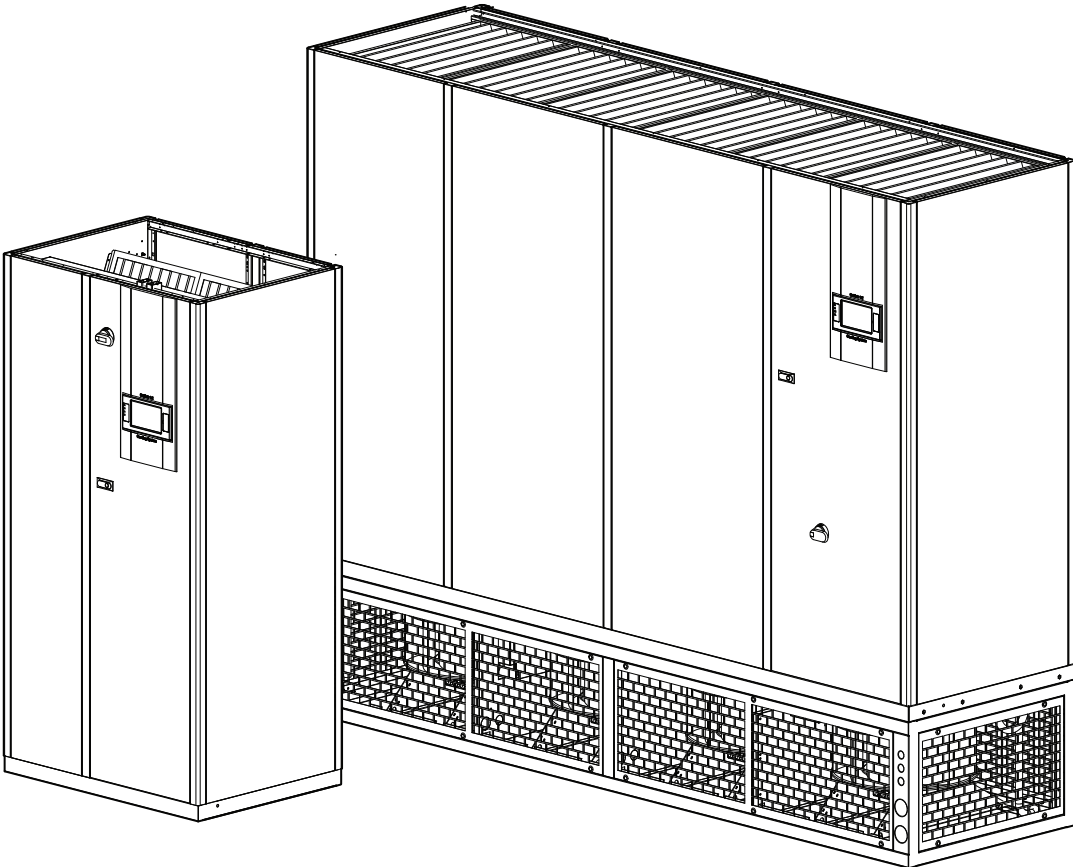


Installation Manual

Uniflair™ LE Accessories

990-5565A-001

Publication Date: June 2015



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Table of Contents

| | |
|---|-----------|
| Safety | 1 |
| Important Safety Information | 1 |
| General Information | 2 |
| Overview..... | 2 |
| Companion Manuals..... | 2 |
| Uniflair Floor Stands | 3 |
| Fixed Floor Stands | 4 |
| Seismic Floor Stands | 5 |
| Uniflair Plenums | 7 |
| 20-in. Return Plenum (Non-Stackable)..... | 7 |
| 12-in. Plenum (Stackable Up To 48 in.) | 8 |
| 20-in. Front Supply Plenum w/ Grille | 9 |
| Uniflair Sub-Bases | 11 |
| 8-in. Sub-Base for Piping | 11 |
| 20-in. Sub-Base for Piping | 12 |
| 20-in. Sub-Base (Front Supply w/ Grille) | 13 |
| Damper Utilization | 15 |
| Overview..... | 15 |
| Air Flow Directions | 15 |
| Motorized Damper | 15 |
| Inventory | 15 |
| Installation | 15 |
| Configuration using the LED display | 17 |
| Configuration using the touchscreen display | 17 |

| | |
|----------------------|----|
| Gravity Damper | 18 |
| Inventory | 18 |

Condensate Pumps19

| | |
|--|----|
| Overview | 19 |
| Important Safety Information | 19 |
| Component Identification | 20 |
| Pump Models and SKUs | 20 |
| Installation | 21 |
| Piping connections | 21 |
| Wiring connections | 22 |
| Configuration using the LED display interface | 24 |
| Configuration using the touch screen display interface | 25 |
| Pump test | 25 |
| Operation | 25 |
| Troubleshooting | 25 |

Smoke and Fire Sensors27

| | |
|--|----|
| Inventory | 27 |
| Installation | 27 |
| Configuration using the LED display interface | 32 |
| Configuration using the touch screen display interface | 32 |
| 24 V Relay for External Smoke/Fire Alarm | 33 |
| Inventory | 33 |
| Installation | 33 |
| Configuration using the LED display interface | 37 |
| Configuration using the touch screen display interface | 37 |

Water Leak Detectors39

| | |
|--|----|
| Inventory | 39 |
| Installation | 39 |
| LED status lights | 47 |
| Additional installation details | 47 |
| Configuration using the LED display interface | 47 |
| Configuration using the touch screen display interface | 48 |

Automatic Floor Pressurization System..... 49

| | |
|--|----|
| Overview..... | 49 |
| Inventory..... | 49 |
| Installation..... | 50 |
| Shutting down the cooling unit..... | 50 |
| Attaching the controller box..... | 50 |
| Installing the sensors..... | 51 |
| tLAN connection..... | 52 |
| Supply power connections..... | 53 |
| Configuration using the LED display interface..... | 53 |
| Configuration using the touch screen display interface..... | 55 |
| Configuration of the LAN using the LED display interface..... | 56 |
| Configuring the LAN settings using the touch screen display interface..... | 56 |

Communications Cards..... 59

| | |
|--|----|
| TCP/IP..... | 59 |
| pCOWeb Network Card (ACAC76122)..... | 59 |
| Inventory..... | 60 |
| Installing the pCOWeb card..... | 60 |
| Configuration using the LED display interface..... | 61 |
| Configuration using the touch screen display interface..... | 61 |
| User interface buttons and LEDs..... | 62 |
| LED indicator lights..... | 62 |
| Connecting to a PC..... | 63 |
| Setting the IP address and subnet mask..... | 63 |
| C—Proxy..... | 64 |
| Activating factory network settings..... | 64 |
| Opening pCOWeb..... | 64 |
| Accessing the user memory..... | 65 |
| Accessing custom HTML pages..... | 66 |
| Resetting the system after customizing the HTML pages..... | 66 |
| Verifying setup..... | 66 |
| Returning to the initial configuration..... | 66 |
| Resetting the system after returning to the initial configuration..... | 67 |
| LON NETWORK..... | 67 |
| PCO10000F0 LonWorks® pCO system serial card (ACAC76124)..... | 67 |
| Inventory..... | 67 |
| Installation..... | 68 |
| Connecting to the LonWorks network..... | 68 |
| Activating the service pin..... | 69 |
| Configuration using the LED display interface..... | 69 |
| Configuration using the touch screen display interface..... | 70 |
| LON serial card LED light functionality..... | 70 |

| | |
|--|----|
| RS485 | 70 |
| pCOnet PCO1000BA0 (ACAC76123) | 70 |
| Inventory | 71 |
| Installation | 71 |
| Configuration using the LED display interface | 72 |
| Configuration using the touch screen display interface | 73 |
| Status LED | 73 |
| Starting sequences, power-up, and restarting | 73 |
| Using the push button | 74 |
| Restarting the pCOnet controller | 74 |
| Recalling the factory configuration (factory boot switch mode) | 74 |
| Additional documentation | 74 |
| Configuring pCOnet parameters | 74 |
| Using the pCOnet parameters | 75 |
| | |
| RS485 | 75 |
| PCOS004850 serial card for pCO controller (Part # 0M-21AS108CDZ) | 75 |
| Inventory | 76 |
| Installation | 76 |
| Configuration using the LED display interface | 78 |
| Configuration using the touch screen display interface | 78 |
| | |
| RS232 | 79 |
| PCO100MDM0/ RS232 field bus card for pCO1 (ACAC76125) | 79 |
| Inventory | 79 |
| Installation | 80 |
| Configuration using the LED display interface | 81 |
| Configuration using the touchscreen display interface | 81 |

Safety

Important Safety Information

Read the instructions carefully to become familiar with the equipment before trying to install, operate, service, or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a Danger or Warning safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

NOTICE

NOTICE addresses practices not related to physical injury including certain environmental hazards, potential damage or loss of data.

General Information

Overview

This manual provides information on accessories available with Uniflair™ LE cooling units. It supplies general information, safety instructions, installation information, and setup information.

The descriptions and illustrations in this manual are owned by Schneider Electric. Schneider Electric reserves the right to make any alterations it sees fit in order to improve the product without having to update this document.

The illustrations and images in this manual are examples only and may differ from your model or environment.

Companion Manuals

For more information about Uniflair units, refer to the following documentation:

- *Uniflair LE Chilled Water HDCV 4500/5000 Operation and Maintenance Manual*
- *Uniflair LE DX Operation and Maintenance Manual*
- *Uniflair LE Chilled Water HDCV 4500/5000 Installation Manual*
- *Uniflair LE DX Installation Manual*

Uniflair Floor Stands

⚠ WARNING

HAZARD FROM MOVING PARTS

Keep hands, clothing, and jewelry away from moving parts. Check the equipment for foreign objects before closing the doors and starting the equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

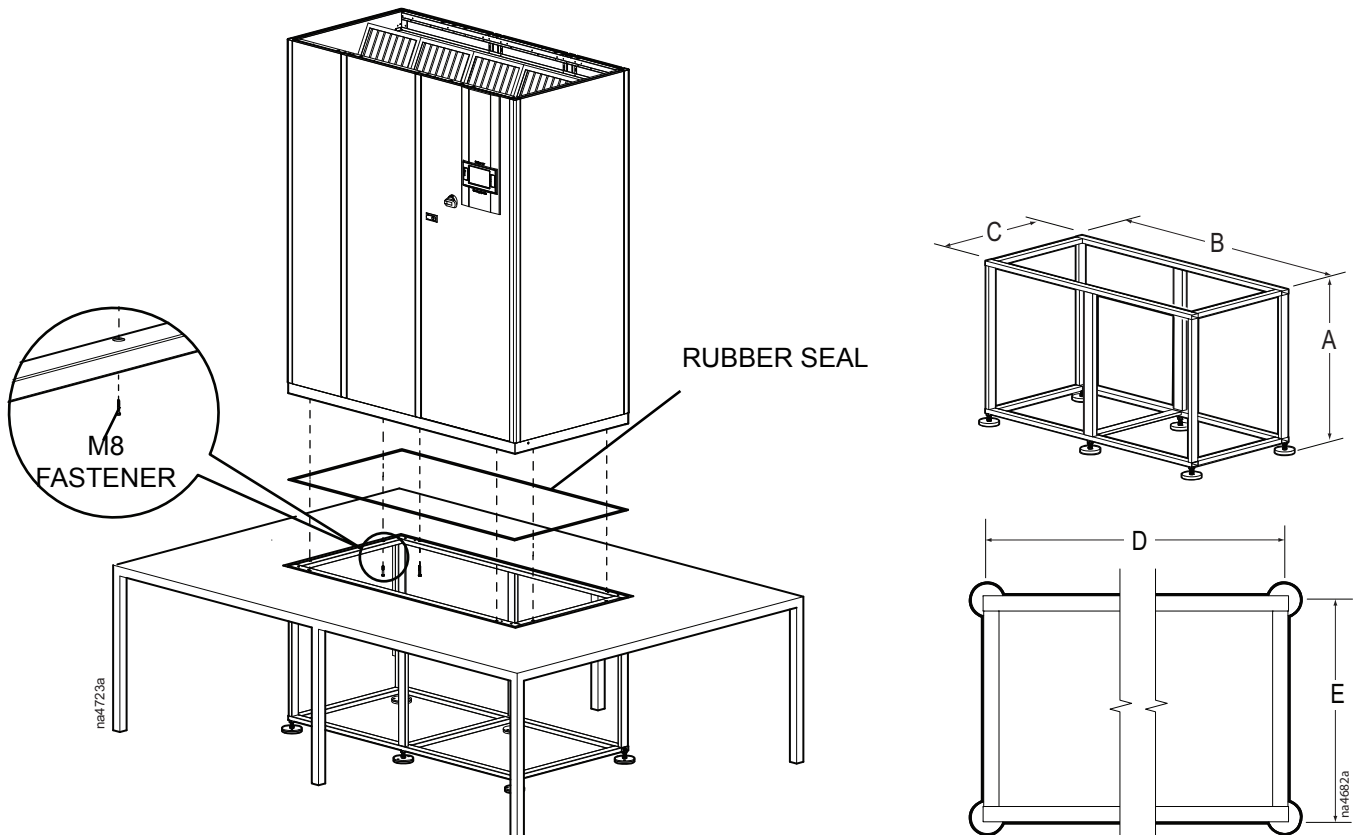
⚠ CAUTION

DAMAGE TO EQUIPMENT OR PERSONNEL

The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

Failure to follow these instructions can result in injury or equipment damage.

Fixed Floor Stands



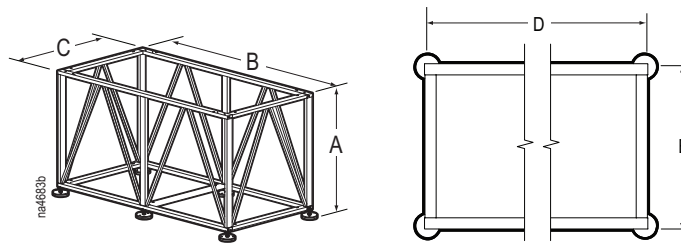
NOTE: For installation on a raised floor, install a flexible seal (field supplied) at least 5.59-mm (0.2-in.) thick between the raised floor and frame.

NOTE: Rubber, vibration isolation pads are field supplied.

| Model | Frame Size | Weight kg (lb) | Dimensions mm (in.) | | | | | Number of M8 Fasteners |
|-----------|------------|----------------|---------------------|------------------|----------------|------------------|----------------|------------------------|
| | | | A | B* | C* | D** | E** | |
| ACFS76084 | 3 | 25 (54) | 305 (12) | 1077 (42.40) | 817 (32.17) | 1000 (39.37) | 740 (29.13) | 4 |
| ACFS76089 | | 26 (58) | 457 (18) | | | | | |
| ACFS76094 | | 28 (61) | 610 (24) | | | | | |
| ACFS76055 | | 25.8 (56.9) | 914 (36) | | | | | |
| ACFS76085 | 4 | 35 (77) | 305 (12) | 1377 (54.21) | 932 (36.73) | 1300 (51.18) | 855 (33.66) | 4 |
| ACFS76090 | | 37 (82) | 457 (18) | | | | | |
| ACFS76095 | | 40 (87) | 610 (24) | | | | | |
| ACFS76056 | | 36.5 (80.4) | 914 (36) | | | | | |
| ACFS76086 | 5 | 39 (86) | 305 (12) | 1786 (70.35) | 932 (36.73) | 1710 (67.32) | 855 (33.66) | 4 |
| ACFS76091 | | 41 (90) | 457 (18) | | | | | |
| ACFS76096 | | 43 (95) | 610 (24) | | | | | |
| ACFS76057 | | 40.0 (88.8) | 914 (36) | | | | | |
| ACFS76087 | 6 | 48 (105) | 305 (12) | 2221 (88.11) | 932 (36.73) | 2160 (85.04) | 855 (33.66) | 6 |
| ACFS76092 | | 50 (111) | 457 (18) | | | | | |
| ACFS76097 | | 53 (117) | 610 (24) | | | | | |
| ACFS76058 | | 49.6 (109.1) | 914 (36) | | | | | |
| ACFS76088 | 7 | 51 (113) | 305 (12) | 2631 (104.25) | 932 (36.73) | 2572 (101.26) | 855 (33.66) | 8 |
| ACFS76093 | | 55 (120) | 457 (18) | | | | | |
| ACFS76098 | | 57 (126) | 610 (24) | | | | | |
| ACFS76059 | | 53.5 (117.6) | 914 (36) | | | | | |

* Measured edge-to-edge.
 ** Measured center-to-center.

Seismic Floor Stands



| Model | Frame Size | Weight kg (lb) | Dimensions mm (in.) | | | | | Number of M8 Fasteners |
|-----------|------------|----------------|---------------------|------------------|----------------|------------------|----------------|------------------------|
| | | | A | B* | C* | D** | E** | |
| ACFS76060 | 3 | 27.3 (60.2) | 305 (12) | 1077 (42.40) | 817 (32.17) | 1000 (39.37) | 740 (29.13) | 4 |
| ACFS76065 | | 29.6 (65.3) | 457 (18) | | | | | |
| ACFS76070 | | 31.8 (70.1) | 610 (24) | | | | | |
| ACFS76075 | | 34.1 (75.2) | 914 (36) | | | | | |
| ACFS76061 | 4 | 38.6 (80.1) | 305 (12) | 1377 (54.21) | 932 (36.73) | 1300 (51.18) | 855 (33.66) | 4 |
| ACFS76066 | | 40.9 (90.2) | 457 (18) | | | | | |
| ACFS76071 | | 43.2 (95.2) | 610 (24) | | | | | |
| ACFS76076 | | 45.5 (100.3) | 914 (36) | | | | | |
| ACFS76062 | 5 | 43.1 (95.0) | 305 (12) | 1786 (70.35) | 932 (36.73) | 1710 (67.32) | 855 (33.66) | 4 |
| ACFS76067 | | 45.5 (100.3) | 457 (18) | | | | | |
| ACFS76072 | | 47.7 (105.2) | 610 (24) | | | | | |
| ACFS76077 | | 50.0 (110.2) | 914 (36) | | | | | |
| ACFS76063 | 6 | 52.3 (115.3) | 305 (12) | 2221 (88.11) | 932 (36.73) | 2160 (85.04) | 855 (33.66) | 6 |
| ACFS76068 | | 54.5 (120.2) | 457 (18) | | | | | |
| ACFS76073 | | 56.8 (125.2) | 610 (24) | | | | | |
| ACFS76078 | | 59.1 (130.3) | 914 (36) | | | | | |
| ACFS76064 | 7 | 56.8 (125.2) | 305 (12) | 2631 (104.25) | 932 (36.73) | 2572 (101.26) | 855 (33.66) | 7 |
| ACFS76069 | | 56.8 (125.2) | 457 (18) | | | | | |
| ACFS76074 | | 61.4 (135.4) | 610 (24) | | | | | |
| ACFS76079 | | 63.6 (140.2) | 914 (36) | | | | | |

* Measured edge-to-edge.
 ** Measured center-to-center.

Seismic analysis of Uniflair floor stands: A

structural analysis model was created for each of the frames for the Uniflair seismic floor stands, to verify that the frames are adequate for the highest seismic forces ($S_{DS}=2.5g$). The reactions from the analyses were used to calculate the maximum S_{DS} of the frame base assemblies.

