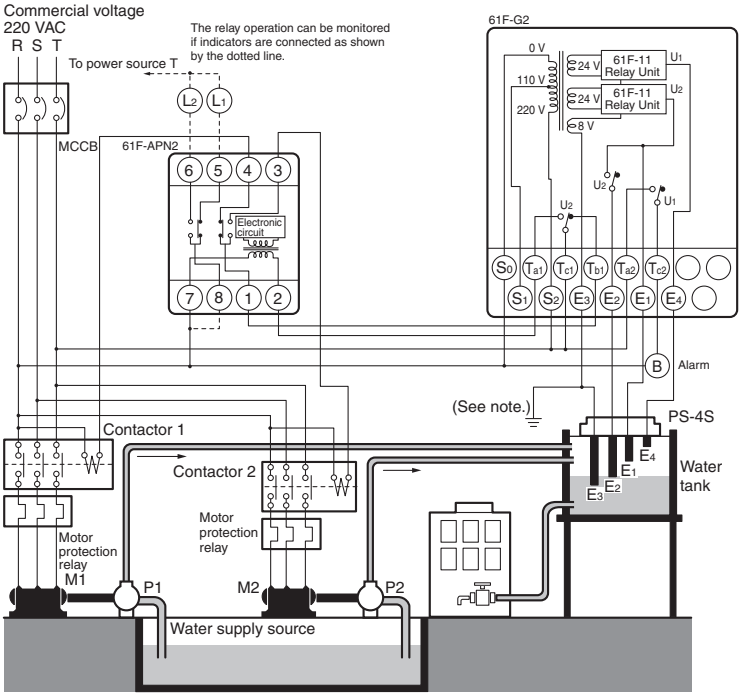
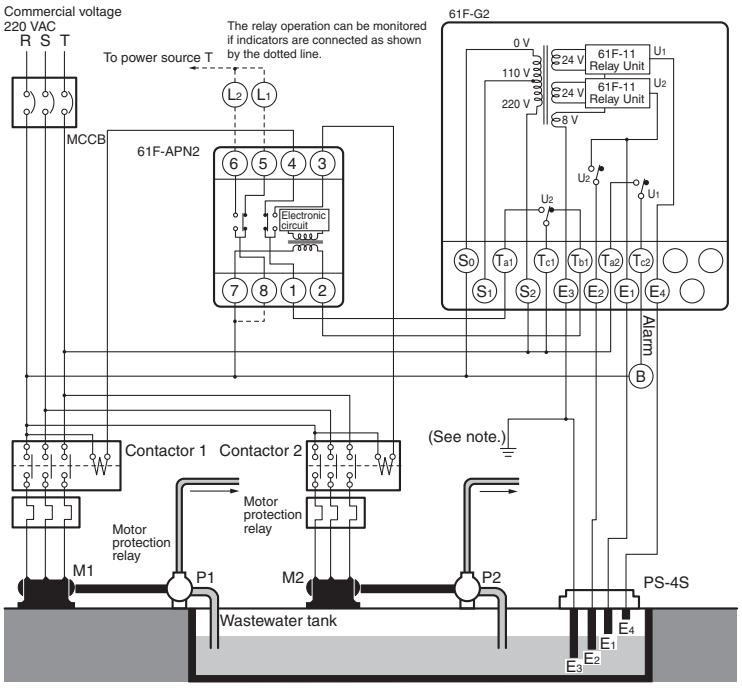
Combining with the 61F-G2