For each frame type, the baseplate, welded bolt and nut, welds, and anchorage to the structure were evaluated to determine the maximum S_{DS} of the base assembly. The anchorage of the baseplate to the structure was assumed to be 2.5 in. HILTI Kwikbolt TZ expansion anchors with 2-in. embedment into a 4-in. thick normal weight concrete slab with the strength of $f_c'=4000$ psi using the attached base plate. The results of the analysis are provided in the following table.

| Model | Sds of Frame | Sds of Base Assembly |
|--|--------------|----------------------|
| ACFS76060 ACFS76065 ACFS76070 ACFS76075 | 2.5 g | 2.5 g |
| ACFS76061 ACFS76066 ACFS76071 ACFS76076 | 2.5 g | 2.5 g |
| ACFS76062 ACFS76067 ACFS76072 ACFS76077 | 2.5 g | 2.5 g |
| ACFS76063 ACFS76068 ACFS76073 ACFS76078 | 2.5 g | 2.5 g |
| ACFS76064 ACFS76069 ACFS76074 ACFS76079 | 2.5 g | 2.5 g |

Uniflair Plenums

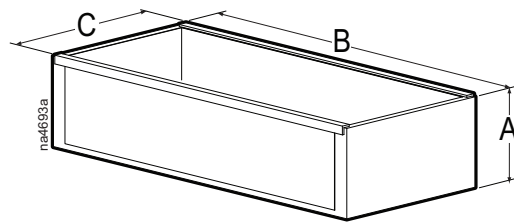
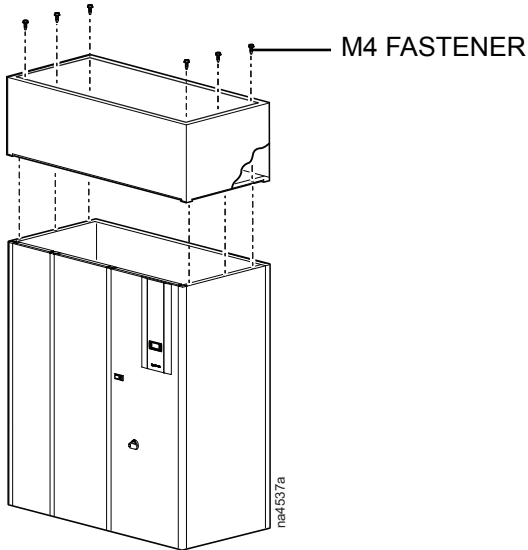
⚠ CAUTION

DAMAGE TO EQUIPMENT OR PERSONNEL

The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

Failure to follow these instructions can result in injury or equipment damage.

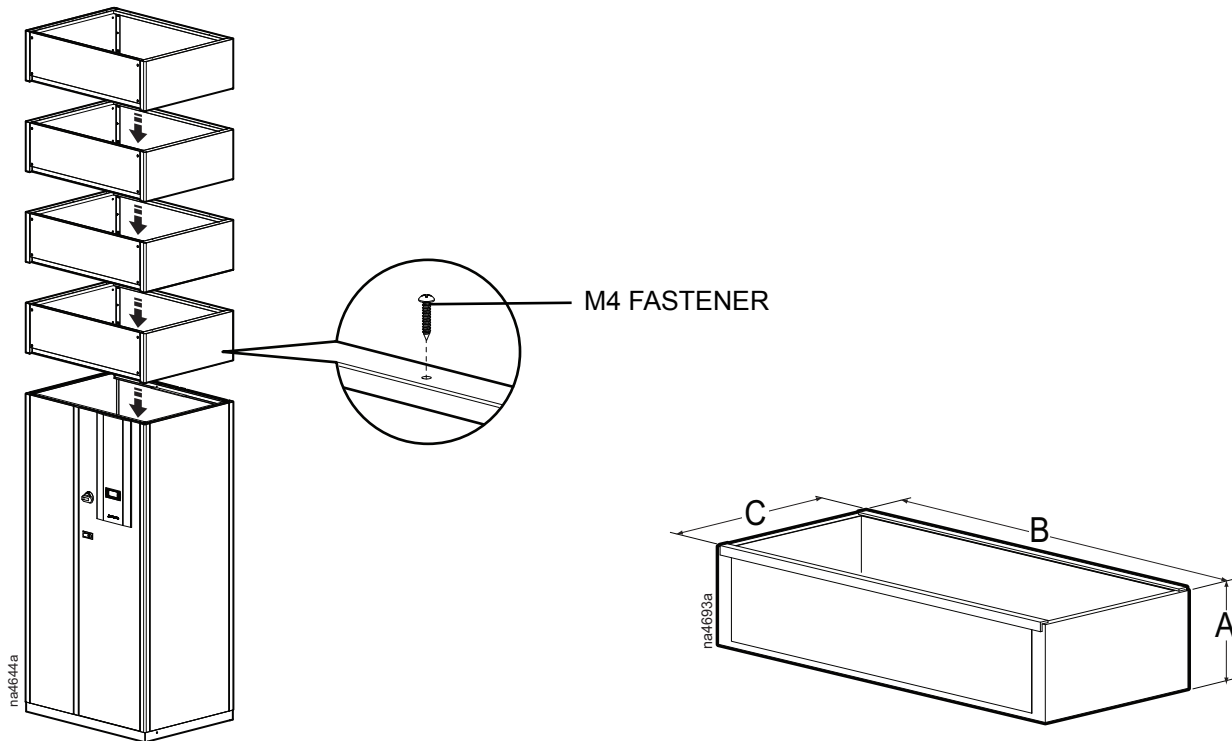
20-in. Return Plenum (Non-Stackable)



NOTE: Fasteners are field supplied.

| Type of Plenum | Model | Color | Frame Size | Dimensions mm (in.) | | | Net Weight kg (lb) |
|--|-----------|-------|------------|---------------------|------------------|----------------|-----------------------|
| | | | | A | B | C | |
| Top discharge or return plenum 500 mm (20 in.) | ACPL75110 | Blue | 3 | 500 (19.69) | 1010 (39.76) | 750 (29.53) | 37.00 (81.57) |
| | ACPL75130 | White | | | | | |
| | ACPL75131 | Gray | | | | | |
| | ACPL75132 | Black | | | | | |
| | ACPL75111 | Blue | 4 | 500 (19.69) | 1310 (51.57) | 865 (34.06) | 45.00 (99.21) |
| | ACPL75133 | White | | | | | |
| | ACPL75134 | Gray | | | | | |
| | ACPL75135 | Black | | | | | |
| | ACPL75112 | Blue | 5 | 500 (19.69) | 1720 (67.72) | 865 (34.06) | 53.50 (117.95) |
| | ACPL75136 | White | | | | | |
| | ACPL75137 | Gray | | | | | |
| | ACPL75138 | Black | | | | | |
| | ACPL75113 | Blue | 6 | 500 (19.69) | 2170 (85.43) | 865 (34.06) | 62.00 (136.70) |
| | ACPL75139 | White | | | | | |
| | ACPL75140 | Gray | | | | | |
| | ACPL75141 | Black | | | | | |
| | ACPL75114 | Blue | 7 | 500 (19.69) | 2582 (101.65) | 865 (34.06) | 70.00 (154.30) |
| | ACPL75142 | White | | | | | |
| | ACPL75143 | Gray | | | | | |
| | ACPL75144 | Black | | | | | |

12-in. Plenum (Stackable Up To 48 in.)

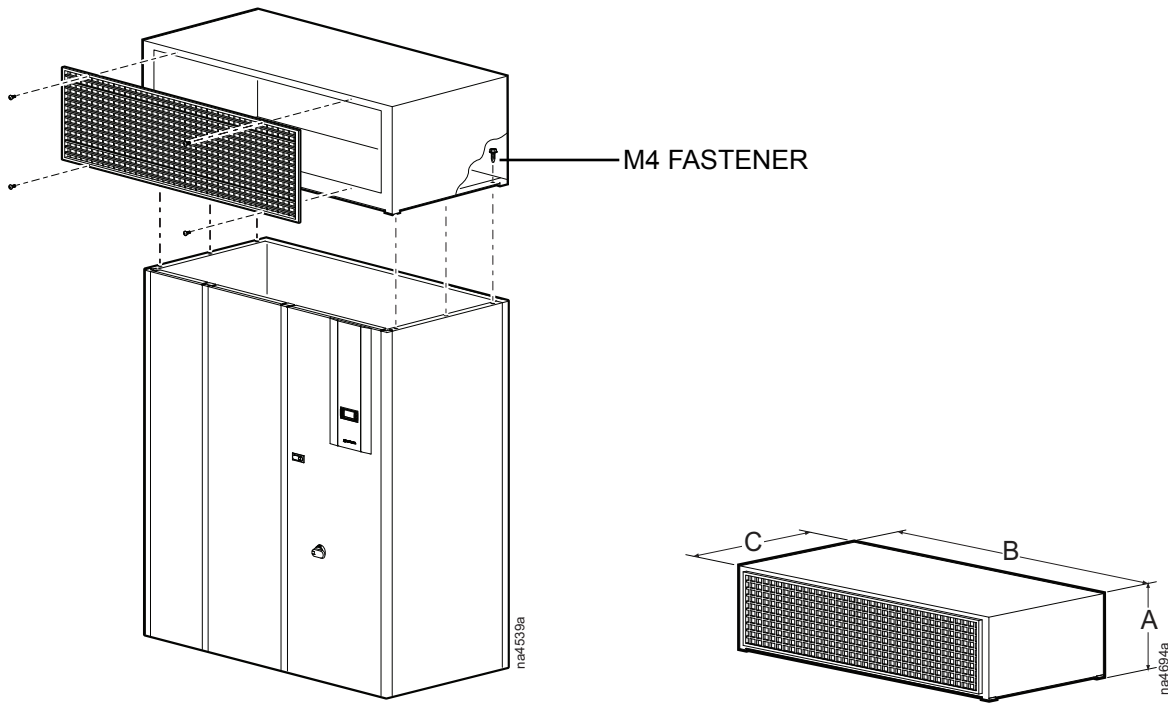


Up to four 12-in. plenums can be stacked together.

NOTE: Fasteners are field supplied.

| Type of Plenum | Model | Color | Frame Size | Dimensions mm (in.) | | | Net Weight kg (lb) | Number of M4 Fasteners |
|---|-----------|-------|------------|---------------------|------------------|----------------|--------------------|------------------------|
| | | | | A | B | C | | |
| Top discharge or return plenum 305 mm (12 in.) | ACPL75150 | Blue | 3 | 305 (12.00) | 1010 (39.76) | 750 (29.53) | 20.00 (44.10) | 0 |
| | ACPL75151 | White | | | | | | |
| | ACPL75152 | Gray | | | | | | |
| | ACPL75153 | Black | | | | | | |
| | ACPL75154 | Blue | 4 | 305 (12.00) | 1310 (51.57) | 865 (34.06) | 23.00 (50.70) | 2 |
| | ACPL75155 | White | | | | | | |
| | ACPL75156 | Gray | | | | | | |
| | ACPL75157 | Black | | | | | | |
| | ACPL75158 | Blue | 5 | 305 (12.00) | 1720 (67.72) | 865 (34.06) | 27.00 (59.53) | 4 |
| | ACPL75159 | White | | | | | | |
| | ACPL75160 | Gray | | | | | | |
| | ACPL75161 | Black | | | | | | |
| | ACPL75162 | Blue | 6 | 305 (12.00) | 2170 (85.43) | 865 (34.06) | 32.00 (70.54) | 4 |
| | ACPL75163 | White | | | | | | |
| | ACPL75164 | Gray | | | | | | |
| | ACPL75165 | Black | | | | | | |
| | ACPL75166 | Blue | 7 | 305 (12.00) | 2582 (101.65) | 865 (34.06) | 36.00 (79.36) | 4 |
| | ACPL75167 | White | | | | | | |
| | ACPL75168 | Gray | | | | | | |
| ACPL75169 | Black | | | | | | | |

20-in. Front Supply Plenum w/ Grille



| Type of Plenum | Model | Color | Frame Size | Dimensions mm (in.) | | | Net Weight kg (lb) |
|---|-----------|-------|----------------|---------------------|-----------------|-------------------|-----------------------|
| | | | | A | B | C | |
| Front discharge plenum 500 mm (20 in.) | ACPL75105 | Blue | 3 | 500 (19.69) | 1000 (39.37) | 740 (29.13) | 38.00 (83.78) |
| | ACPL75115 | White | | | | | |
| | ACPL75116 | Gray | | | | | |
| | ACPL75117 | Black | | | | | |
| | ACPL75106 | Blue | 4 | 500 (19.69) | 1300 (51.18) | 855 (33.66) | 50.00 (110.20) |
| | ACPL75118 | White | | | | | |
| | ACPL75119 | Gray | | | | | |
| | ACPL75120 | Black | | | | | |
| | ACPL75107 | Blue | 5 | 500 (19.69) | 1710 (67.32) | 855 (33.66) | 59.00 (130.10) |
| | ACPL75121 | White | | | | | |
| | ACPL75122 | Gray | | | | | |
| | ACPL75123 | Black | | | | | |
| | ACPL75108 | Blue | 6 | 500 (19.69) | 2160 (85.04) | 855 (33.66) | 74.00 (163.10) |
| | ACPL75124 | White | | | | | |
| | ACPL75125 | Gray | | | | | |
| ACPL75126 | Black | | | | | | |
| ACPL75109 | Blue | 7 | 500 (19.69) | 2572 (101.26) | 855 (33.66) | 87.00 (191.80) | |
| ACPL75127 | White | | | | | | |
| ACPL75128 | Gray | | | | | | |
| ACPL75129 | Black | | | | | | |

Uniflair Sub-Bases

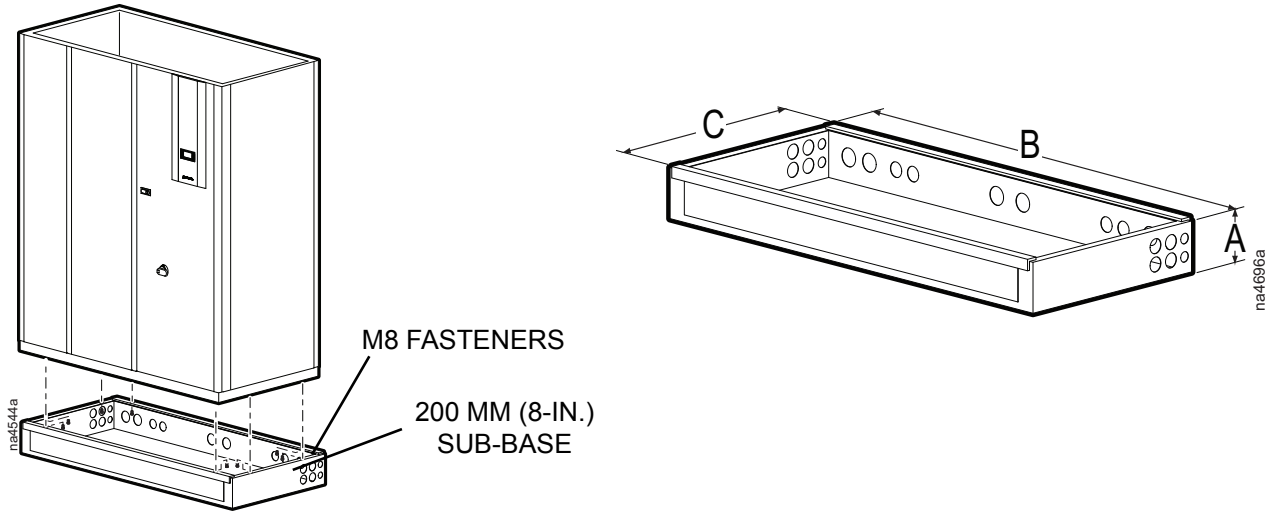
⚠ CAUTION

DAMAGE TO EQUIPMENT OR PERSONNEL

The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

Failure to follow these instructions can result in injury or equipment damage.

8-in. Sub-Base for Piping

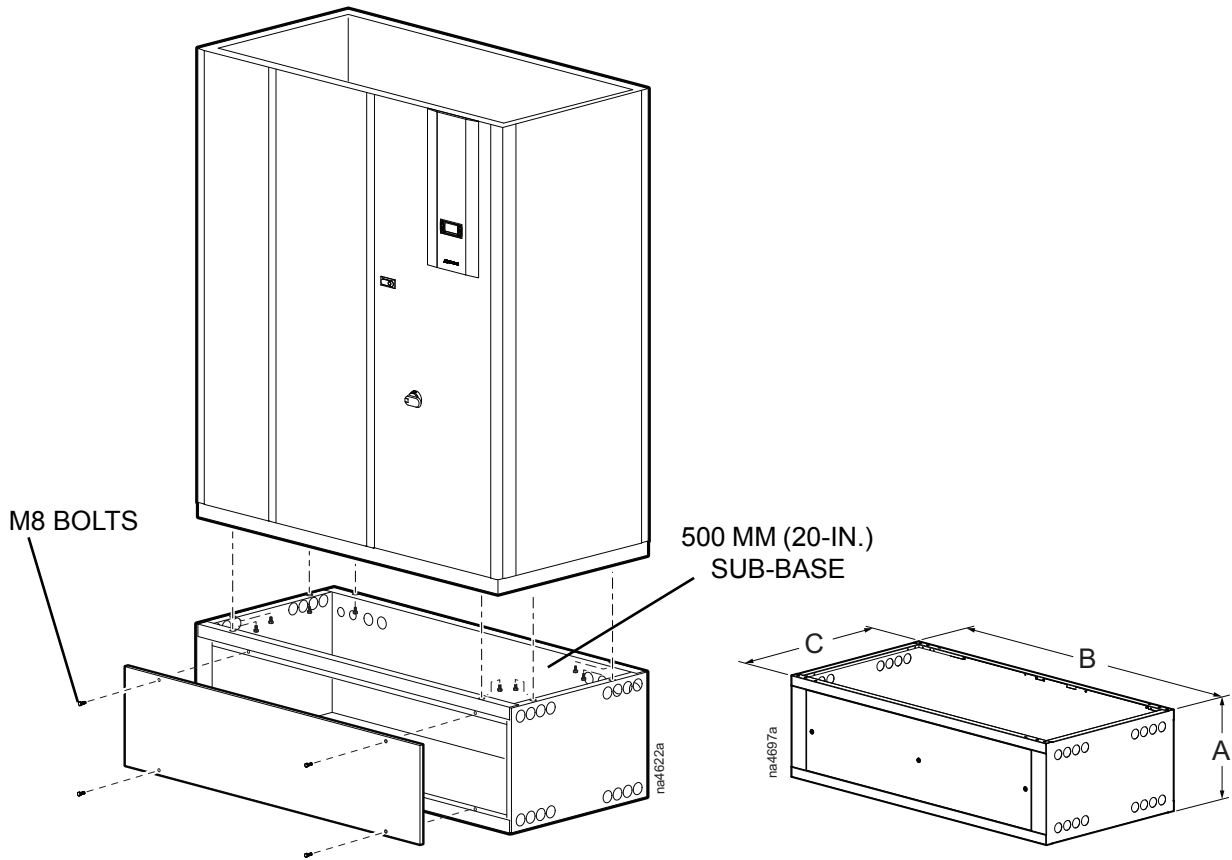


NOTE: Fasteners and vibration pads are field supplied.

NOTE: Uniflair sub-bases are open at the bottom. Do not place them on floor stands in raised floor installations.

| Type of Plenum | Model | Color | Frame Size | Dimensions mm (in.) | | | Net Weight kg (lb) | Number of Fasteners |
|----------------------------|-----------|-------|------------|---------------------|------------------|----------------|--------------------|---------------------|
| | | | | A | B | C | | |
| Sub-base 200 mm (8 in.) | ACSB76140 | Blue | 3 | 200 (7.87) | 1000 (39.37) | 740 (29.13) | 17.70 (39.02) | 4 |
| | ACSB76150 | White | | | | | | |
| | ACSB76151 | Gray | | | | | | |
| | ACSB76152 | Black | | | | | | |
| | ACSB76141 | Blue | 4 | 200 (7.87) | 1300 (51.18) | 855 (33.66) | 21.80 (48.06) | 4 |
| | ACSB76153 | White | | | | | | |
| | ACSB76154 | Gray | | | | | | |
| | ACSB76155 | Black | | | | | | |
| | ACSB76142 | Blue | 5 | 200 (7.87) | 1710 (67.32) | 855 (33.66) | 27.20 (59.97) | 4 |
| | ACSB76156 | White | | | | | | |
| | ACSB76157 | Gray | | | | | | |
| | ACSB76158 | Black | | | | | | |
| | ACSB76143 | Blue | 6 | 200 (7.87) | 2160 (85.04) | 855 (33.66) | 31.60 (69.67) | 6 |
| | ACSB76159 | White | | | | | | |
| | ACSB76160 | Gray | | | | | | |
| | ACSB76161 | Black | | | | | | |
| | ACSB76144 | Blue | 7 | 200 (7.87) | 2572 (101.26) | 855 (33.66) | 35.60 (74.49) | 8 |
| | ACSB76162 | White | | | | | | |
| | ACSB76163 | Gray | | | | | | |
| | ACSB76164 | Black | | | | | | |

20-in. Sub-Base for Piping

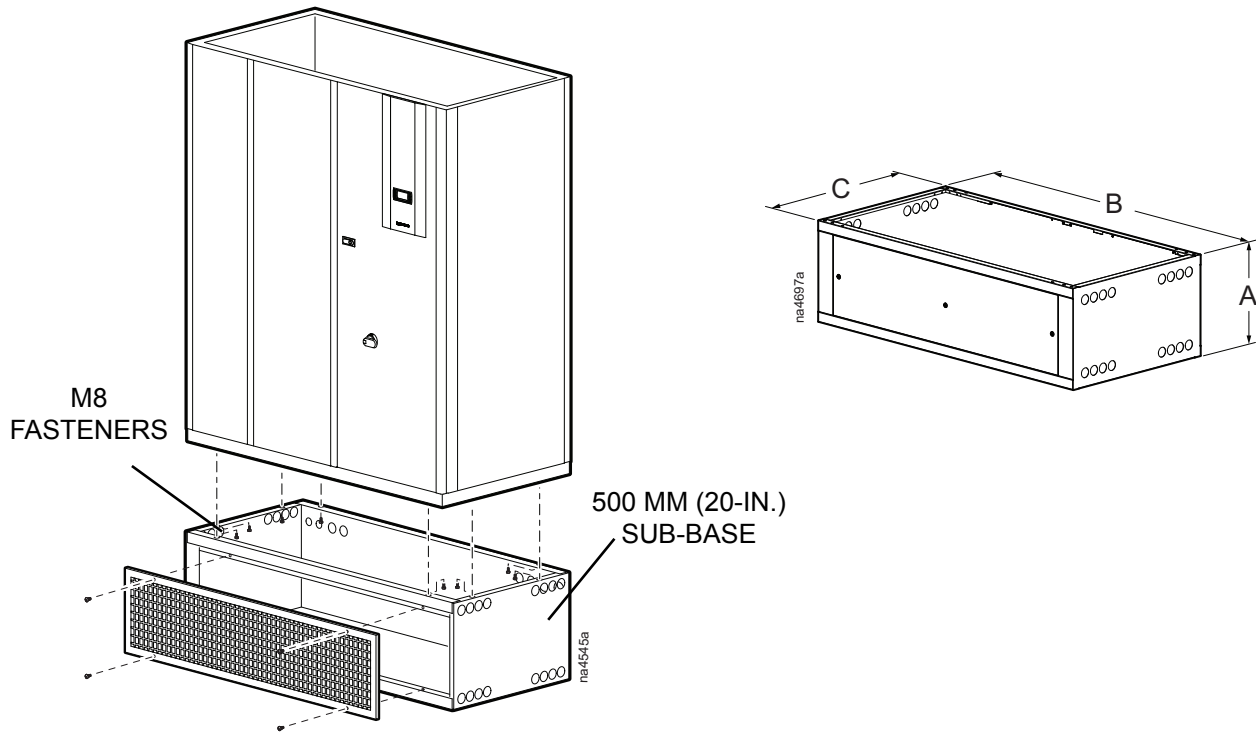


NOTE: Vibration pads and fasteners are field supplied.

NOTE: Uniflair sub-bases are open at the bottom. Do not place them on floor stands in raised floor installations

| Type of Plenum | Model | Color | Frame Size | Dimensions mm (in.) | | | Net Weight kg (lb) |
|--|-----------|-------|------------|---------------------|------------------|----------------|-----------------------|
| | | | | A | B | C | |
| Sub-base 500 mm (20 in.) no grille | ACSB76180 | Blue | 3 | 500 (19.69) | 1000 (39.37) | 740 (29.13) | 41.00 (90.38) |
| | ACSB76181 | White | | | | | |
| | ACSB76182 | Gray | | | | | |
| | ACSB76183 | Black | | | | | |
| | ACSB76184 | Blue | 4 | 500 (19.69) | 1300 (51.18) | 855 (33.66) | 53.00 (116.86) |
| | ACSB76185 | White | | | | | |
| | ACSB76186 | Gray | | | | | |
| | ACSB76167 | Black | | | | | |
| | ACSB76188 | Blue | 5 | 500 (19.69) | 1710 (67.32) | 855 (33.66) | 62.00 (136.69) |
| | ACSB76189 | White | | | | | |
| | ACSB76190 | Gray | | | | | |
| | ACSB76191 | Black | | | | | |
| | ACSB76192 | Blue | 6 | 500 (19.69) | 2160 (85.04) | 855 (33.66) | 77.00 (169.76) |
| | ACSB76193 | White | | | | | |
| | ACSB76194 | Gray | | | | | |
| | ACSB76195 | Black | | | | | |
| | ACSB76196 | Blue | 7 | 500 (19.69) | 2572 (101.26) | 855 (33.66) | 90.00 (198.42) |
| | ACSB76197 | White | | | | | |
| | ACSB76198 | Gray | | | | | |
| | ACSB76199 | Black | | | | | |

20-in. Sub-Base (Front Supply w/ Grille)



NOTE: Vibration pads and fasteners are field supplied.

NOTE: Uniflair sub-bases are open at the bottom. Do not place them on floor stands in raised floor installations

| Type of Plenum | Model | Color | Frame Size | Dimensions mm (in.) | | | Net Weight kg (lb) | Number of Fasteners |
|--|-----------|-------|----------------|---------------------|-----------------|-------------------|--------------------|---------------------|
| | | | | A | B | C | | |
| Sub-base 500 mm (20 in.) front discharge | ACSB76145 | Blue | 3 | 500 (19.69) | 1000 (39.37) | 740 (29.13) | 38.00 (183.78) | 4 |
| | ACSB76165 | White | | | | | | |
| | ACSB76166 | Gray | | | | | | |
| | ACSB76167 | Black | | | | | | |
| | ACSB76146 | Blue | 4 | 500 (19.69) | 1300 (51.18) | 855 (33.66) | 50.00 (110.20) | 4 |
| | ACSB76168 | White | | | | | | |
| | ACSB76169 | Gray | | | | | | |
| | ACSB76170 | Black | | | | | | |
| | ACSB76147 | Blue | 5 | 500 (19.69) | 1710 (67.32) | 855 (33.66) | 59.00 (130.10) | 4 |
| | ACSB76171 | White | | | | | | |
| | ACSB76172 | Gray | | | | | | |
| | ACSB76173 | Black | | | | | | |
| | ACSB76148 | Blue | 6 | 500 (19.69) | 2160 (85.04) | 855 (33.66) | 74.00 (163.10) | 6 |
| | ACSB76174 | White | | | | | | |
| | ACSB76175 | Gray | | | | | | |
| | ACSB76176 | Black | | | | | | |
| ACSB76149 | Blue | 7 | 500 (19.69) | 2572 (101.26) | 855 (33.66) | 87.00 (191.80) | 8 | |
| ACSB76177 | White | | | | | | | |
| ACSB76178 | Gray | | | | | | | |
| ACSB76179 | Black | | | | | | | |

Damper Utilization

Overview

Schneider Electric offers the following types of dampers:

- Motorized Damper
- Gravity Damper

Dampers are factory installed on top of the unit.

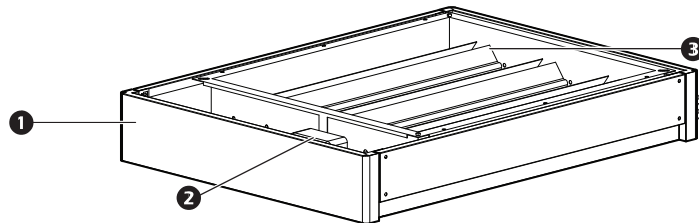
NOTE: Dampers can be field installed by special order. Contact a Schneider-Electric representative for details.

Air Flow Directions

| Air Flow | Damper Type |
|----------|--------------------|
| Downflow | Motorized |
| Upflow | Gravity, motorized |

Motorized Damper

Inventory



| Item | Description | Quantity |
|------|---------------------|----------|
| ① | 6-in. damper plenum | 1 |
| ② | Damper motor | 1 |
| ③ | Damper | 1 |

Installation

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

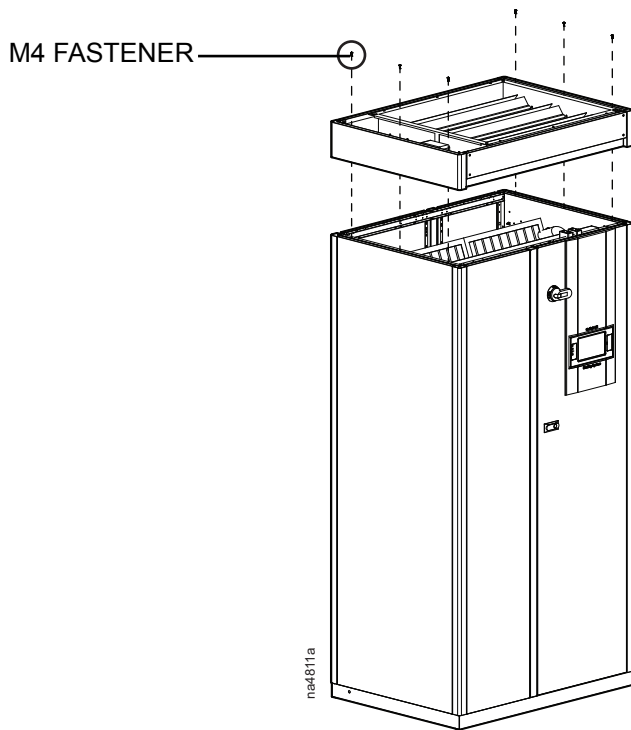
Failure to follow these instructions will result in death or serious injury.

⚠ CAUTION

DAMAGE TO EQUIPMENT OR PERSONNEL

The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

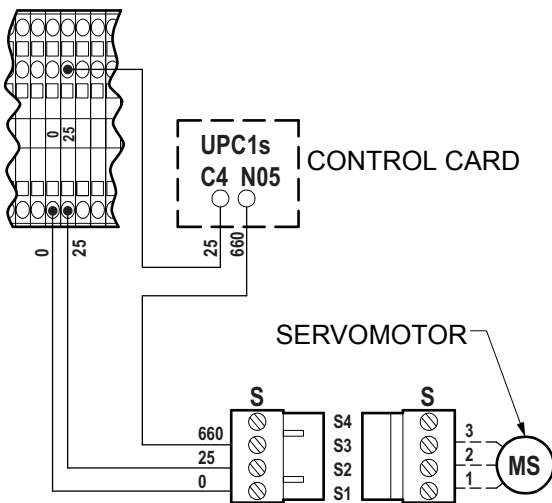
Failure to follow these instructions can result in injury or equipment damage.



The following electrical diagrams provide SKU and wiring details to wire the damper to Uniflair Chilled Water and Direct Expansion units.

NOTE: 0-10v signal (Y4) and 24-V output is available on (D05) and can be provided.

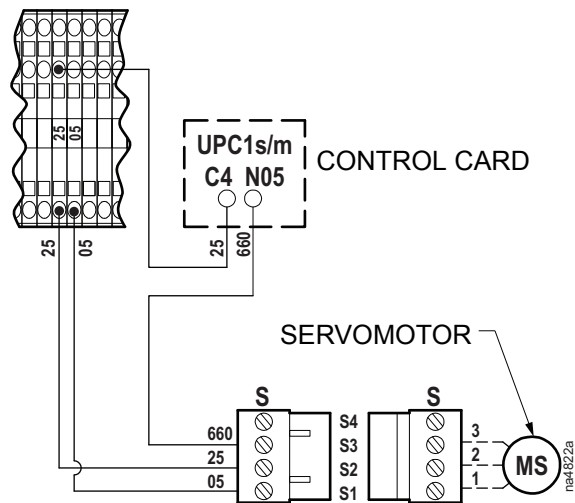
TERMINAL BLOCK WIRING DIAGRAM



Chilled Water Models

- | | |
|------------|------------|
| TD/UCV0700 | TU/TDC2500 |
| TU/TDC1000 | TU/TDC3400 |
| TU/TDC1200 | TU/TDC4000 |
| TU/TDC1700 | TDCV4300 |

TERMINAL BLOCK WIRING DIAGRAM



DX (Direct Expansion) Models

- | |
|-----------------|
| TD/UAV0511-3342 |
| TD/UWV0511-2842 |
| TD/UEV0511-2842 |
| TD/UDV0511-2842 |
| TD/UTV0511-2842 |

Configuration using the LED display

1. Turn power off to the unit and wait for the main screen to appear.
2. Press the **Prg** key.
3. Using the UP or DOWN key, select **SERVICE MENU** and press **ENTER**.
4. Enter the password.
NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password instead.
5. Press **ENTER**.
6. Using the UP or DOWN key, select **HARDWARE SETTINGS** and press **ENTER**.
7. Navigate to the ON/OFF MODE screen.

| ON/OFF MODE: | |
|---------------------|------|
| Via Input Contact: | N |
| Only Via Serial: | N |
| Motorized Damper: | Y |
| Opening Time: | 120 |
| Mot. Damper Output: | DO5 |
| Output Contact: | N.O. |

NOTE: These two settings are not applicable.

8. Press **ENTER** until the cursor is positioned on **MOTORIZED DAMPER**.
9. Select **Yes** and press **ENTER**.
10. The damper default opening time 120 seconds. Adjust if required.
11. Press **ENTER** to move the cursor to the top-left portion of the display.
12. To exit, press the **ESC** key and navigate to the main screen.

Configuration using the touchscreen display

Path: Main > Configuration > Unit > Digital Inputs

1. Turn on the power to the unit and wait for the touchscreen to display.
2. Set the following settings:

NOTE: Settings may appear on a different screen.

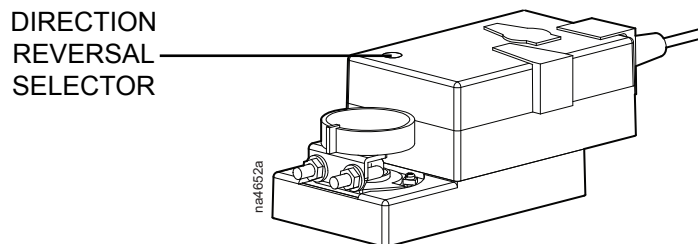
Motorized Damper: Enabled

Motorized Damper Opening Time: 120 seconds (suggested setting)

Motorized Damper Output Contract Normal State: Normally Open

3. Press the **Home** button to return to the main screen.

Use the direction reversal selector located on the servomotor if the rotation is incorrect.



Gravity Damper

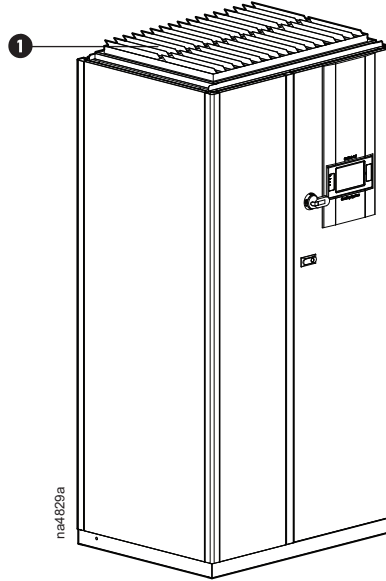
⚠ CAUTION

DAMAGE TO EQUIPMENT OR PERSONNEL

The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

Failure to follow these instructions can result in injury or equipment damage.

Inventory



| Item | Description | Quantity |
|------|----------------|----------|
| ① | Gravity damper | 1 |

Condensate Pumps

Overview

Uniflair condensate removal pumps collect and automatically remove water up to 100°C (212°F). The pump collects water in its integral reservoir. After enough water has been collected, an internal float switch activates the pump and the water is pumped out. Once enough water has been evacuated from the reservoir, the pump automatically deactivates.

Important Safety Information

Read the instructions carefully to become familiar with the equipment before trying to install, operate, service, or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

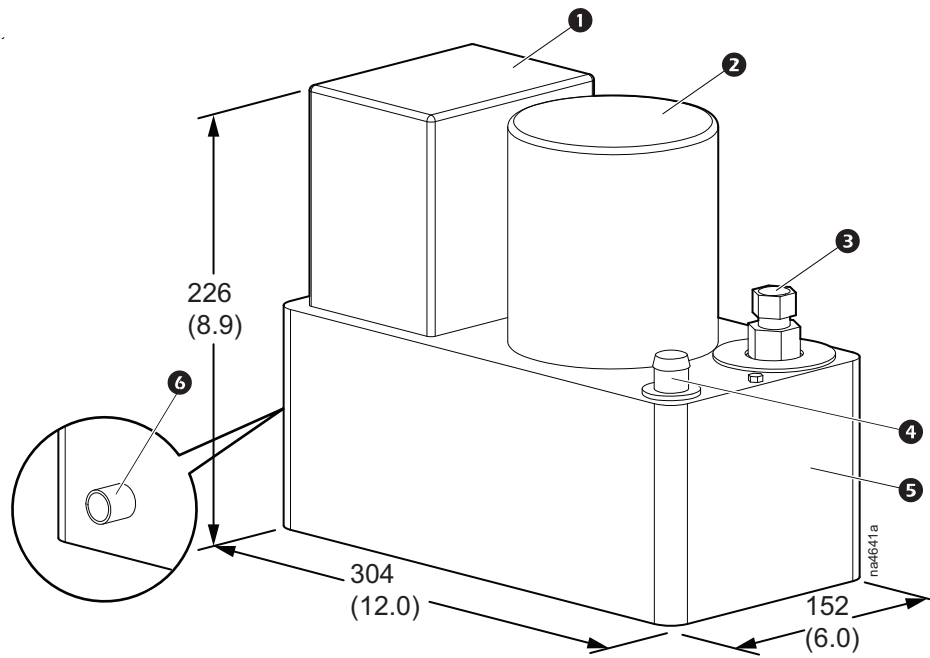
| ⚠ ⚠ DANGER |
|---|
| HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH |
| <ul style="list-style-type: none">• To reduce the risk of electrical shock, this pump must be grounded with a properly wired grounding connection.• Disconnect electrical power at the power source (fuse box, circuit breaker, etc.) before servicing pump.• Do not handle the pump with wet hands, while standing on a wet/damp surface, or in water. |
| Failure to follow these instructions will result in death or serious injury. |

| NOTICE |
|--|
| FLAMMABLE FLUIDS |
| The pump should only be used for liquids compatible with pump component materials. Do not use to pump flammable or explosive fluids. Do not use in explosive atmospheres. |
| In any installation where property damage and/or injury could occur as a result of an inoperable or leaking pump, a backup system such as high level safety float switch and/or alarm is highly recommended. |
| Failure to follow these instructions can result in equipment damage. |

IMPORTANT: For correct wiring installation, refer to the enclosed wiring diagrams. Make certain that line voltage corresponds to voltage specified on pump motor's nameplate.