Water Supply



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

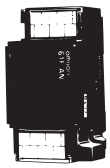
Drainage



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Combining with the 61F-G3N

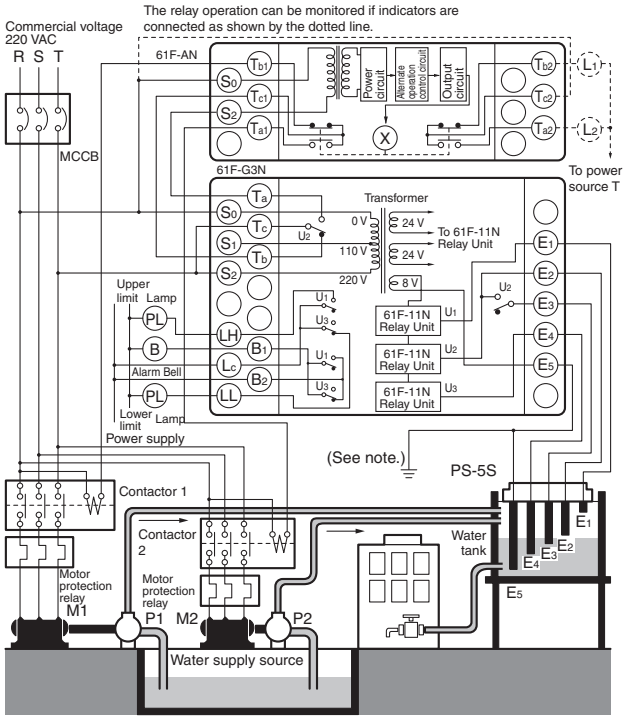
61F-AN



Dimensions: page 17

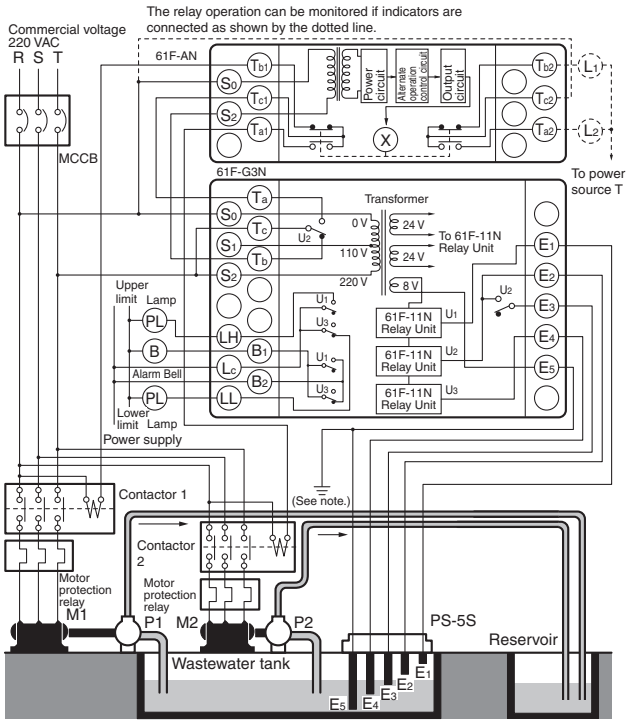
Combining with the 61F-G3N

Water Supply



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

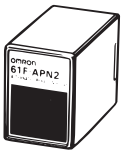
Drainage



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Combining with the 61F-G3