IMPORTANT: All wiring must conform to local electrical codes. In areas without local code, the National Electrical Code applies.

Component Identification



*Dimensions shown in mm (in.).

| Item | Description |
|------|-------------|
|------|-------------|

- | | |
|---|---|
| ❶ | Electrical component cover |
| ❷ | Motor (for voltages, see “Pump Models and SKUs” on page 20) |
| ❸ | Check valve with 12.7 mm (1/2 in.) copper tubing discharge |
| ❹ | Barbed 19 mm (3/4 in.) inlet |
| ❺ | Tank |
| ❻ | Optional 19.05 mm (3/4 in.) barbed inlet (cover and plug must be removed) |

Pump Models and SKUs

The following table provides the model numbers, SKU, installation details of pumps available for Uniflair cooling units, and pump wiring information:

- **External wiring:** External power source. The pump is shipped loose from the factory.
- **Factory installed:** Powered internally by the unit. The pump is factory installed.
- **Internal wiring:** Powered internally by the unit. The pump is shipped loose from the factory.

| Pump Model | SKU | Voltage | Wiring | | |
|-------------|-----------|---------|-----------------------|-----------------|-------------------|
| | | | CW-TD/UCV | DX | HDCV |
| A5X-3AP-230 | ACAC76129 | 230 | External wiring 230 V | Internal wiring | Factory installed |
| A5X-3AP-460 | ACAC76136 | 460/575 | External wiring 460 V | Internal wiring | Factory installed |

Installation

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

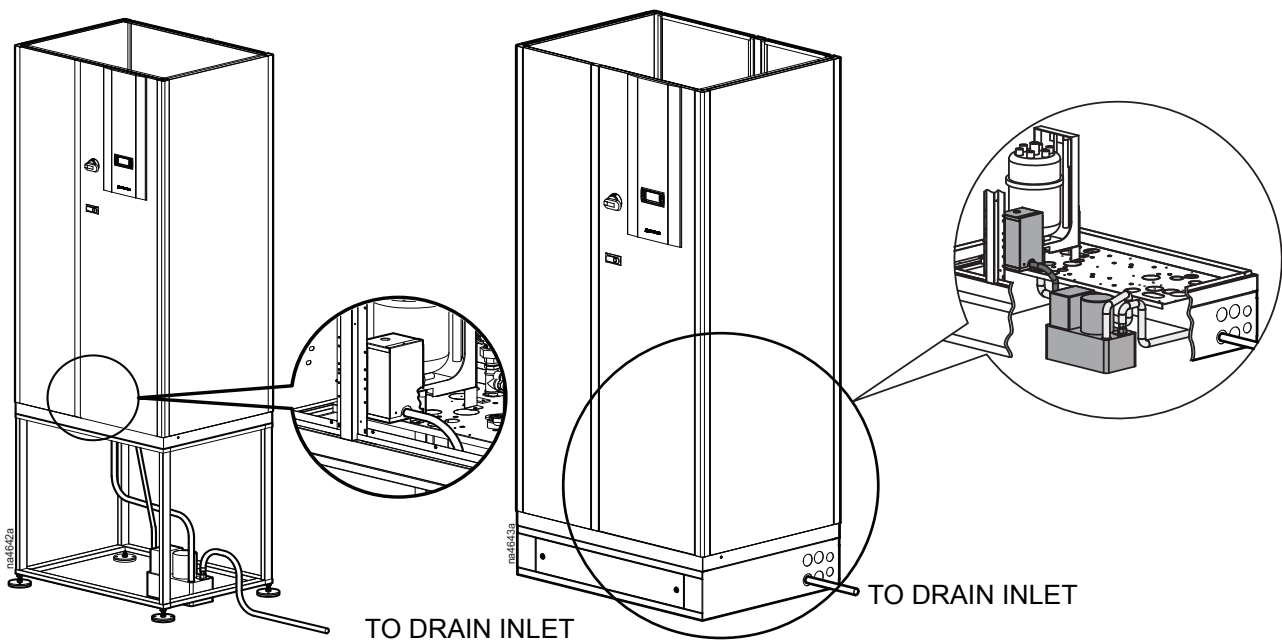
Unpack and inspect the pump. If damage is observed, call Schneider-Electric Technical Support. They will assist with repair or replacement.

1. Disconnect the electrical power at the power source (fuse box, circuit breaker, etc.) before wiring the pump or connecting the electrical cord.

Piping connections

1. Position the pump so the inlet is close to and below the drain line.

NOTE: The pump must be level.



2. Install flexible tubing or pipe from the pump to the drain inlet hole. Make sure the pipe does not interfere with the float.

IMPORTANT: Ensure a downward slope of the line in order to provide proper gravity drainage into the pump.

Wiring connections

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

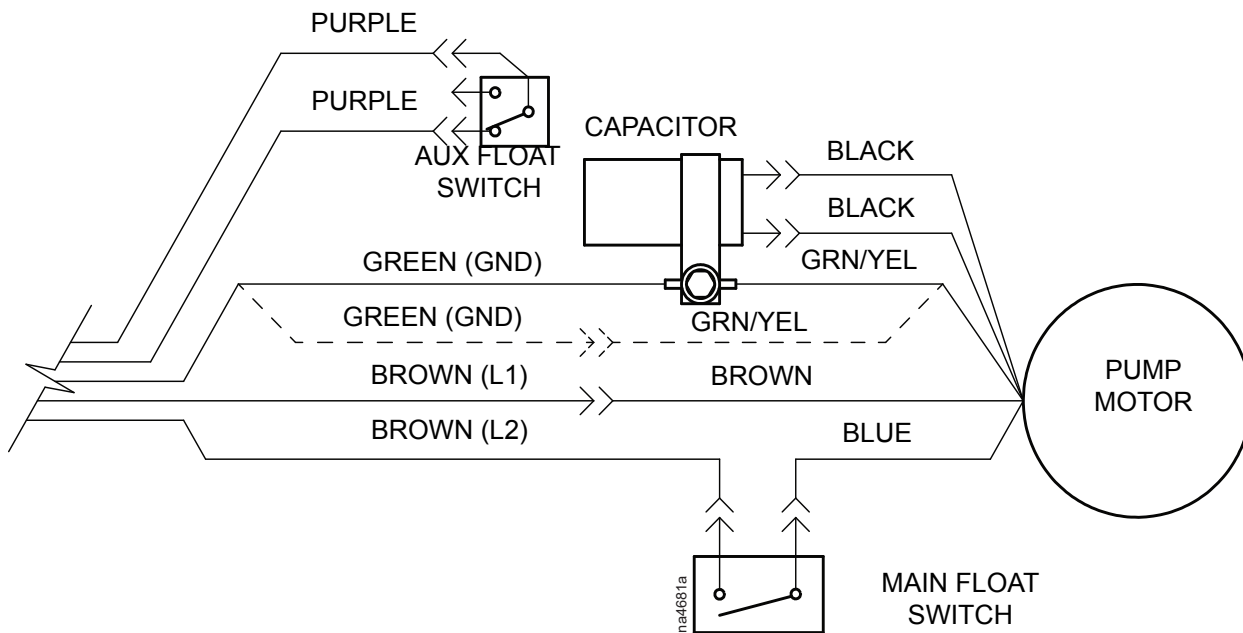
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

IMPORTANT: Connection to an intermittent power source will not allow for proper pump operation.

NOTE: The routing of wires inside the pump is critical. Keep all wires inside the pumps electrical enclosure clear of floats and switch actuation arms.

The following diagram provides a general diagram of wiring to the pump motor to the unit. This diagram is also located inside the cover of the pump. For the DX units, a junction box is provided to wire the cooling unit to the motor.

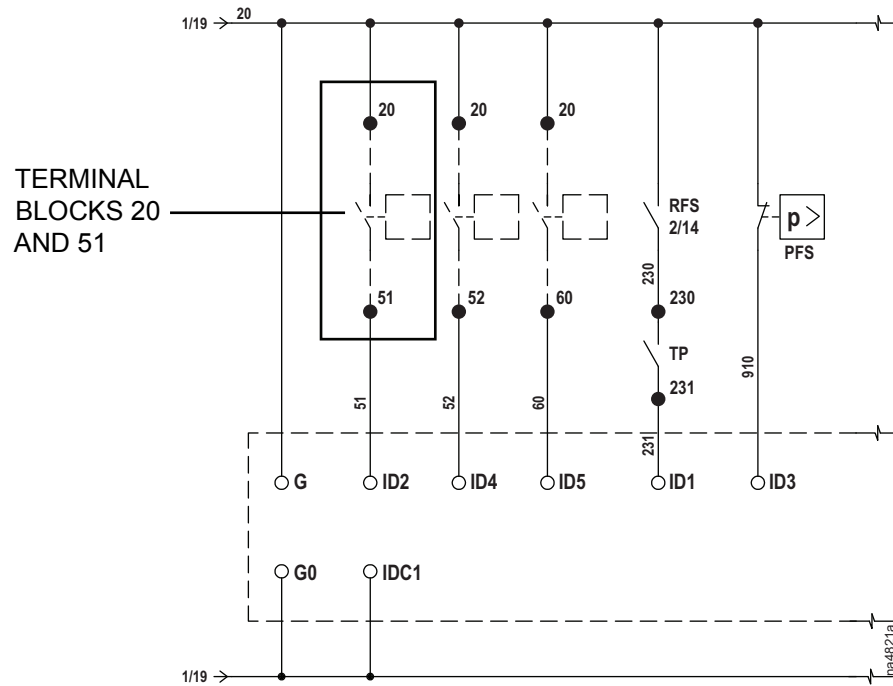


NOTE: Make certain that the line voltage corresponds to the voltage specified on the pump motor nameplate. For proper installation, connect the pump to a constant source of power.

NOTE: Never connect to Digital Input 2 directly. Always connect to a terminal block in the main electrical box or in the condensate pump electrical box.

Electrical connections to Chilled Water units

1. Disconnect power to the unit.
2. The following electrical diagrams provides connection details to connect the condensate pump to the Uniflair unit for CW-TD/UCV models. Use terminal blocks 20 and 51.



3. Connect the pump high float switch that leads to Digital Input 2 on the Uniflair unit (in series with leak detection if applicable). A high water level condition in the pump reservoir causes a “Flood Alarm” on the Uniflair unit. This alarm can be manually set to shutdown the unit if selected as a second level alarm. The following provides details on configuring the condensate pump to CW-TD/UCV models for Digital Input 2. Use the following settings:

User

Remote ON-OFF

Flooding sensor

4. If removed, replace the electrical component cover.
5. Apply power to the unit. The pump activates when the reservoir fills to the switch activation level.

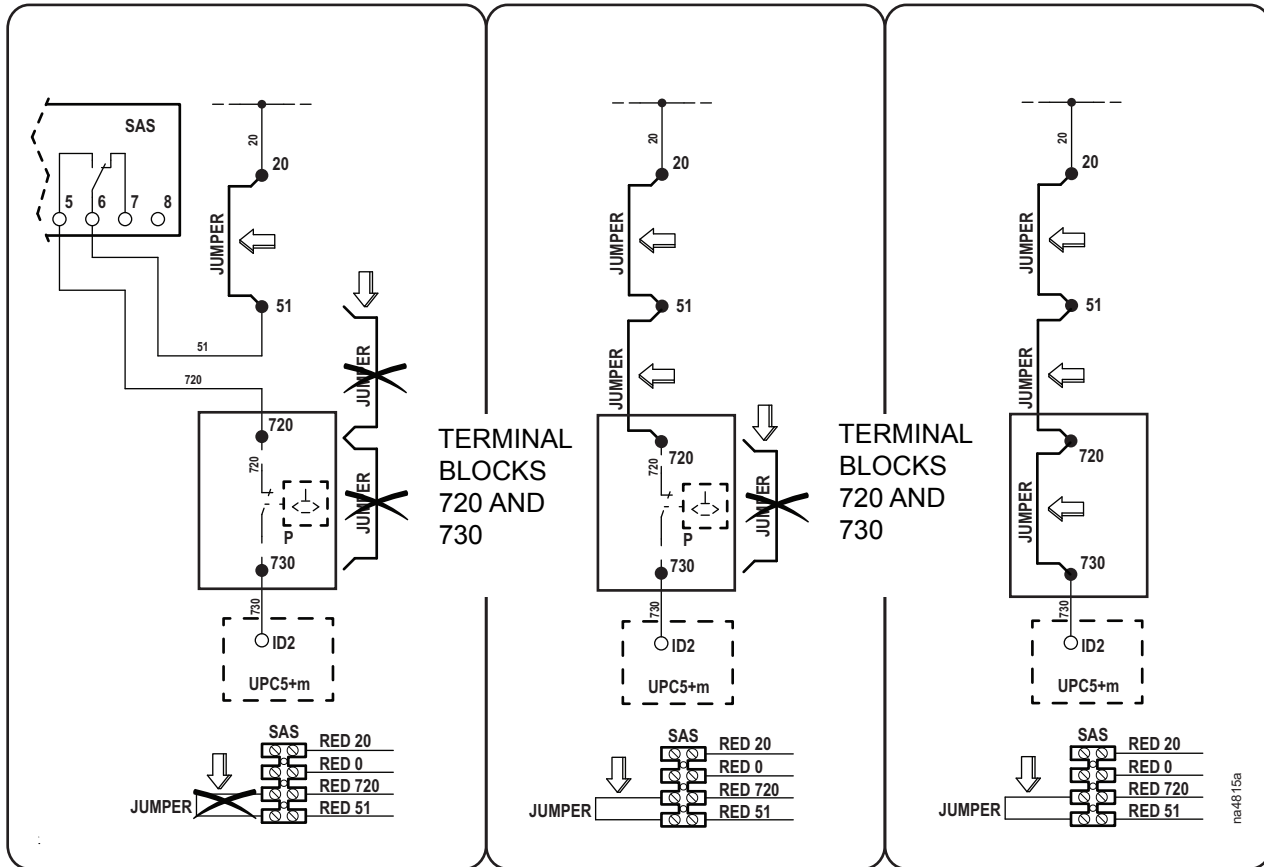
Electrical connections to Direct Expansion and HDCV units

1. Disconnect power to the unit.
2. The following electrical diagram provides details of connecting the condensate pump to the Uniflair unit. Use terminal blocks 720 and 730.

CONDENSATE DRAIN PUMP ALARM CONTACT

FLOODING DETECTORS + CONDENSATE DRAIN PUMP

STANDARD FACTORY INSTALLATION



3. Connect the pump high float switch that leads to Digital Input 2 on the Uniflair unit (in series with leak detection if applicable). A high water level condition in the pump reservoir causes a “Flood Alarm” on the Uniflair unit. This alarm can be manually set to shutdown the unit if selected as a second level alarm.
4. If removed, replace the electrical component cover.
5. Apply power to the unit. The pump activates when the reservoir fills to the switch activation level.

Configuration using the LED display interface

1. Turn on power to the unit and wait for the main screen to appear on the display.
2. Press **Prg**.
3. Select **SERVICE MENU**, then press **ENTER**.

NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password.

4. Press **ENTER**.
5. Select **HARDWARE SETTINGS** and press **ENTER**.
6. Navigate to “**DIGITAL INPUT 2 CONFIGURATION**”.
7. Check to ensure the existing setting is not used.
8. Press **ENTER** until the cursor stops under **NOT USED**.
9. Press **UP** or **DOWN** until “**FLOODING SENSOR**” appears on the display.
10. Press **ENTER**.
11. To exit, press the **ESC** key and navigate to the main screen.

Configuration using the touch screen display interface

Path: Main > Configuration > Unit > Digital Inputs

1. Turn power on to the unit on and wait for the touchscreen to display.
2. Set the following configurations:

NOTE: Settings may appear on a different screen.

Digital Input Two Configuration: Water Detection Sensors

Digital Input 2 Function: Alarm Signaling

Digital Input 2 Normal State: Normally Open

3. Press the **Home** button to return to the main screen.

Pump test

4. Remove the inlet tubing from the pump.
5. Pour water into the inlet until the pump turns on.
6. The pump will evacuate water, then turn off. It will leave about 19 mm (3/4 in.) of water in the tank after “pump-out” is complete.
7. Reconnect the inlet tubing to the pump.

Operation

After proper installation, the operation of the Uniflair condensate pump is automatic.

Troubleshooting

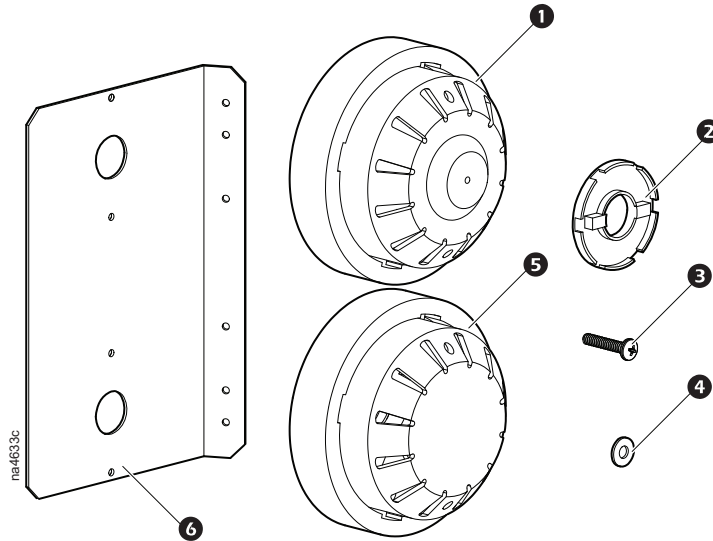
Under most circumstances, the pump requires little maintenance for efficient operation. If a problem occurs, check the following items or call Schneider-Electrical Technical Support. The following guidelines can help to return the pump to service.