61F-APN2



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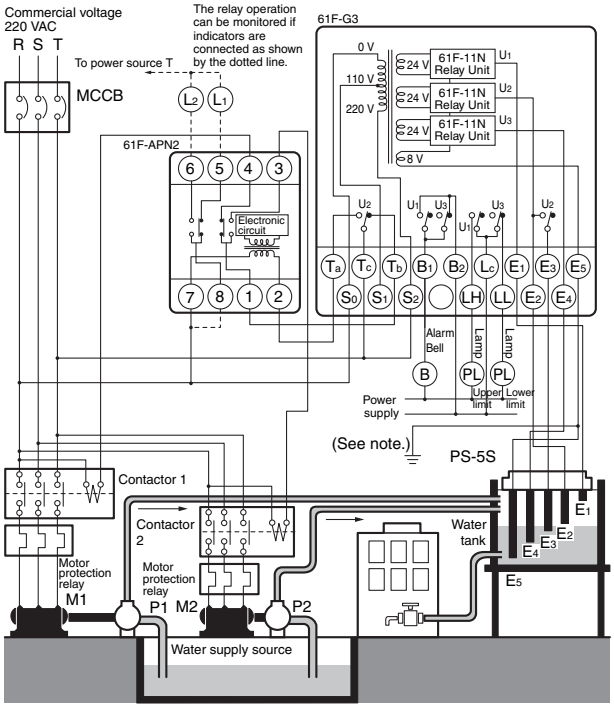
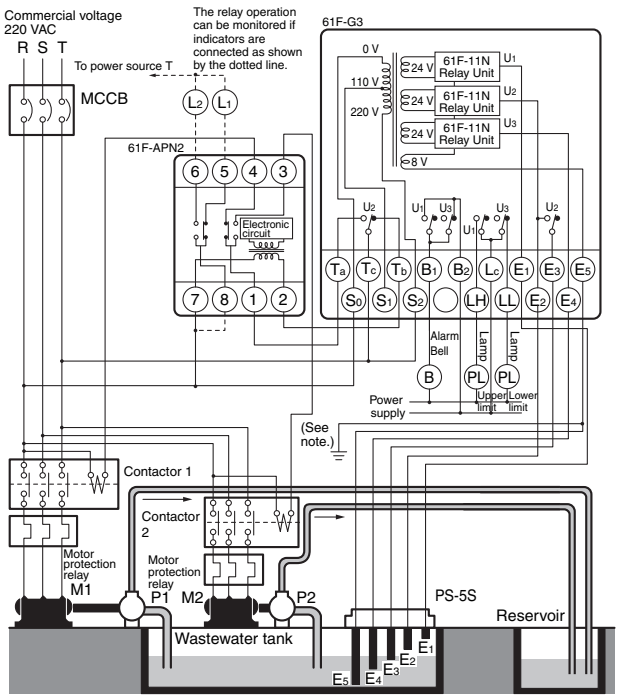
Combining with the 61F-G3

Water Supply



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

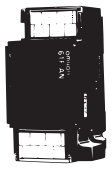
Drainage



Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Combining with the 61F-G4N

Alternate Operation Relay
61F-AN



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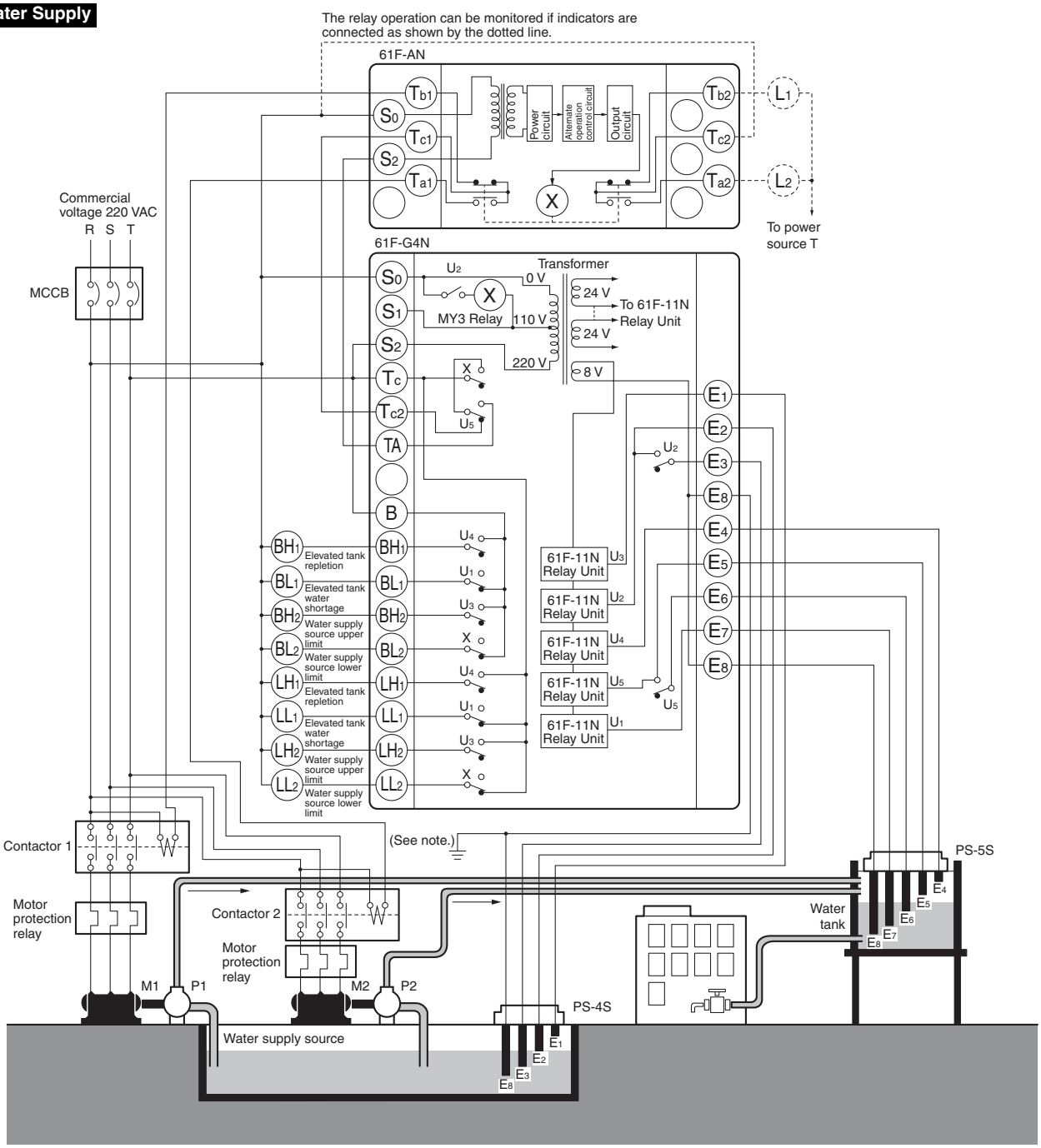
Combining with the 61F-G4N

Water Supply



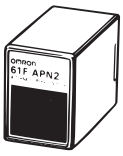
Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Drainage

The 61F-G4N is to be used only for supplying water and cannot be used alternately for controlling drainage.

Combining with the 61F-G4

Alternate Operation Relay
61F-APN2



Dimensions:
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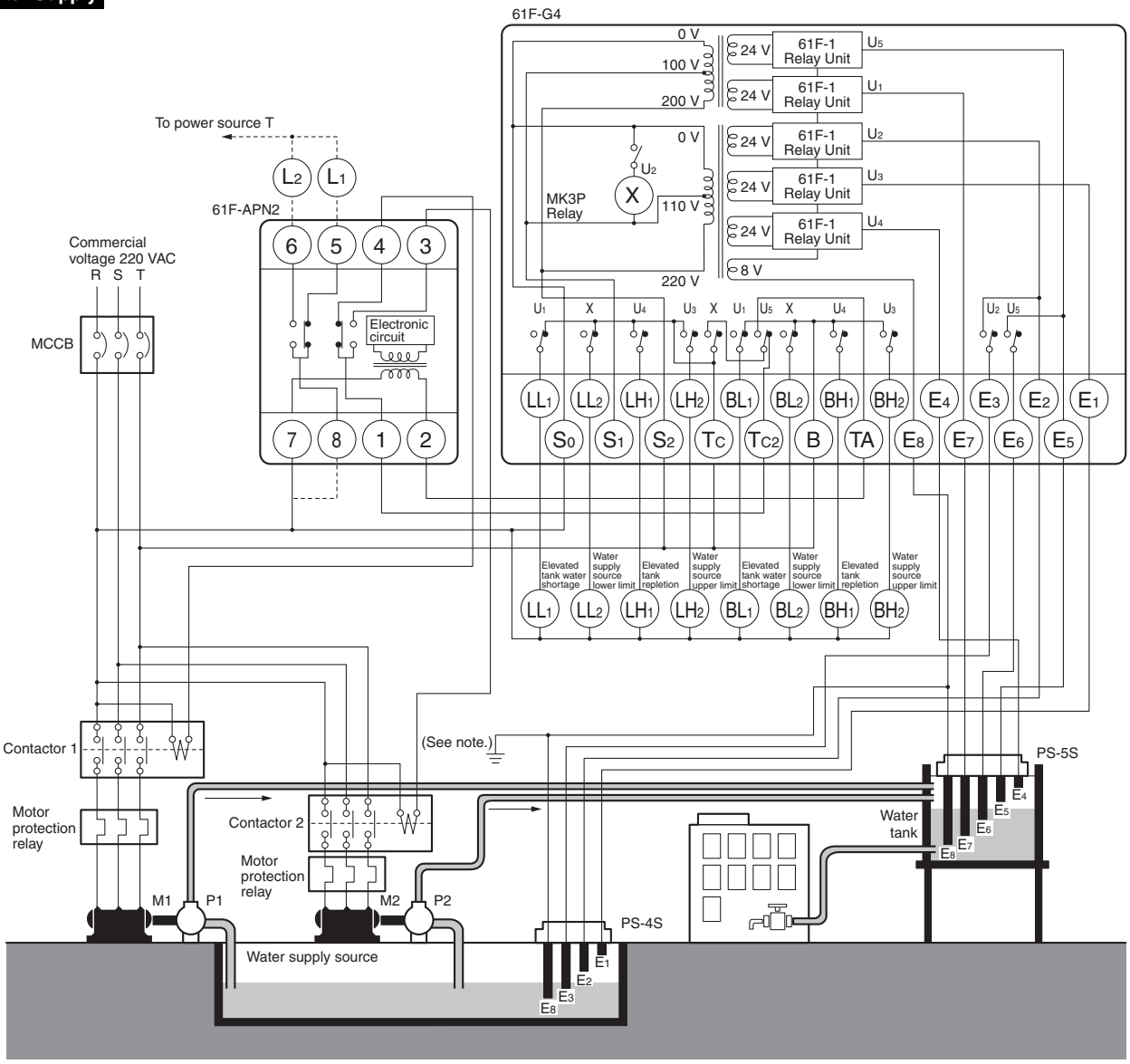
Combining with the 61F-G4