- Check inlet and outlet piping for blockage or kinks that inhibits flow.
- Make sure the floats move freely.
- Make sure the pump impeller casing is not clogged
- Make sure the check valve is not clogged.

| Problem | Corrective Action |
|-----------------------------------|---|
| Pump does not run | <ul style="list-style-type: none">• Check that the cooling unit has power.• Check that the pump is plugged in and the circuit is active (fuse or breaker is not off).• Check the level of water in the reservoir. The level must be within 50.8 mm (2 in.) of the reservoir top to activate the switch. The inlet tube may be blocked and require cleaning if no water is entering the reservoir.• If there is a proper amount of water in the reservoir, the float may be stuck due to dirt or algae formation. Flush the reservoir with warm water and a mild soap or detergent. <p>Note: In case of extreme algae formation, unplug the pump and fill the reservoir with a commercially available algaecide. Follow the directions for destroying the algae. After the proper waiting period, dump the algaecide out of the reservoir. Rinse with water, repeat if necessary. Be careful not to clog the check valve when starting the pump after cleaning.</p> |
| Pump motor runs with no discharge | <ul style="list-style-type: none">• Inspect the full length of discharge tubing to make sure it is clear. Check to ensure the tubing end is not clogged.• Make sure the check valve is not clogged. If clogged, unplug the pump, remove the fitting, and clean with mild soap or detergent.• The discharge port of the impeller chamber may be clogged due to an accumulation of debris. |

Smoke and Fire Sensors

Inventory



NOTE: Inspect for missing components. If parts are missing, contact Schneider Electric Technical Support.

| Item | Description | Quantity |
|------|----------------------------|----------|
| ❶ | Smoke sensor (ACAC76115) | 1 |
| ❷ | Rubber grommet | 2 |
| ❸ | Phillips screws | 4 |
| ❹ | Washers | 4 |
| ❺ | Fire sensor (ACAC76116) | 1 |
| ❻ | Metal installation bracket | 1 |

Installation

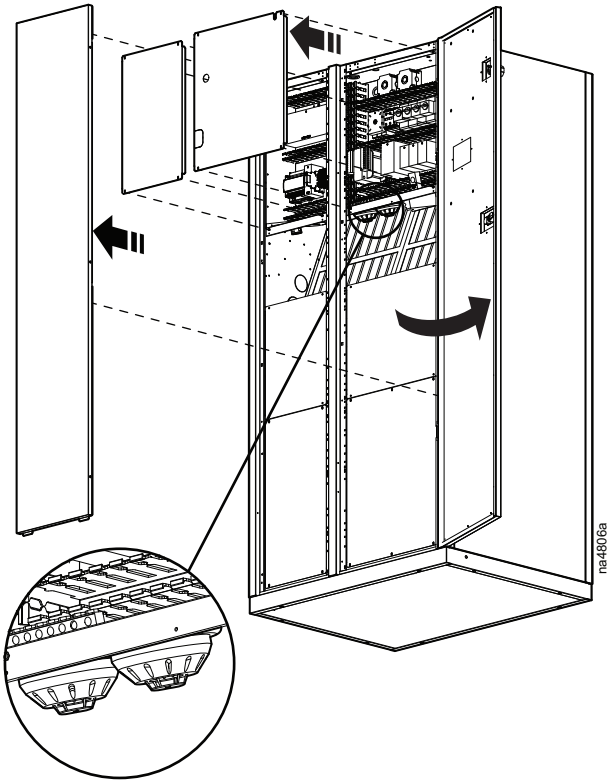
⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

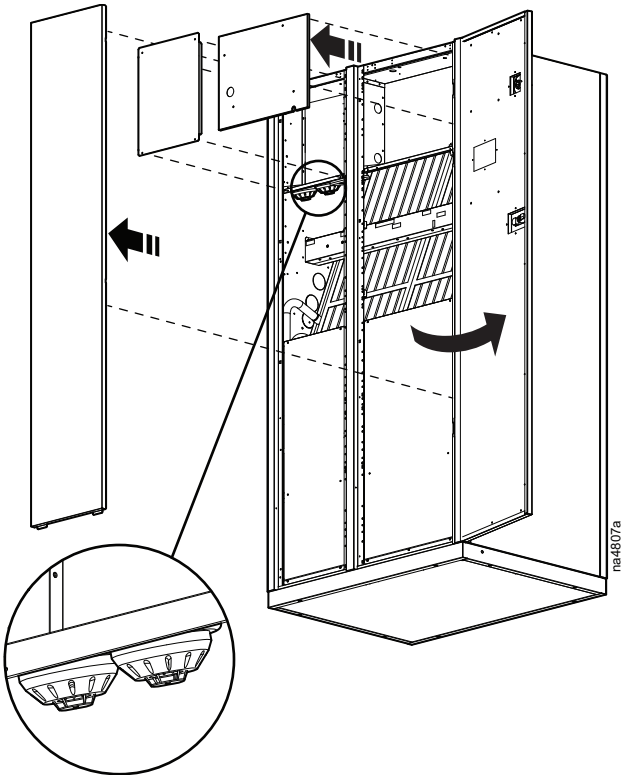
Failure to follow these instructions will result in death or serious injury.

Locate the installation location for the sensor based on the unit type and model. The following graphics provide installation locations based on model number.



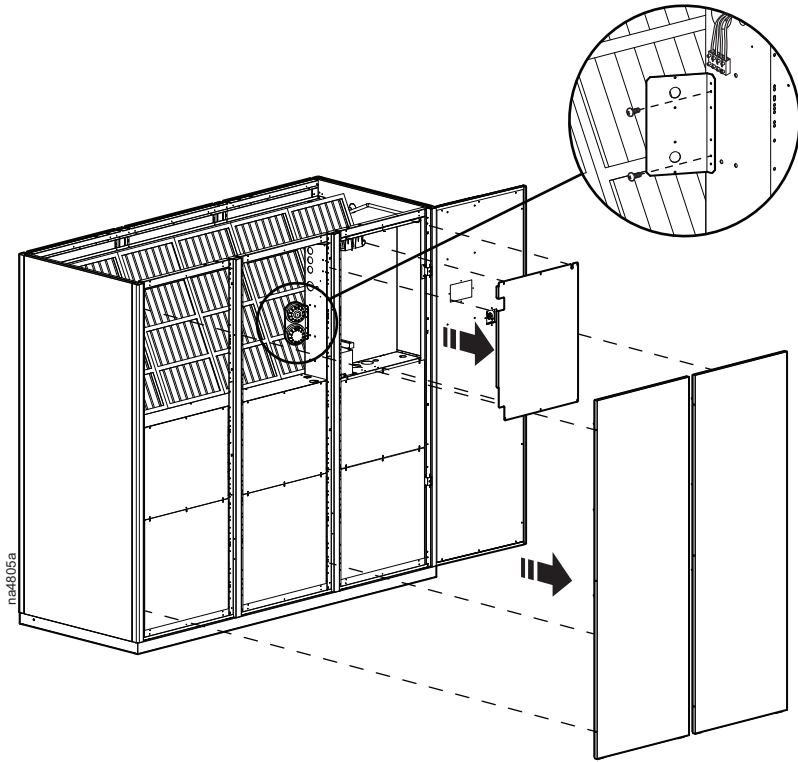
MODEL

- TD/UAV 0511 - 0611
- TD/UWV 0511 - 0611
- TD/UEV 0511 - 0611
- TD/UDV 0511 - 0611
- TD/UTV 0511 - 0611



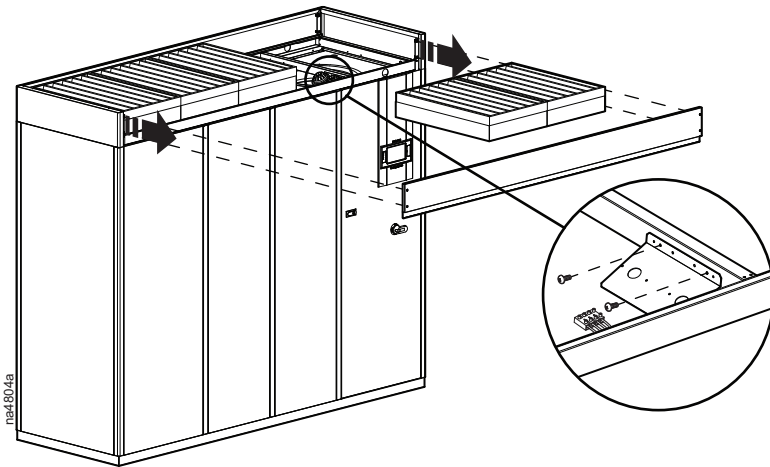
MODEL

- TD/UCV 0700



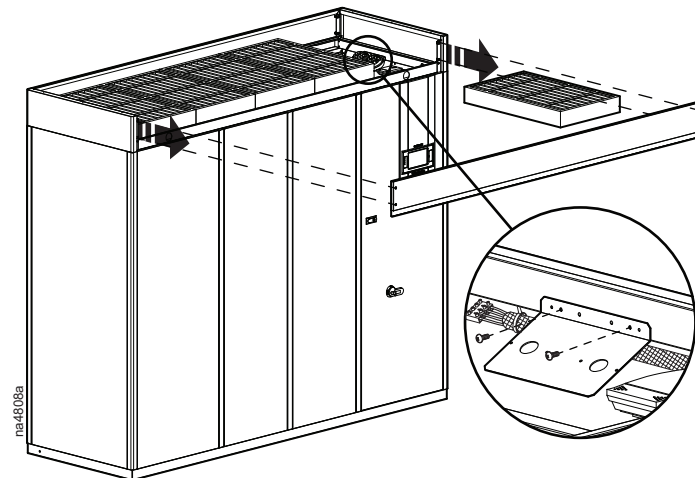
MODEL

- TD/UAV 0921 - 1822
- TD/UWV 0921 - 1822
- TD/UEV 0921 - 1822
- TD/UDV 0921 - 1822
- TD/UTV 0921 - 1822
- TUAV 2242 - 3342
- TUWV 2242 - 2842
- TUEV 2242 - 2842
- TUDV 2242 - 2842
- TUTV 2242 - 2842
- TD/UCV 1000 - 3400
- TDCV 4000



MODEL

- TDAV 2242 - 3342
- TDWV 2242 - 2842
- TDEV 2242 - 2842
- TDDV 2242 - 2842
- TDTV 2242 - 2842



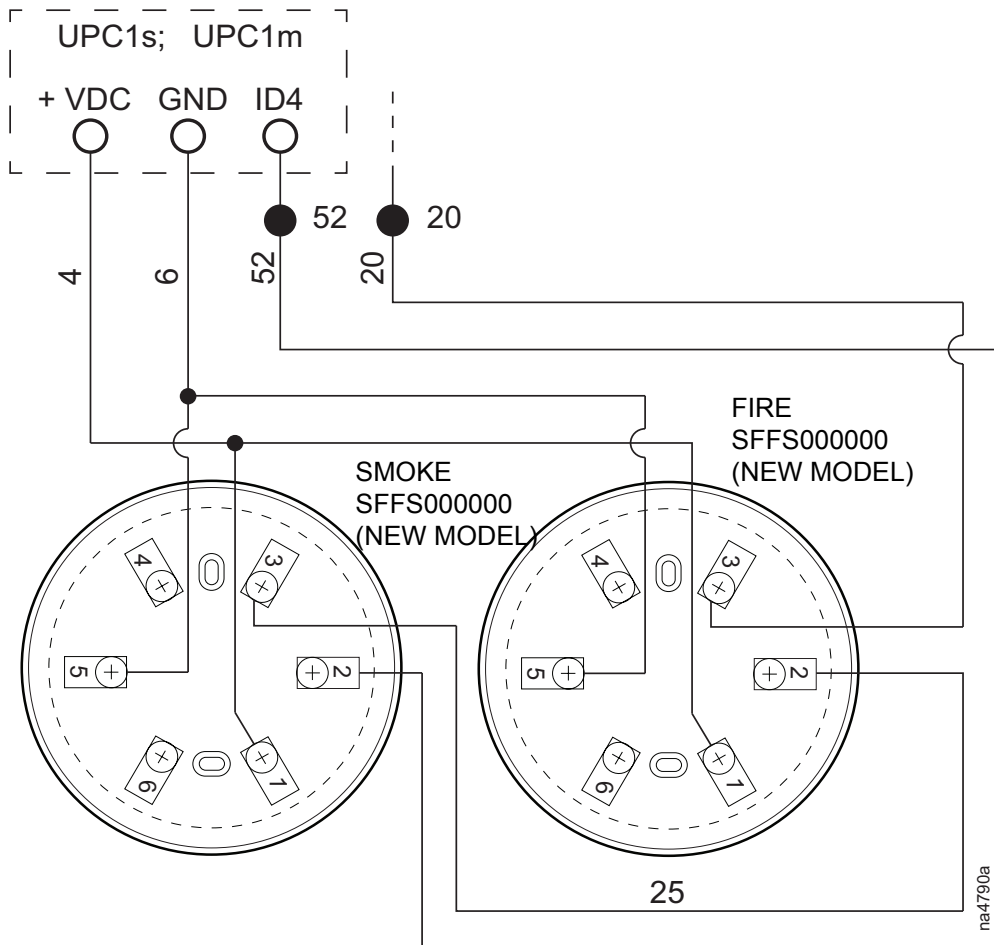
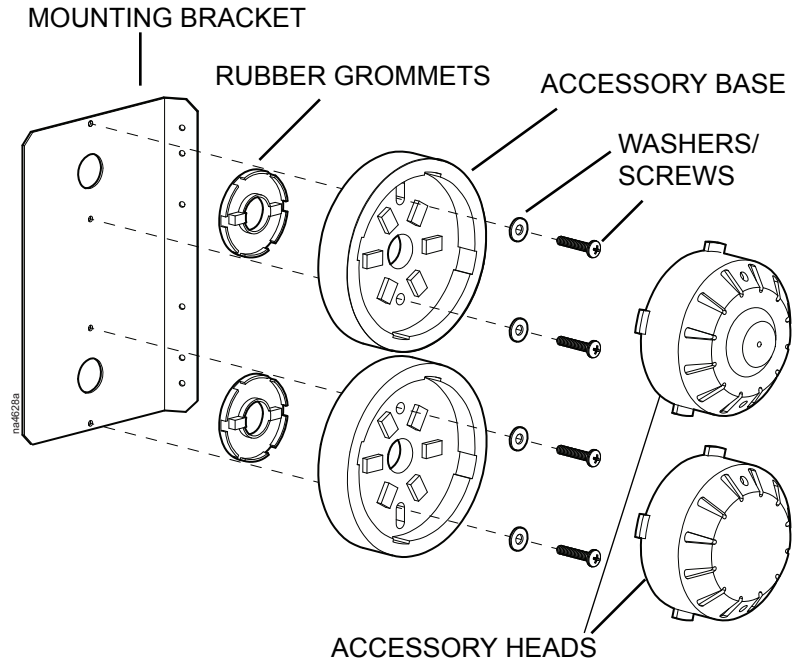
MODEL

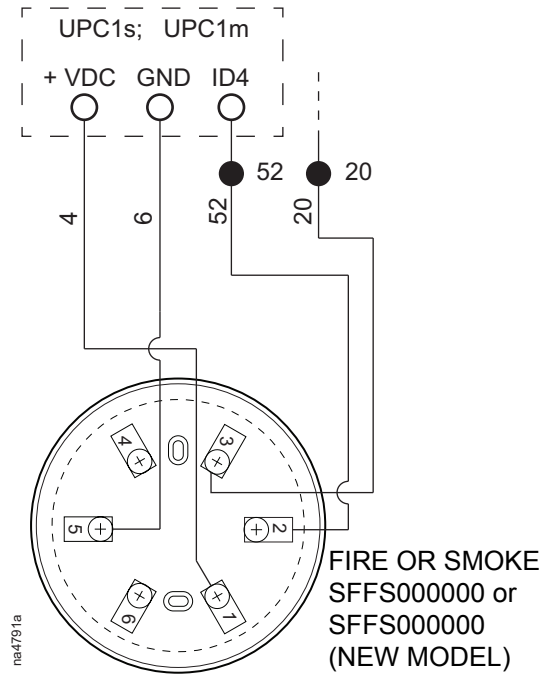
- TDCV4300

2. Remove any necessary unit paneling and/or filters to access the bracket installation location.
3. Secure the bracket to the proper location with the Phillips screws.

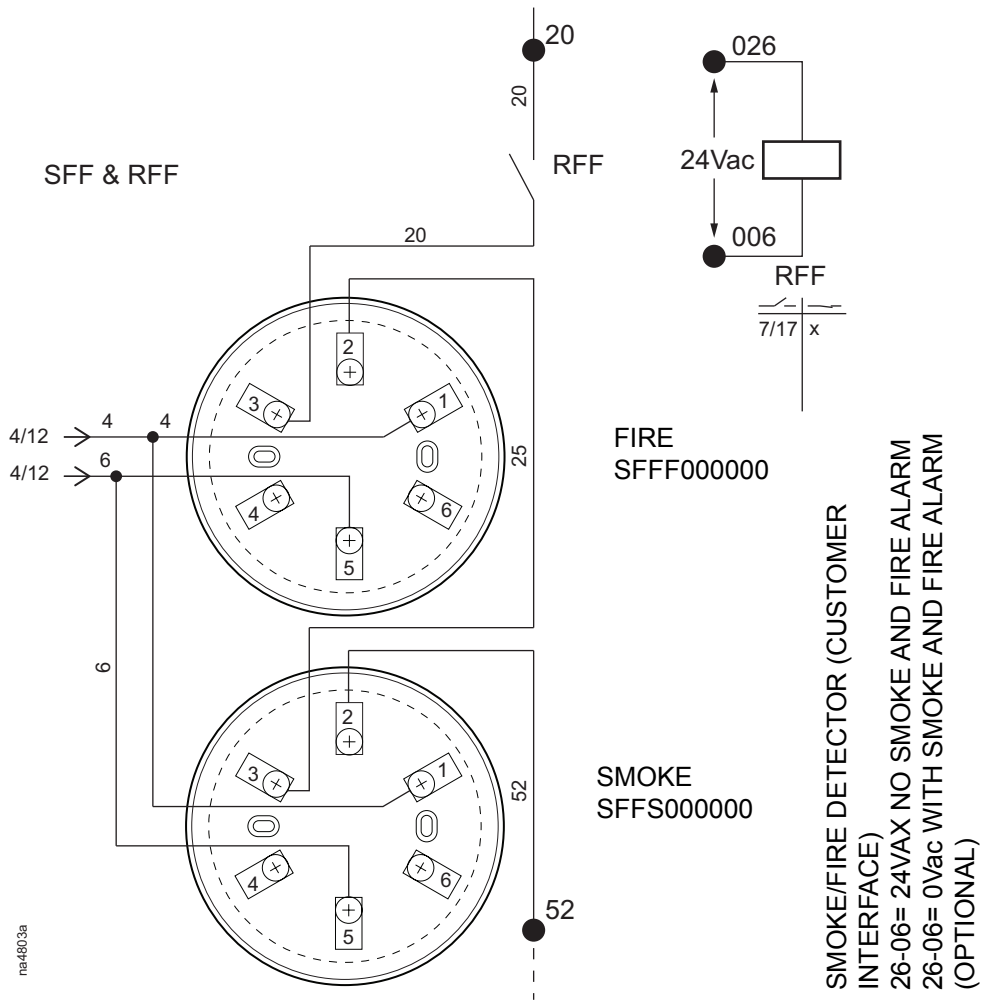
There are two mounting positions:
horizontal and vertical.

- a. Place rubber grommet inside bracket holes.
 - b. Remove the head of the sensor by gently twisting to the left to separate the base.
 - c. Secure the base of the sensor using the screws and washers provided.
 - d. Screw the head of the accessory back on.
4. Depending on the manufacturing date, the design may be different for each sensor. Locate the proper sensor design in the following wiring diagrams and connect the wires accordingly.





The following graphic provides details to wire the smoke and fire detectors in 24 V series.



5. Locate the terminal connection harness near or close to the recommended installation location.

6. Follow the wiring directions given in wiring diagrams above to match labeled connections (wires not supplied).
7. Once one or both sensors are wired to the terminal, reattach the head of the sensor to the base by turning to the right.

Configuration using the LED display interface

1. Turn on the power to the unit and wait for the main screen to appear on the display.
2. Press **Prg**.
3. Select **SERVICE MENU**, then press **ENTER**.

NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password.

4. Press **ENTER**.
5. Select **HARDWARE SETTINGS** and press **ENTER**.
6. Navigate to "DIGITAL INPUT 4 CONFIGURATION".
7. Check to ensure the existing setting is not used. If this does not correspond to your settings, whatever function is currently attributed to that digital input of the control will be lost at the end of this procedure and replaced with the one relative to the operation of the fire-smoke sensor.
8. Press **ENTER** until the cursor stops under **NOT USED**.
9. Press **UP** or **DOWN** until "SMOKE-FIRE SENSOR" appears on the display.
10. Press **ENTER**.
11. To exit, press the **ESC** key and navigate to the main screen.

After completion of the above procedure, an alarm signal displays on the display interface in case of fire or smoke, and the unit stops operating.

Configuration using the touch screen display interface

Path: Main > Configuration > Unit > Digital Inputs

1. Turn on the power to the unit and wait for the touch screen to display.
2. Set the following configurations:

NOTE: Settings may appear on a different screen.