Water Supply



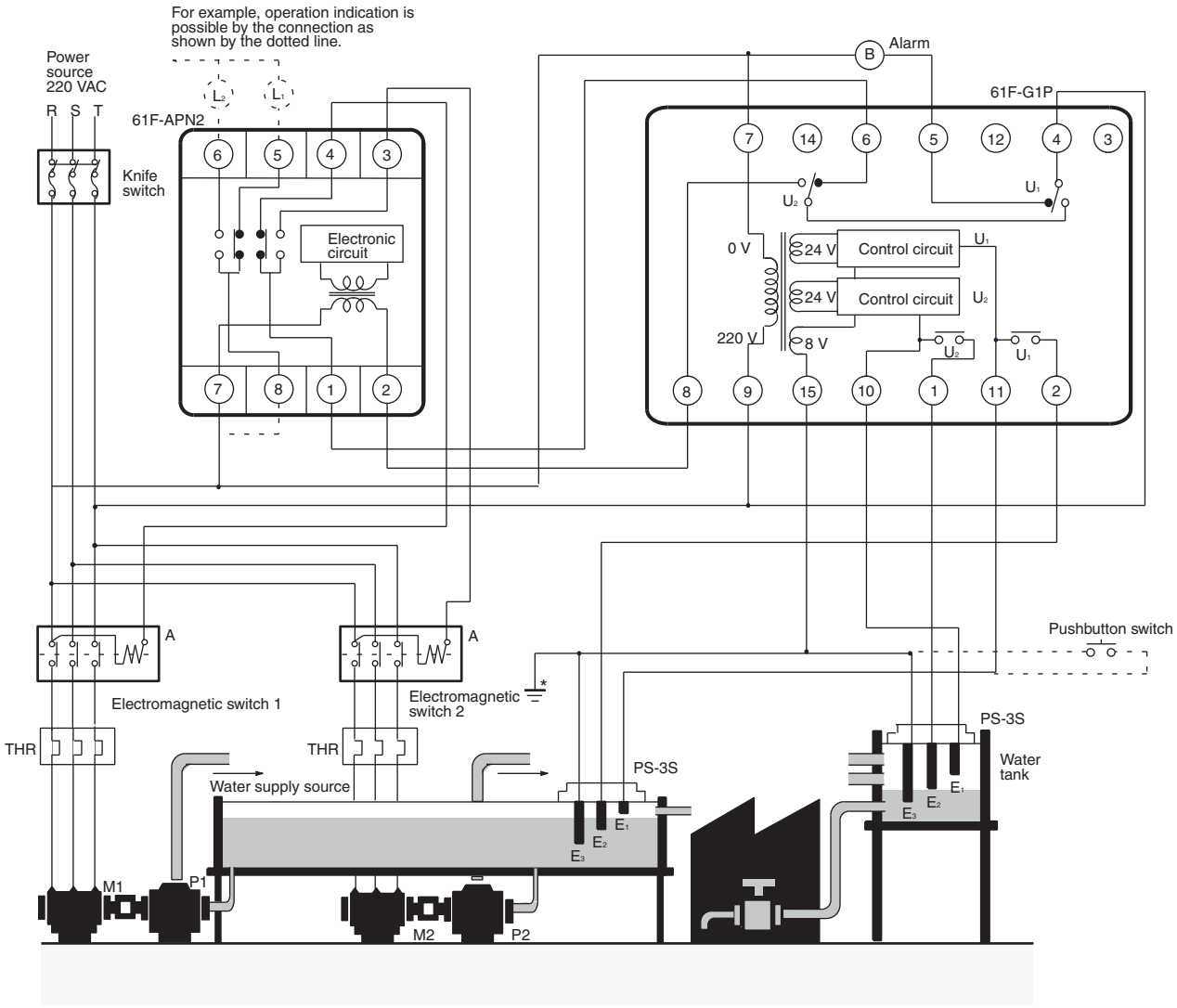
Note: Be sure to ground the common Electrode E_3 (the longest Electrode).