Digital Input 4 Configuration: Smoke-Fire Sensor

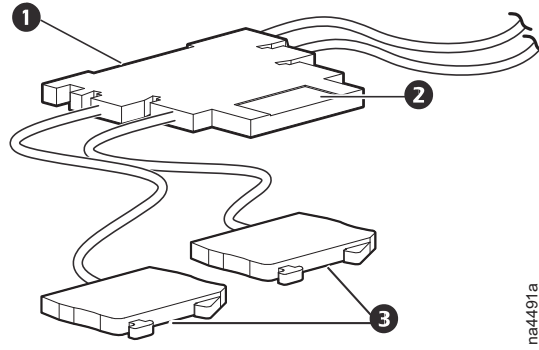
Digital Input 4 Function: Alarm Signaling

Digital Input 4 Normal State: Normally Open

3. Press the **Home** button to return to the main screen.

24 V Relay for External Smoke/Fire Alarm

Inventory



na4491a

| Item | Description | Quantity |
|------|-----------------|----------|
| ① | Relay socket | 1 |
| ② | 24V relay coil | 1 |
| ③ | Terminal blocks | 2 |

Installation

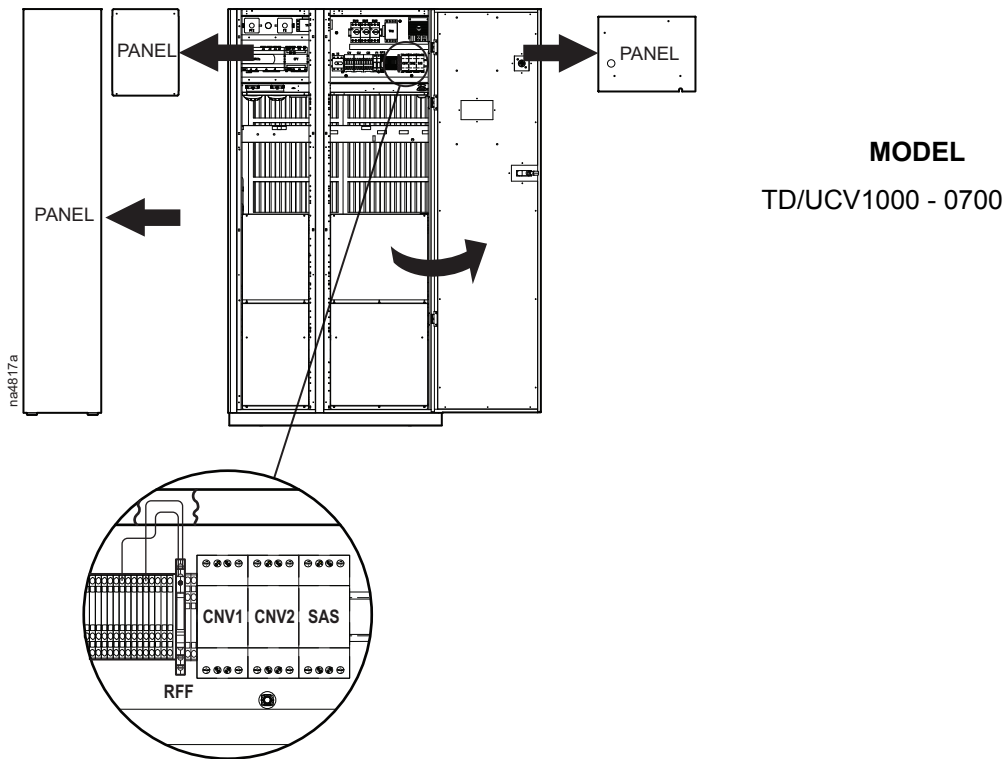
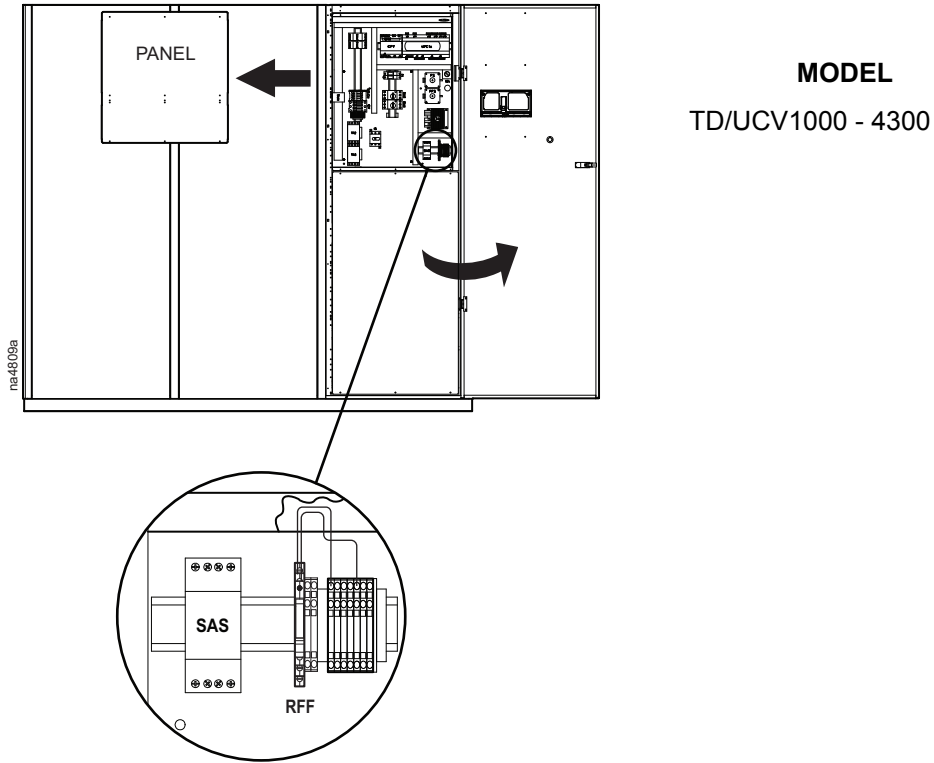
⚠ ⚠ DANGER

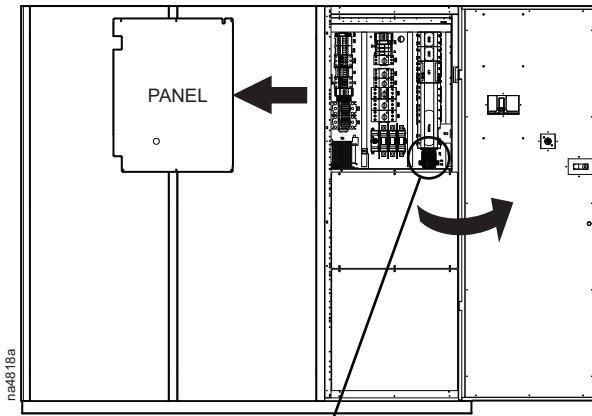
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

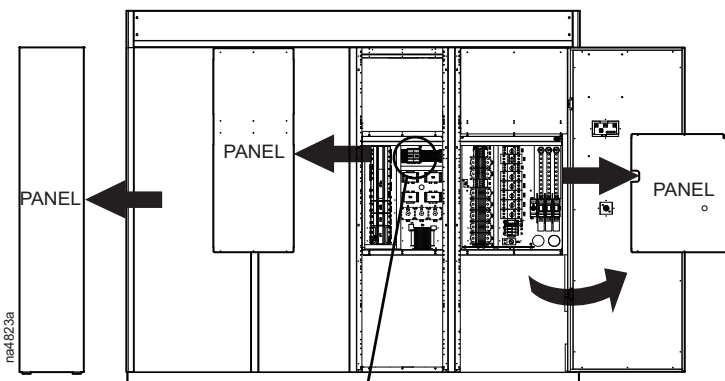
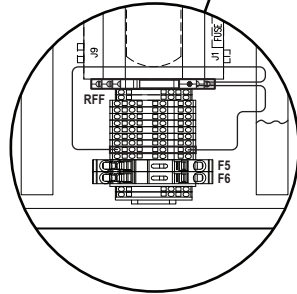
Locate the mounting location based on the unit model. The following graphics provide mounting locations.





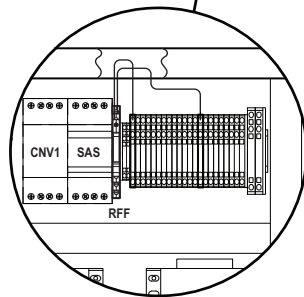
MODEL

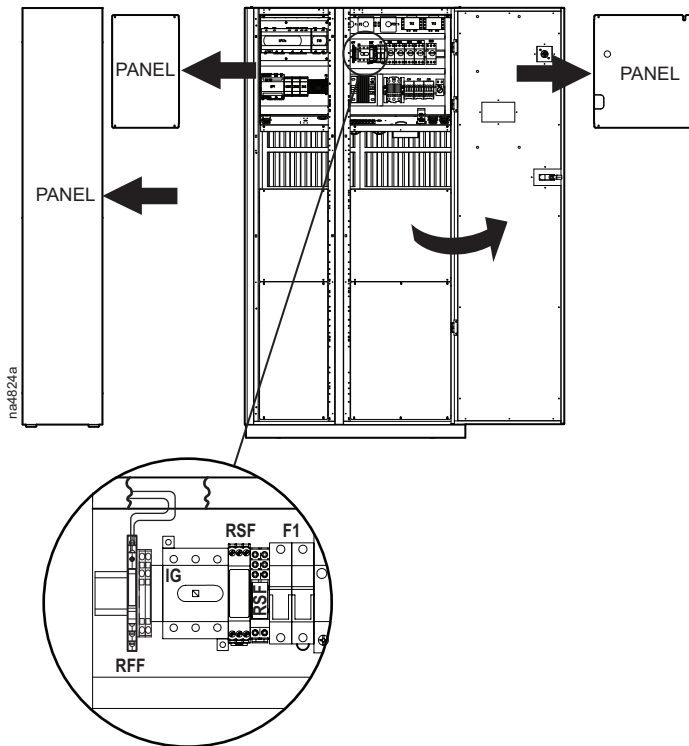
- TD/UAV0921 - 1822
- TD/UWV0921 - 1822
- TD/UEV0921 - 1822
- TD/UDV0921 - 1822
- TD/UTV0921 - 1822



MODEL

- TD/UAV2242 - 3342
- TD/UWV2242 - 2842
- TD/UEV2242 - 2842
- TD/UDV2242 - 2842
- TD/UTV2242 - 2842

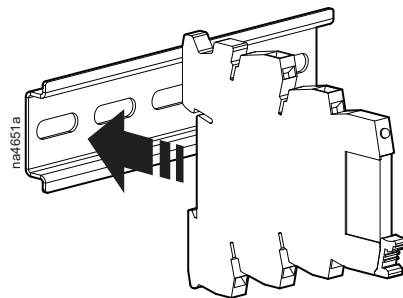




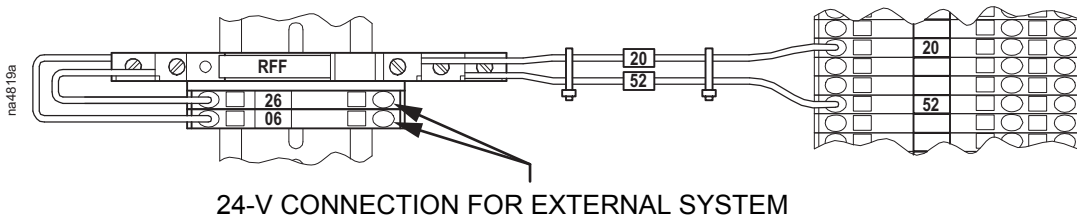
MODEL

TD/UAV0511 - 0611
 TD/UWV0511 - 0611
 TD/UEV0511 - 0611
 TD/UDV0511 - 0611
 TD/UTV0511 - 0611

2. Attach the relay socket and terminal blocks to the DIN rail.



3. Connect wire 20 and 52 on the labeled terminal blocks inside the electrical box. Wire routing may be needed on some units.



4. Connect the customer/external wiring to terminal blocks 026 and 006.

NOTE: This requires an external 24-V signal (DC or AC).

Configuration using the LED display interface

1. Turn on the power to the unit.
2. Navigate to the Digital Input 4 Selection Screen.
3. Change the setting to "Smoke-Fire Sensor".
4. Test the smoke and fire alarms to ensure proper function. Alarm will activate when the 24 V signal is received or lost, depending on customer setup.

Tips:

- The relay is physically configurable between NC (Normally Closed) or NO (Normally Open). The relay is Normally Open by default.
- The relay can be installed in series with the internal smoke/fire detection system.
- Input (ID4) is the default "Type A" alarm. It also requires a MANUAL reset by default. It is recommended to isolate ID4 as a "Type B" alarm for Smoke/Fire (Type B not available on models T*EV0511-0611).
- The relay coil must be powered by an outside source (customer supplied 24 V).

Configuration using the touch screen display interface

Path: Main > Configuration > Unit > Digital Inputs

1. Turn on the power to the unit and wait for the touch screen to display.
2. Set the following configurations:

Digital Input 4 Configuration: Smoke-Fire Sensor

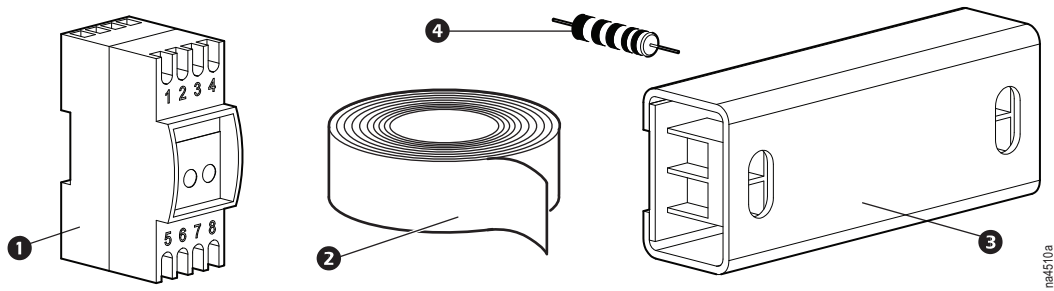
Digital Input 4 Function: Alarm Signaling

Digital Input 4 Normal State: Normally Open

3. Press the **Home** button to return to the main screen.

Water Leak Detectors

Inventory



| Item | Description | SKU | Quantity |
|------|---|-----------|----------|
| ① | Flooding sensor detector (SAS module) | N/A | 1 |
| ② | Water leak detecting strip, 25 m (82 ft) | ACAC76118 | 1 |
| ③ | Spot water detector | ACAC76119 | 1 |
| ④ | 10-kOhm resistor Note: Taped to the back of the spot water detector. | N/A | 1 |

Installation

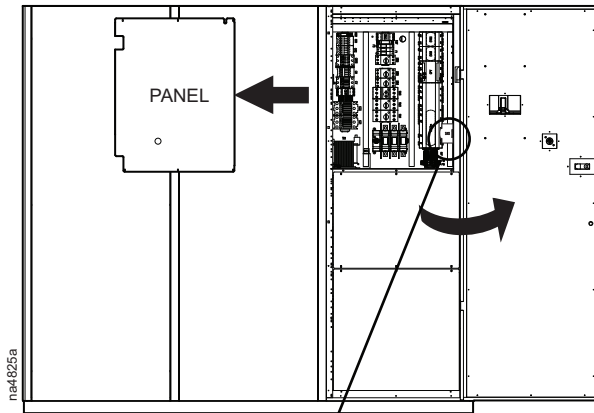
⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

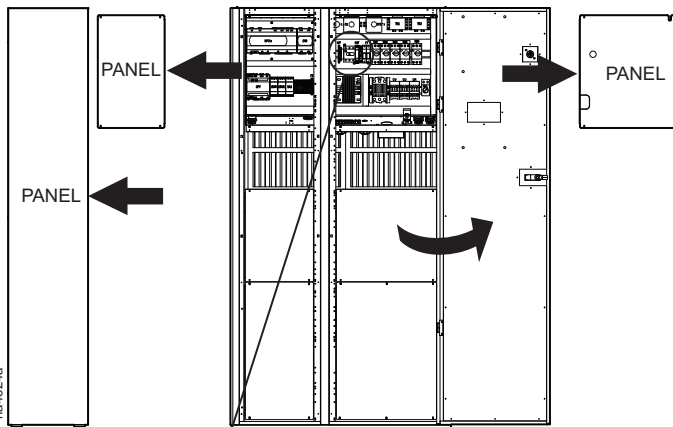
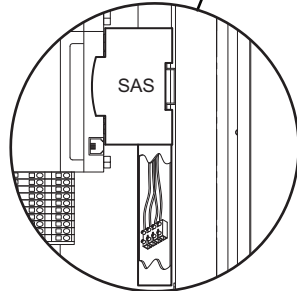
Failure to follow these instructions will result in death or serious injury.

Locate the unit in the following diagrams to find the installation location of the SAS module in the electrical panel.



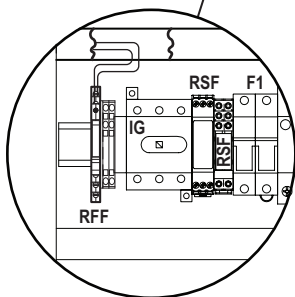
MODEL

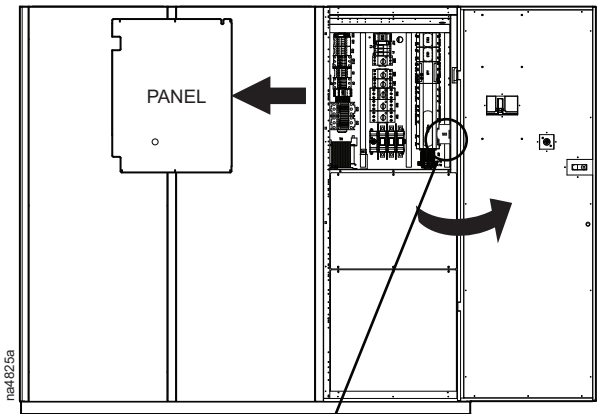
- TD/UCV1000
- TD/UCV1200
- TD/UCV1700
- TD/UCV2500
- TD/UCV3400
- TD/UCV4000
- TDCV4300



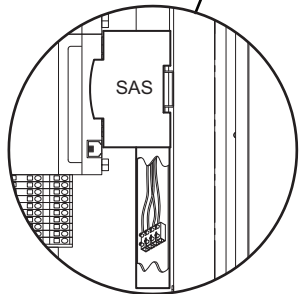
MODEL

- TD/UCV0700



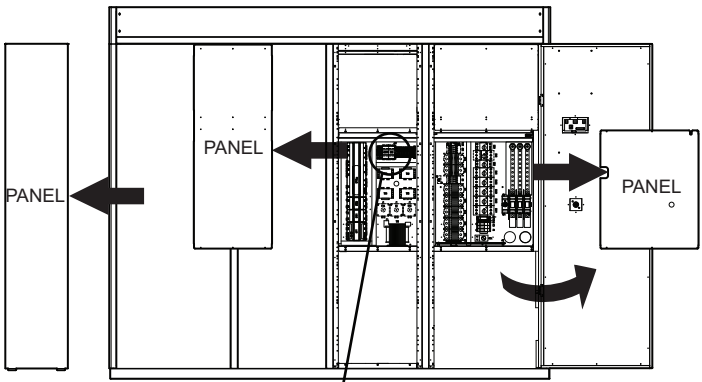


na4825a

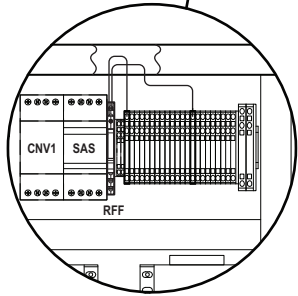


MODEL

- TD/UAV0921 - 1822
- TD/UWV0921 - 1822
- TD/UEV0921 - 1822
- TD/UDV0921 - 1822
- TD/UTV0921 - 1822

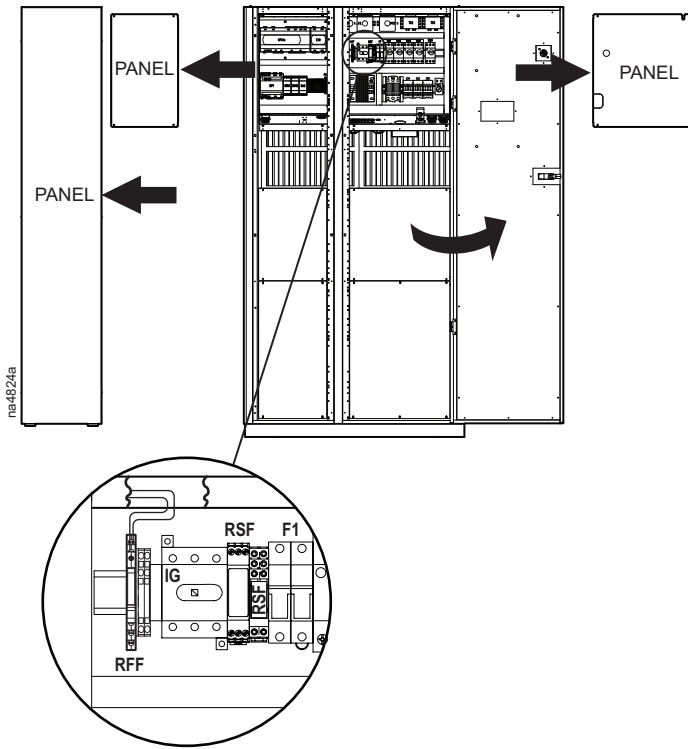


na4823a



MODEL

- TD/UAV2242 - 3342
- TD/UWV2242 - 2842
- TD/UEV2242 - 2842
- TD/UDV2242 - 2842
- TD/UTV2242 - 2842

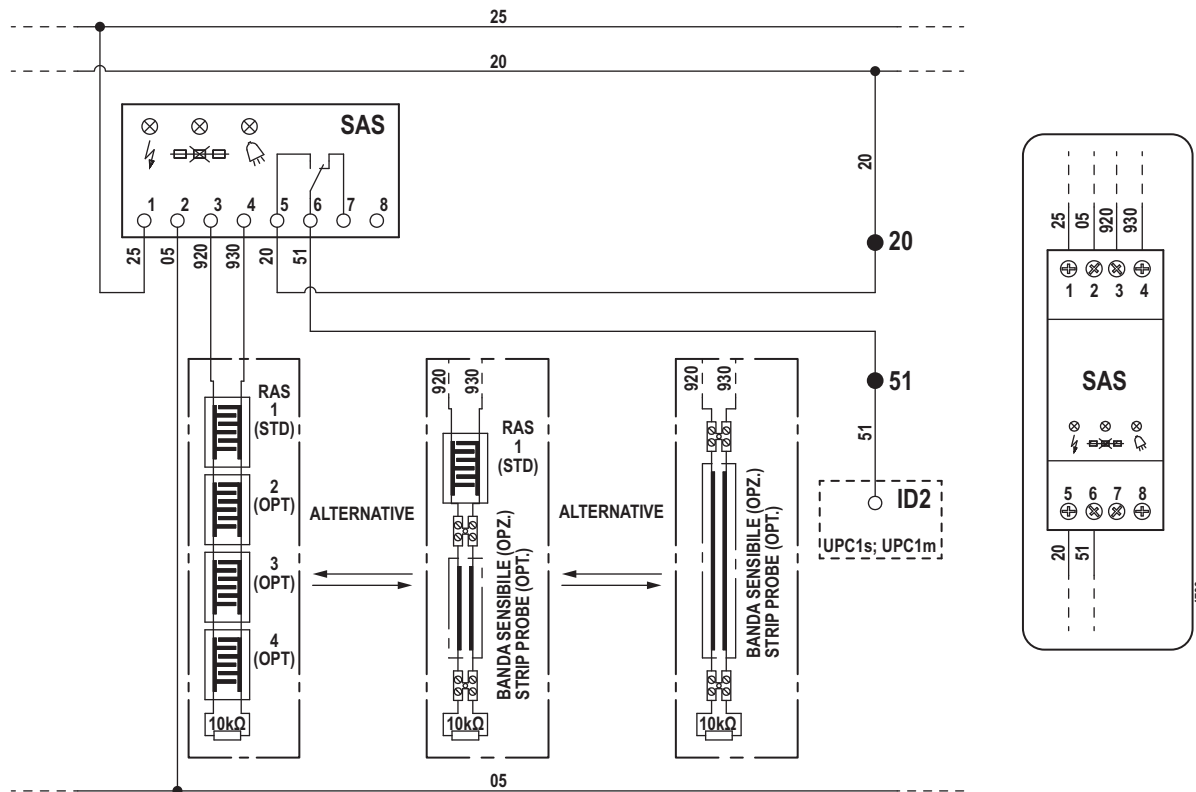


MODEL

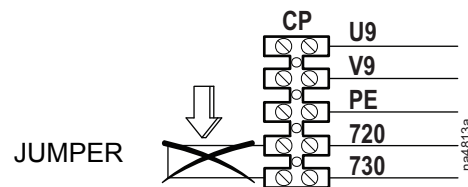
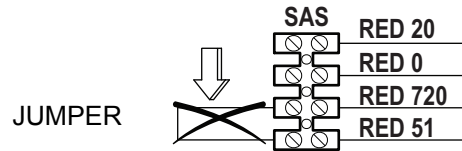
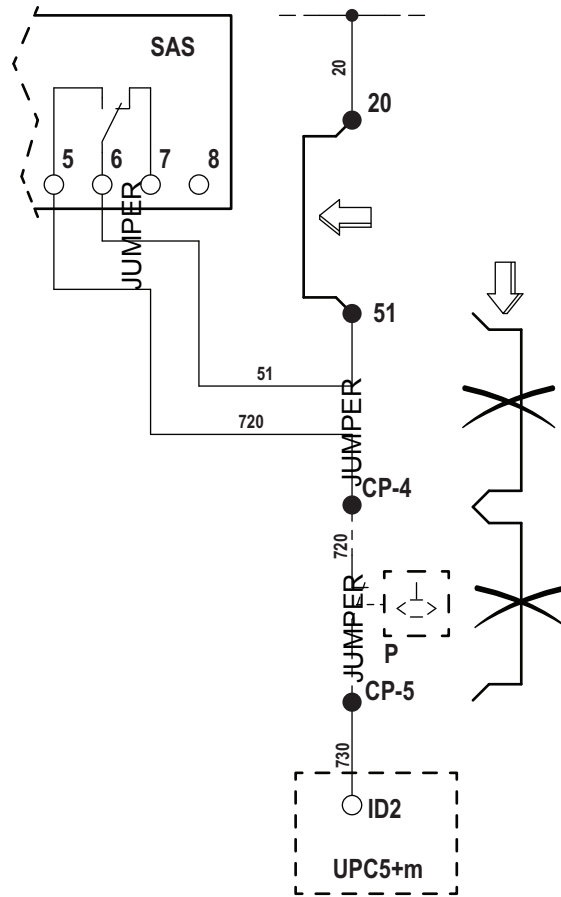
- TD/UAV0511 - 0611
- TD/UWV0511 - 0611
- TD/UEV0511 - 0611
- TD/UDV0511 - 0611
- TD/UTV0511 - 0611

2. Install the SAS module in the proper location on the DIN rail.
3. The following provides wiring diagrams based on unit type:
 - a. For T*CV units:

STANDARD WIRING DIAGRAM T*CV

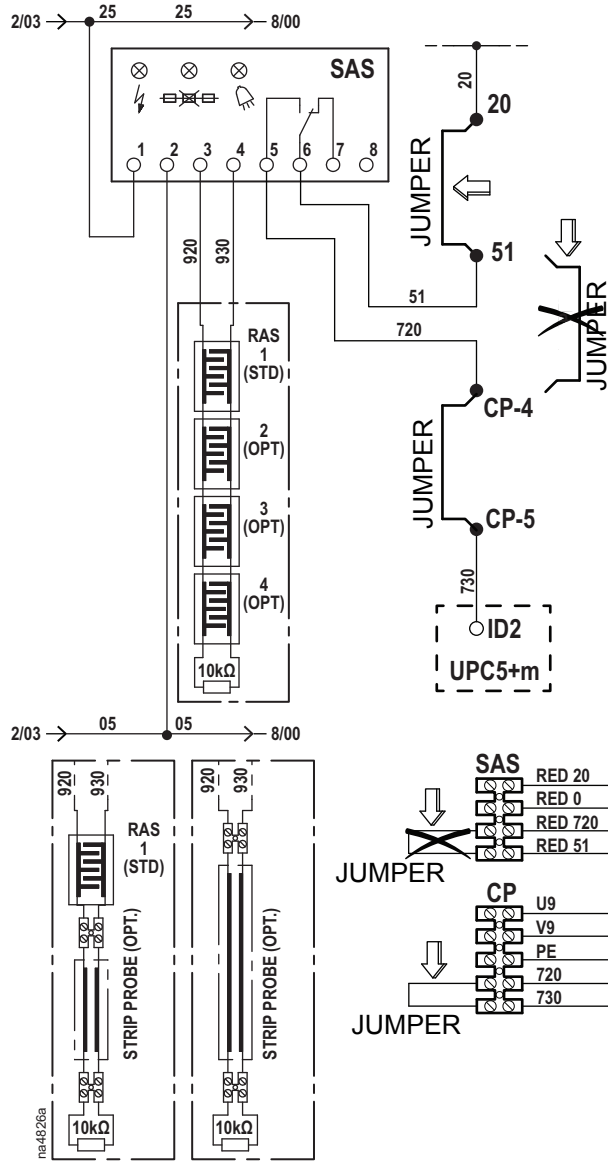


FLOODING DETECTOR + CONDENSATE DRAIN PUMP ALARM CONTACT

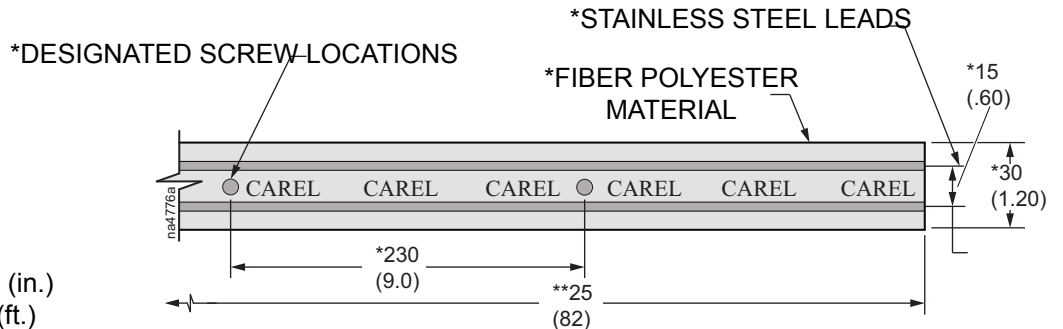


na4813a

FLOODING DETECTOR



4. The sensor is normally closed, and the alarm activates when the circuit is completed by either the spot or tape detectors when water is present.
5. After the wiring to the unit is complete, locate a proper position/layout location for the tape or spot leak detector.



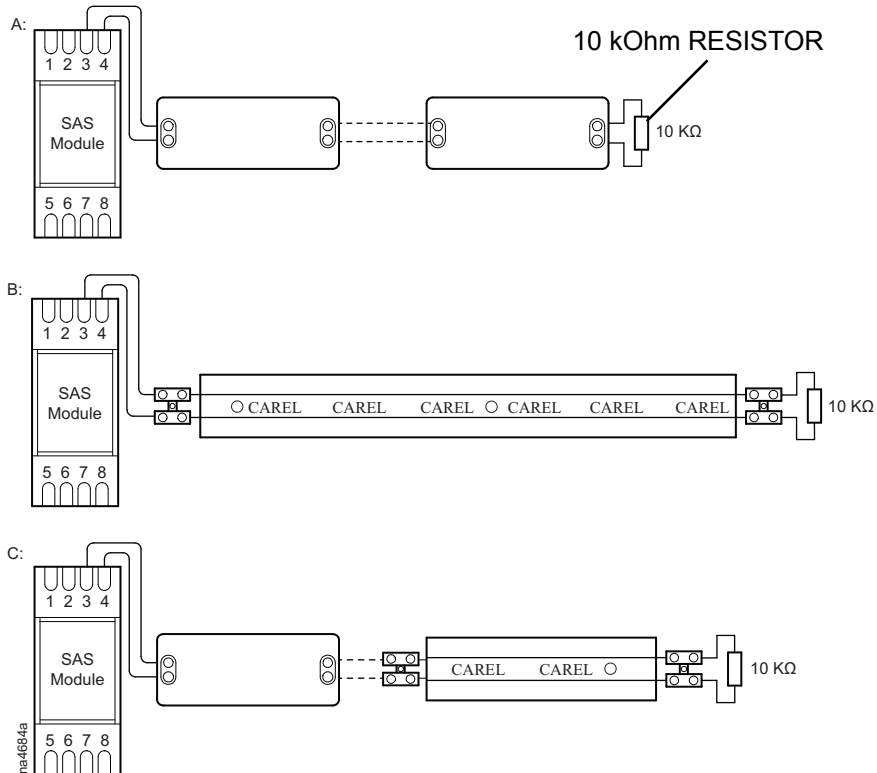
*Dimensions shown in mm (in.)

**Dimensions shown in m (ft.)

6. The tape sensor provides water leak detection along the entire length of the strip and can be placed on the floor or on other surfaces, e.g. wrapped around pipes and flanges. It can be fastened using screws, silicon, or clamps.
7. The spot sensor is made up of a corrosion-proof metal container, with access to the two terminals for connecting the line.
8. The following diagram displays typical connection layouts. Terminate the line with the provided 10 kOhm resistor (see the graphic below) at the end of the tape/spot sensor chain.

NOTE: The wiring between the flooding sensor (SAS module) and the water leak detector strip is customer provided.

NOTE: The resistor is located on the back of the detector.



NOTE: There is no limit to the number of spot sensors that can be installed. The maximum wiring distance is 487 m (1600 ft).

9. After layout is complete and the 10 kOhm resistor is attached, wire the sensor(s) back to terminals 3 and 4 of the SAS module inside the unit.

TIPS

- The 10-kOhm resistor is taped on back of SAS module.
- The alarm is activated by the presence of water or the condensate pump alarm contact.
- The alarm will only cause the unit to switch off if it has been chosen as a second level alarm.
- The alarm can be configured to activate the standby unit in a group. This is set under “Rotational Standby Alarms”.

LED status lights

| Condition | Description |
|-----------|--|
| Green | Power supply present |
| Yellow | Sensor(s) not connected to the SAS module or line not terminated with the 10 kOhm resistor |
| Red | Water present (alarm) |

Additional installation details

| Power Details | Description |
|--|---|
| Power supply | 24 V +/- 10% 50/60Hz |
| Maximum power input | 1.5 VA |
| Maximum length of wiring from sensor to SAS module | 500 m (1640 ft), with single-wire cable and double insulation |
| Length of tape sensor | 25 m (82 ft) |
| Diameter of stainless steel wiring for tape sensor | 0.6 mm (0.24 in.) |

Configuration using the LED display interface

1. Turn on the power to the unit and wait for the main screen to appear on the display
2. Press **Prg**.
3. Select **SERVICE MENU**, then press **ENTER**.
4. Enter the password.
NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password instead
5. Press **ENTER**.
6. Select **HARDWARE SETTINGS**, then press **ENTER**.
7. Navigate to **DIGITAL INPUT 2 CONFIGURATION**.
8. Check to ensure that the existing setting is not used. If this does not correspond to your settings, whatever function is currently attributed to that digital input of the control will be lost at the end of this procedure and replaced with the one relative to the operation of the flooding detector.
9. Press **ENTER** until the flashing cursor stops under **NOT USED**.
10. Navigate to **FLOODING SENSOR** appears on the display.
11. Press **ENTER**.
12. To exit, press the **ESC** key and navigate to the main screen.
13. Test the accessory to ensure proper function. The alarm will trip when a 24 V signal is received due to water presence.

Additional Settings

1. Under **Hardware Settings**, select **Flooding Alarm**.
The Off setting on the alarm defaults to "N". This indicates that the unit will not shutdown when the alarm activates.
2. Change this setting to "Y" to enable an active leak/flooding/condensate alarm to shutdown the unit.
3. By default, "Valve Closed" on AI. is set to "N". Selecting "Y" enables the water valve (if applicable) to close if the leak/flooding/condensate pump alarm is active.

Configuration using the touch screen display interface

Path: Main > Configuration > Unit > Digital Inputs

1. Turn on the power to the unit and wait for the touch screen to display.
2. Set the following configurations:

Digital Input 4 Configuration: Water Detection Sensors

Digital Input 4 Function: Alarm Signaling

Digital Input 4 Normal State: Normally Open

3. Press the **Home** button to return to the main screen.

Automatic Floor Pressurization System

Overview

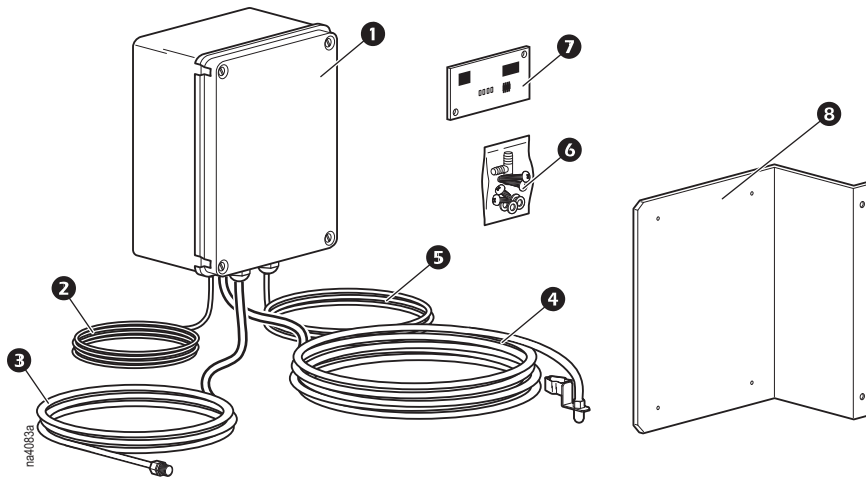
The Automatic Floor Pressurization System (AFPS) (ACAC76128) maintains air pressure underneath a raised floor to a desired setpoint. By modulating fan speed, an AFPS kit for Uniflair Chilled Water (CW) units compensates for air pressure changes in an active and growing data center.

NOTE: The AFPS is not recommended for Direct Expansion units.