Drainage

The 61F-G4N is to be used only for supplying water and cannot be used alternately for controlling drainage.

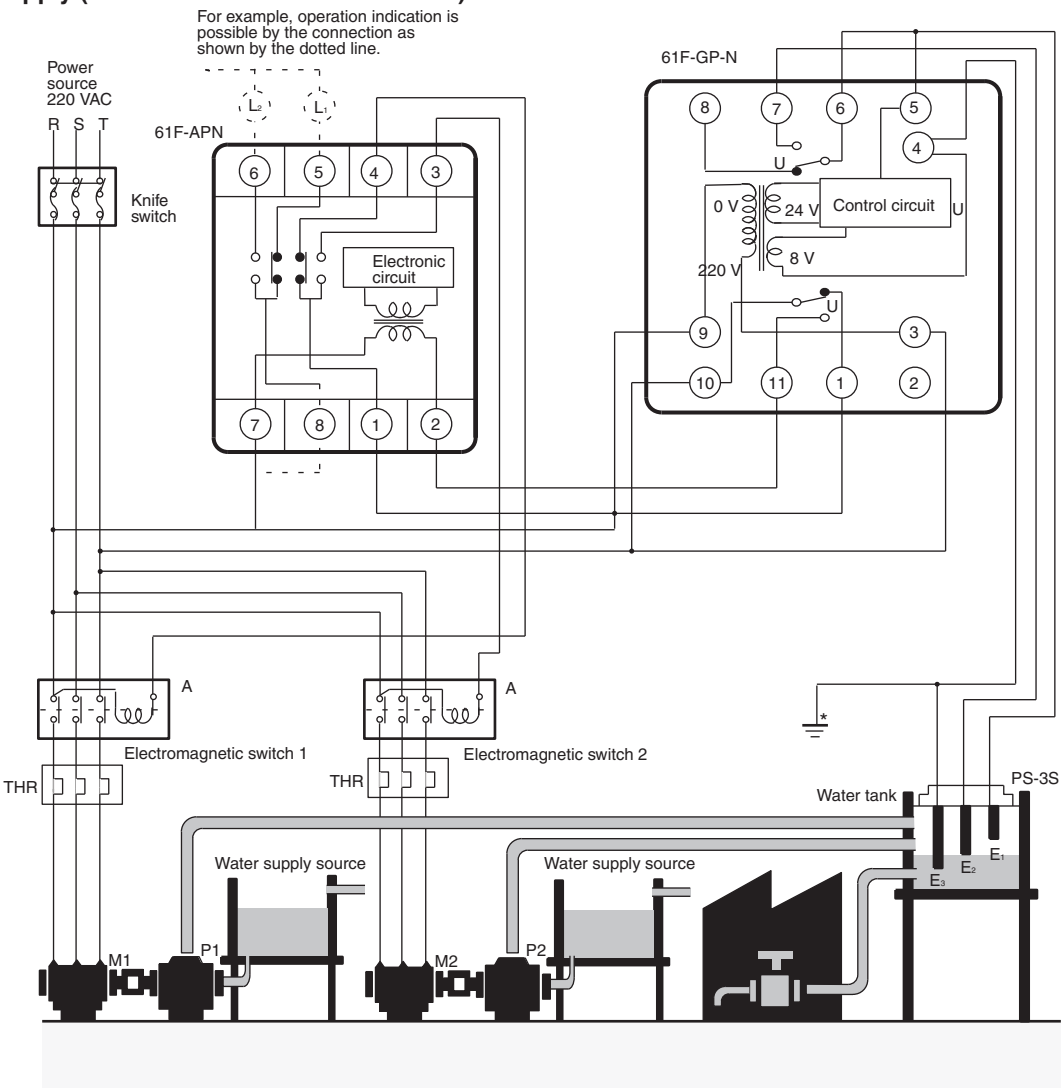
At 220 VAC

Water Supply (When Combined with 61F-G1P)



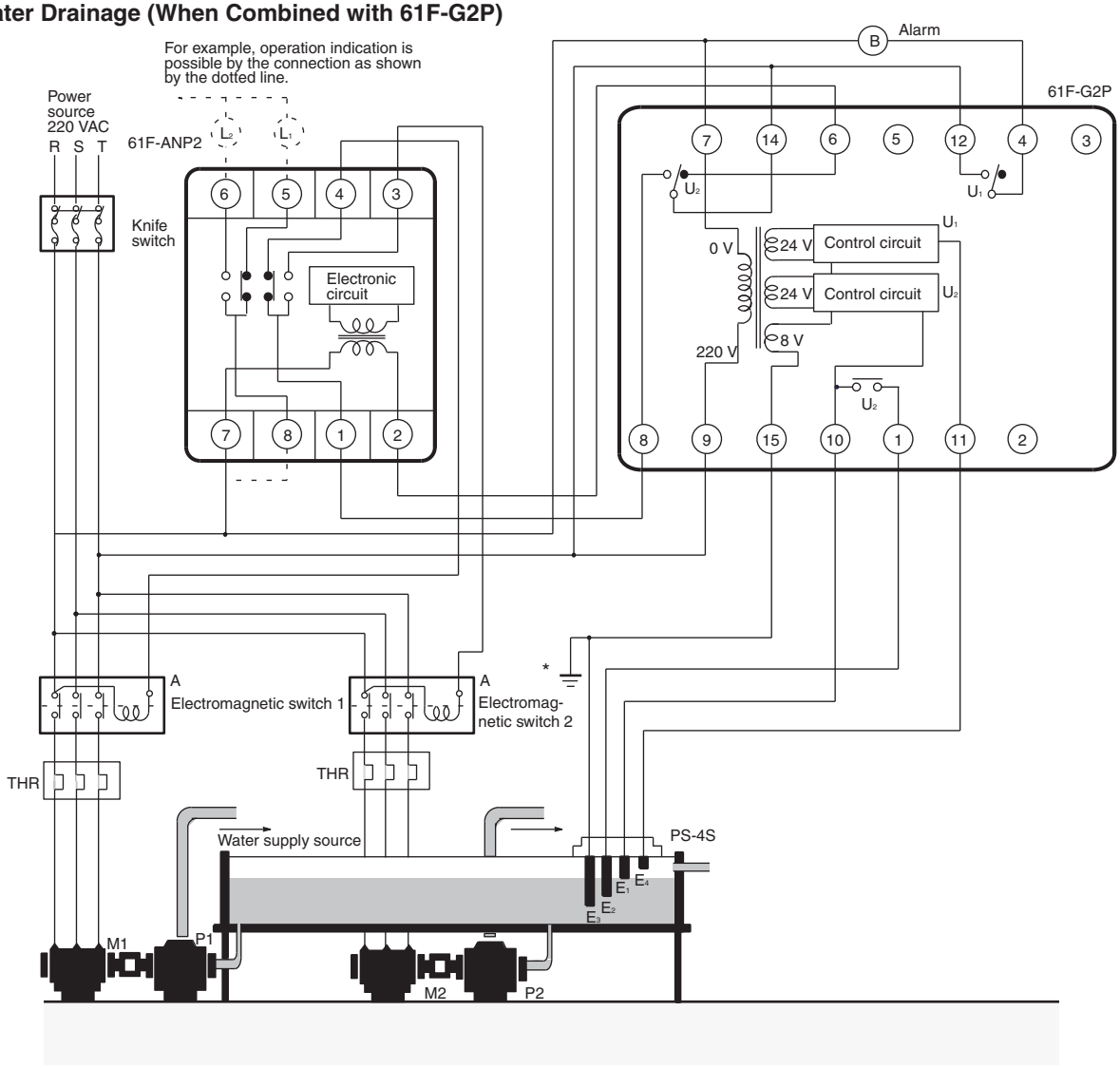
*Be sure to ground terminal 15.

Water Supply (When Combined with 61F-GP-N)



*Be sure to ground terminal 4.

Water Drainage (When Combined with 61F-G2P)

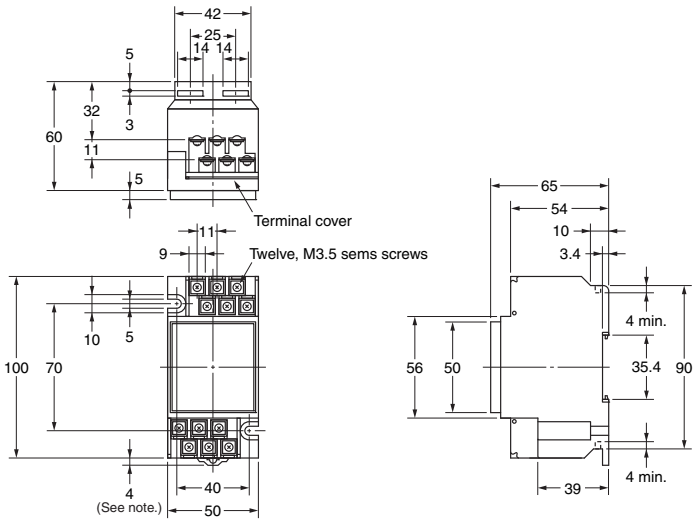


*Be sure to ground terminal 15.

Dimensions

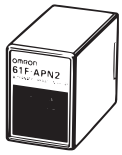
Note: All units are in millimeters unless otherwise indicated.

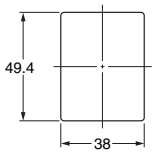
61F-AN

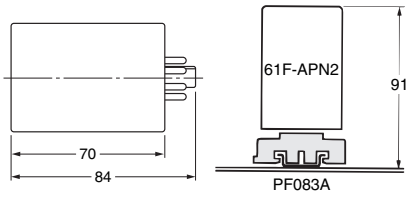


Note: Dimensions are with the DIN rail mounting (sliding) bracket attached.

61F-APN2

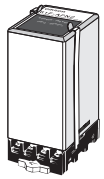


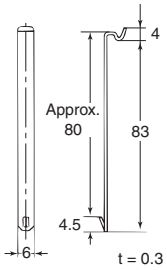




Use a PFC-N8 Mounting Bracket to mount the Level Controller to a PF083A Rail-mounted Socket.

PFC-N8





Note: PFC-N8 Mounting Bracket (provided with the Level Controller)

■ Safety Precautions

Refer to *Safety Precautions for All Level Controllers*.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

In the interest of product improvement, specifications are subject to change without notice.

Terms and Conditions Agreement

Read and understand this catalog.
Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranties.
(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.
(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE
PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.
Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.
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