The AFPS kit is supported by the following Uniflair CW models:

- TDCV0700
- TDCV1000
- TDCV1200
- TDCV1700
- TDCV2500
- TDCV3400
- TDCV4000
- TDCV4300
- HDCV4500
- HDCV5000

Inventory



| Item | Description | Quantity |
|------|--|----------|
| 1 | AFPS controller | 1 |
| 2 | Power supply harness | 1 |
| 3 | Above-floor pressure sensor tubing | 1 |
| 4 | Below-floor pressure sensor tubing | 1 |
| 5 | Communication wiring | 1 |
| 6 | Installation hardware (screws and washers) | 1 |
| 7 | tLAN card | 1 |
| 8 | Mounting bracket | 1 |

Installation

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

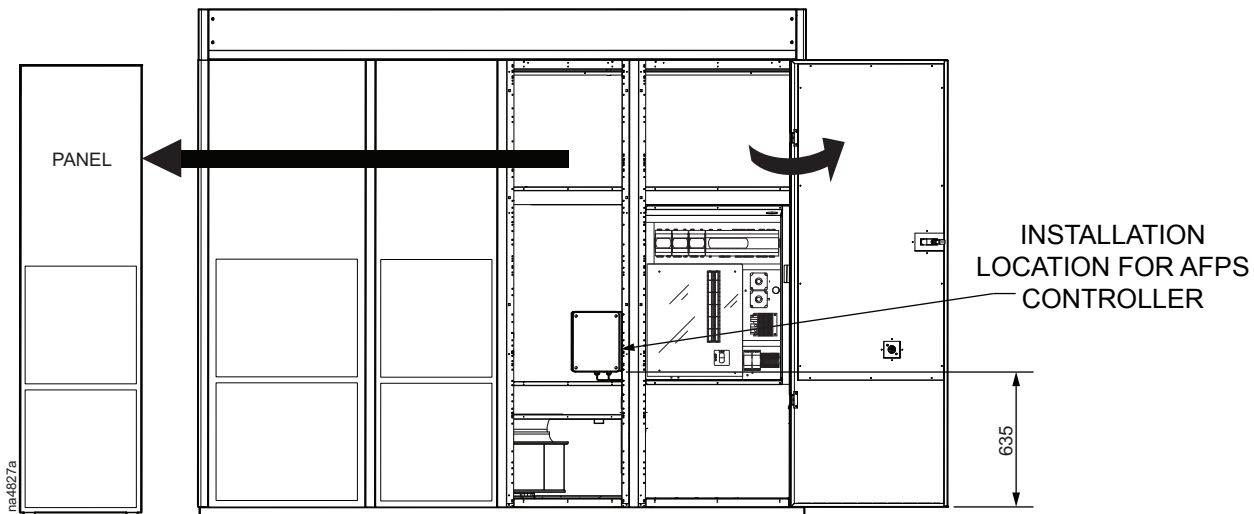
Failure to follow these instructions will result in death or serious injury.

Shutting down the cooling unit

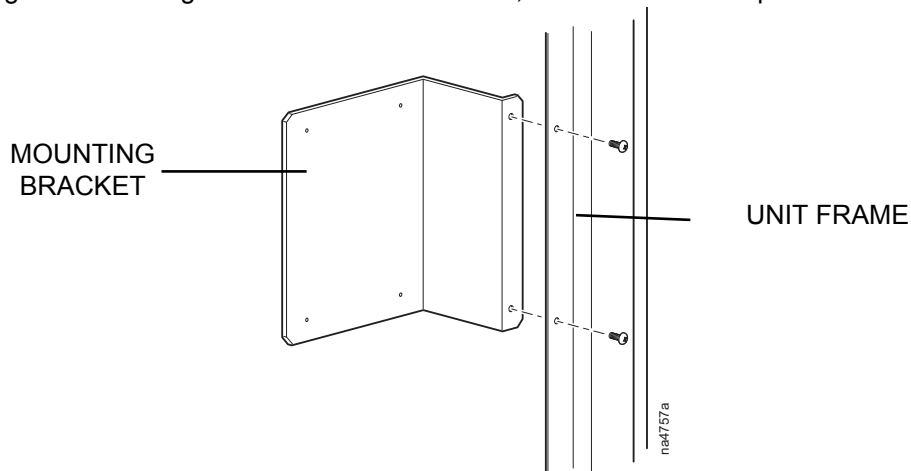
1. From the display interface, put the unit in stand-by and wait for the fans to stop.
2. Turn the disconnect switch to the **OFF** position.

Attaching the controller box

1. Determine the mounting location on the unit frame and attach the mounting bracket to the unit frame with the two provided screws.

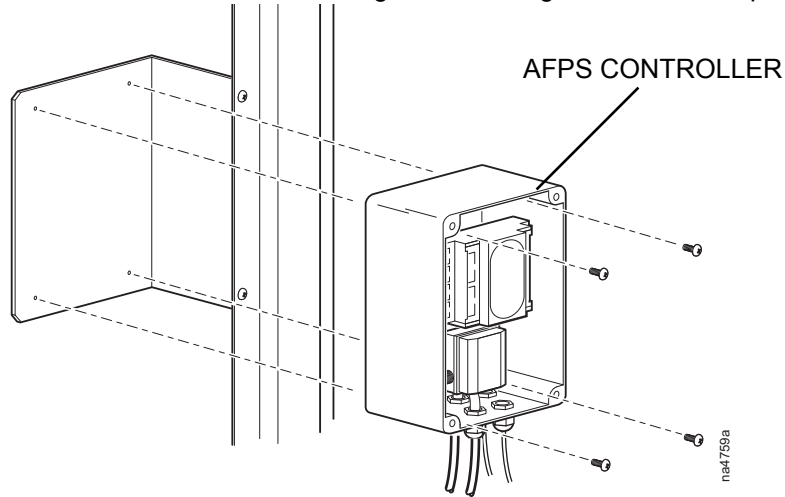


2. Align the mounting bracket with the unit frame, and install with the provided screws.



3. Using a standard screwdriver, remove the front cover and rear tabs from the AFPS controller.

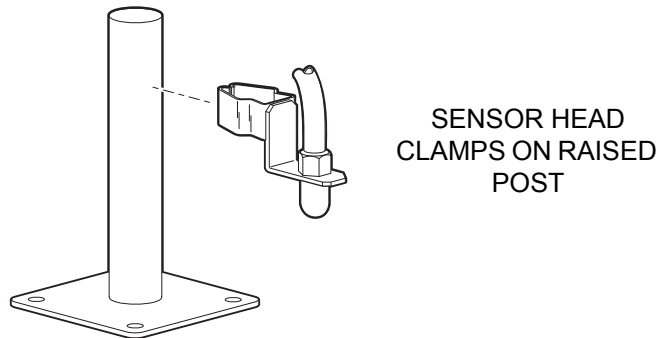
4. Attach the AFPS controller to the mounting bracket using the four screws provided.



5. Replace the AFPS controller cover.

Installing the sensors

1. Locate the mounting point for the sensor head on the wall, and route the tubing through the bottom of the unit and underneath the floor tiles to this location.
NOTE: Do not place the positive pressure sensor head under the raised floor where the airflow velocity is high. For example, directly beneath the unit. The recommended position for the pressure sensor head is 3–4 m (10–13 ft.) away from the unit.
2. Attach the mounting clamp to a raised floor post.
3. Ensure that excess tubing is carefully secured. Avoid sharp bends or kinks in the tubing.



The above-floor pressure sensor can be installed in the port located at the bottom-right corner of the Uniflair unit.

1. Using a standard screwdriver, pry off the cover on the sensor port.
2. Route the tubing through the cooling unit, neatly coiling any excess tubing.
3. From inside the unit, attach the sensor head to the port, then insert the fitting into the port from outside the unit.

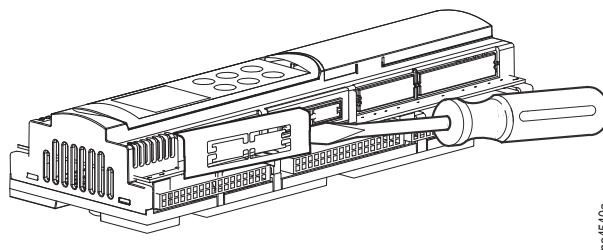
If the unit is not in the air-conditioned room, the tubing can be installed using the wall mounting bracket provided with the kit.

| |
|---|
| ⚠ WARNING |
| HAZARD TO EQUIPMENT OR PERSONNEL |
| Verify that the area behind the wall is free of electrical wires or piping before drilling holes into the wall. |
| Failure to follow these instructions can result in death, serious injury, or equipment damage. |

1. After determining an appropriate location for the sensor, drill a hole through the wall and mount the sensor bracket.
2. Tubing can be installed behind the wall and through the hole, then attached to the sensor.
NOTE: Ensure that the wall-mounted sensor is installed away from direct airflow to ensure proper pressurization detection.

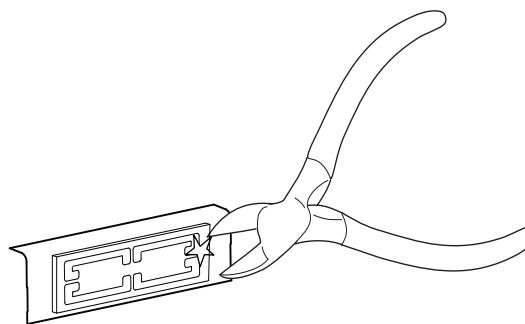
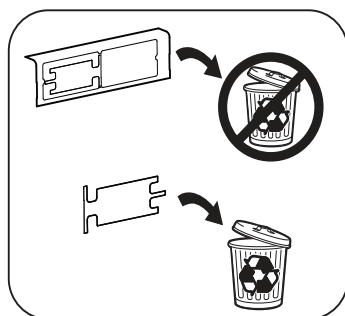
tLAN connection

1. Using a screwdriver, remove the analog selection cover on the controller inside the unit.



na4650a

2. Using cutting nippers, remove the precut plastic hatch to access the tLAN card slot.



na4493a

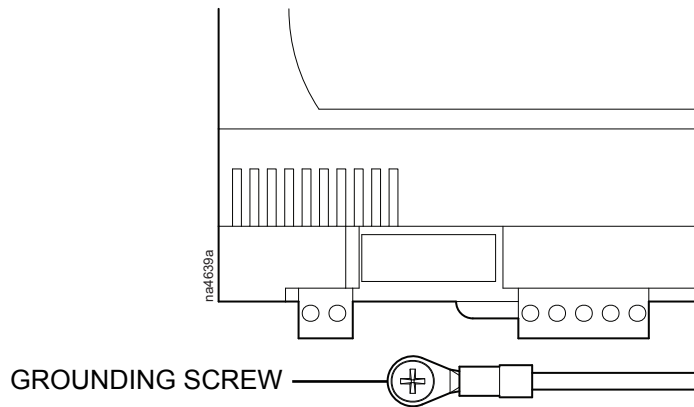
3. Aligning the connector pins, insert the tLAN card into the slot and push into place, making sure the card is pushed against the two plastic supports on the case.

| |
|--|
| NOTICE |
| UNPROTECTED OUTPUTS |
| Be sure all pins on the circuit board are properly seated and not bent or touching other pins. |
| Failure to follow these instructions can result in equipment damage. |

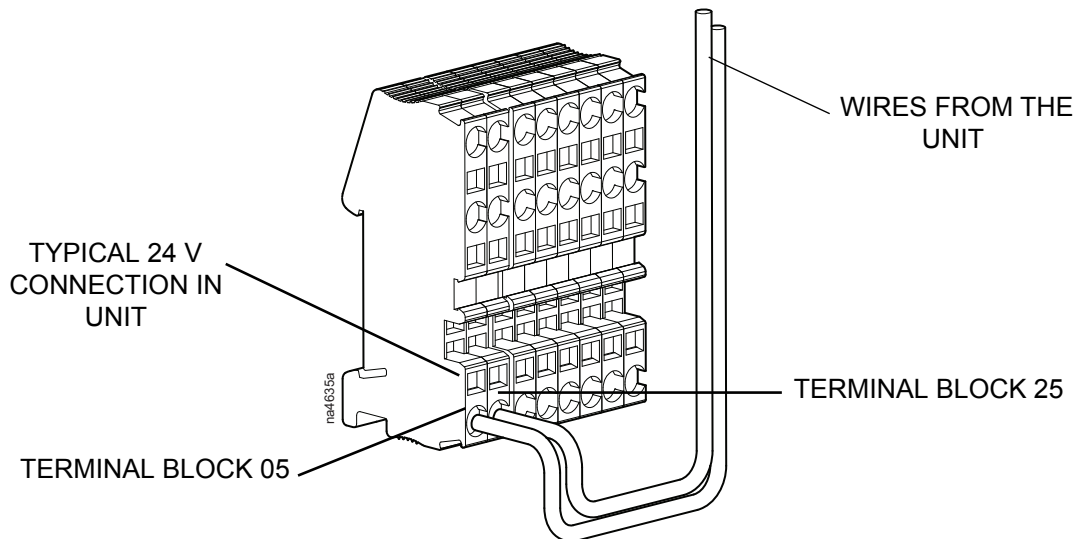
4. Put the cover back on the controller and snap into place.

Supply power connections

1. Route the tLAN cables and supply power harness to the electrical panel.
2. Connect J3 from the AFPS to the green connector on the tLAN card.
3. Attach the grounding wire from the harness to the grounding screw on the unit.



4. Attach the electrical wires to the 24-V AC power terminals provided in the terminal block of the Uniflair CW unit.



Configuration using the LED display interface

1. From the display interface, put the unit in stand-by mode and wait for the fans to stop.
2. From the main screen press the **Prg** key, select SERVICE MENU and press **Enter** to confirm.
3. Type in the Service Password (see the envelope attached to the manual) and press Enter to confirm.
4. Select **Hardware Settings** and press **Enter** to confirm.
5. Navigate to the parameter settings screen and begin configuration:

Evaporating fan

Fan Supply (Fan power supply (Monophase/Triphase): 3ph

Modulation with air pressure enabled (Fan modulation activated by the air pressure transducer): Modulation with Air

Air pressure transducer:

Y = transducer and AFPS kit is installed in the unit
 N = units in LAN network, transducer is not installed but modulation is activated.

EVAPORATING FAN

| | | |
|---------------------------------------|-----|---|
| Fan Supply: | 3ph | |
| Modulation with air pressure enabled: | Y | Y |
| Air press.transducer | Y/N | |

Transducer

Range Begin: The starting value of the transducer.
Range End: Ending value of the transducer.
Read Value: The reading taken by the sensor.
Delta: Maximum variation without activating the filter.
Time: Duration of the filter.
Value: Reading taken by the sensor.

AIR PRESS. TRANSDUCER

| | | |
|--------------|----|-------|
| Range Begin. | Pa | 000.0 |
| Range End. | Pa | 100.0 |
| Read Value | Pa | 020.0 |

INPUT FILTER

| | | |
|-------|----|-------|
| Delta | Pa | 4.0 |
| Time | s | 01 |
| Value | Pa | 020.0 |

Evaporating fan speed

Minimum speed: Minimum evaporating fan speed during modulation.
Maximum speed: Maximum evaporating fan speed during modulation.

EVAPORATING FAN REGULAT.

Minimum Speed : % 40
 Maximum Speed: % 100

Evaporating fan regulation

Setpoint: The reference pressure value that needs to be maintained by the modulation of the fans.
Dead Band: Dead band regulation
Regul. Band: Proportional regulation band
Integral Time: integral time
Derivat. Time: derivative time
Air pressure: the reading taken by the sensor
Evaporating Fan: evaporating fan regulation percentage

EVAPORATING FAN REGUL.

| | | |
|-----------------|----|-------|
| Setpoint | Pa | 020.0 |
| Dead Band | Pa | 000.0 |
| Regul. Band | Pa | 160.0 |
| Integral Time | | s 040 |
| Derivat. Time | | s 000 |
| Air Pressure | Pa | 020.0 |
| Evaporating Fan | | % 000 |

Alarm parameters

Alarm Level: Low air pressure alarm activation level.

Alarm Delay: Low air pressure alarm activation delay time.

| EVAPORATING FAN REGUL. | | |
|------------------------|----|-------|
| Alarm Level | Pa | 015.0 |
| Alarm Delay | s | 060 |

6. To exit, press the **ESC** key and navigate to the main screen.

Configuration using the touch screen display interface

Path: Main > Configuration > Unit > Airflow > Group

1. Turn on the power to the unit and wait for the touchscreen to display.

NOTE: Settings may appear on a different screen.

2. Press **Fan: Controlled by AFPS**
3. Press **Yes** to enter your credentials.
4. Enter your credentials and begin configuration.

Fan: Controlled by AFPS: Present

Fan AFPS on Unit: Present

AFPS Setpoint: 20

AFPS Low Air Pressure Threshold: 15

AFPS Max. Fan Speed: 100%

AFPS Min. Fan Speed CW: 40%

Fan AFPS Control Type: Advanced

AFPS Deadband:100%

AFPS Regulation Band: 160

Air Pressure Transducer Input Filter Time: 1

AFPS Sensor Min: 0

AFPS Sensor Max: 100

AFPS Sensor Input Filter Value: 0

AFPS Sensor Input Filter Delta Threshold: 4

AFPS Integral Time: 40

AFPS Derivative Time: 0

Fan Speed Derivative Time (using AFPS): 0

Fan Speed Integral Time using AFPS: 40

5. Press the **Home** button to return to the main screen.

Configuration of the LAN using the LED display interface

1. From the main screen press the **Prg** key, select **Settings Menu** and press **Enter** to confirm.
NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password instead
2. Enter the password.
3. Select **LAN Settings** and press **Enter** to confirm.
4. Navigate to the Parameters Setting screen. The following provides settings for air pressure control.

Local Values: Fan speed modulation is controlled by the pressure reading taken by the sensor on each unit.

```
LAN SETTINGS
Temp./Hum.          Control
Mode:               Local Values
                   Air Pressure Control
Mode:               Local Values
```

Mean Values: Fan speed modulation is controlled by the average pressure reading taken by the sensors on the units connected on a local network.

```
LAN SETTINGS
Temp./Hum.          Control
Mode:               Local Values
                   Air Pressure Control
Mode:               Mean Values
```

5. After setting the parameters, navigate to the main screen.
6. To save the data that has been entered, restart the unit.
7. Repeat steps 1–7 for each unit.
8. To exit, press the **ESC** key and navigate to the main screen.

NOTE: Fan speed modulation settings can be determined through sensor reading of the unit, or by calculating the average reading of all units on the LAN.

Configuring the LAN settings using the touch screen display interface

Path: Main > Configuration > Unit > Airflow > Group

1. Turn on the power to the unit and wait for the touchscreen to display.
NOTE: Settings may appear on a different screen.
2. Press **Number of LAN Units**.
3. Press **Yes** to enter your credentials.
4. Enter your credentials and begin configuration.

Number of LAN Units: Enter the number of units on the LAN

Number of Standby Units: Enter the number of units in standby

Sensor Values Used: Enter the number of sensor values used

Delta Temperature for Automatic Changeover: Enter the temperature

Delta Temperature to Switch to Local Control: Enter the temperature

Unit Rotation Time: Enter the required number of hours

Automatically Switchover to Standby Unit: Set as required

Rotate to Standby Unit Only on Alarm: Set as required

Exclude from Rotation: Set as required

Switchover Mode: Set as required

Switchover On Power Loss: Enable

Number of Days Between Rotation: Enter the number of required days between each rotation.

Hour of Rotation: Enter the hour for the rotation to take place.

Minute of Rotation: Enter the minute for the rotation to take place

Rotation Weekday: Enter the required day

5. Press the **Home** button to return to the main screen.

Communications Cards

The Carel™ pCOWeb controller provides slots for the following communications cards:

| Slot | Type | SKU | Part # | Protocol |
|------|-----------------|-----------|---------------|--|
| BMS2 | SE Touch Screen | N/A | N/A | Via TCP/IP (Modbus IP, StruxureWare, SNMP, Web) |
| BMS1 | Available | N/A | N/A | N/A |
| | TCP/IP | ACAC76122 | N/A | Modbus IP, StruxureWare, SNMP, pCOWeb, BacNet IP |
| | LON | ACAC76124 | 0M-21AS104CDZ | LONworks |
| | RS485 | ACAC76123 | 0M-21AS102CDZ | Modbus RTU |
| | RS485 | N/A | 0M-21AS108CDZ | Bacnet MS/TP |
| | RS232 | ACAC76125 | 0M-21AS106CDZ | Modem |

NOTE: Only one communications card can be installed on each pCO controller. This does not apply to touch screen communication card configurations.

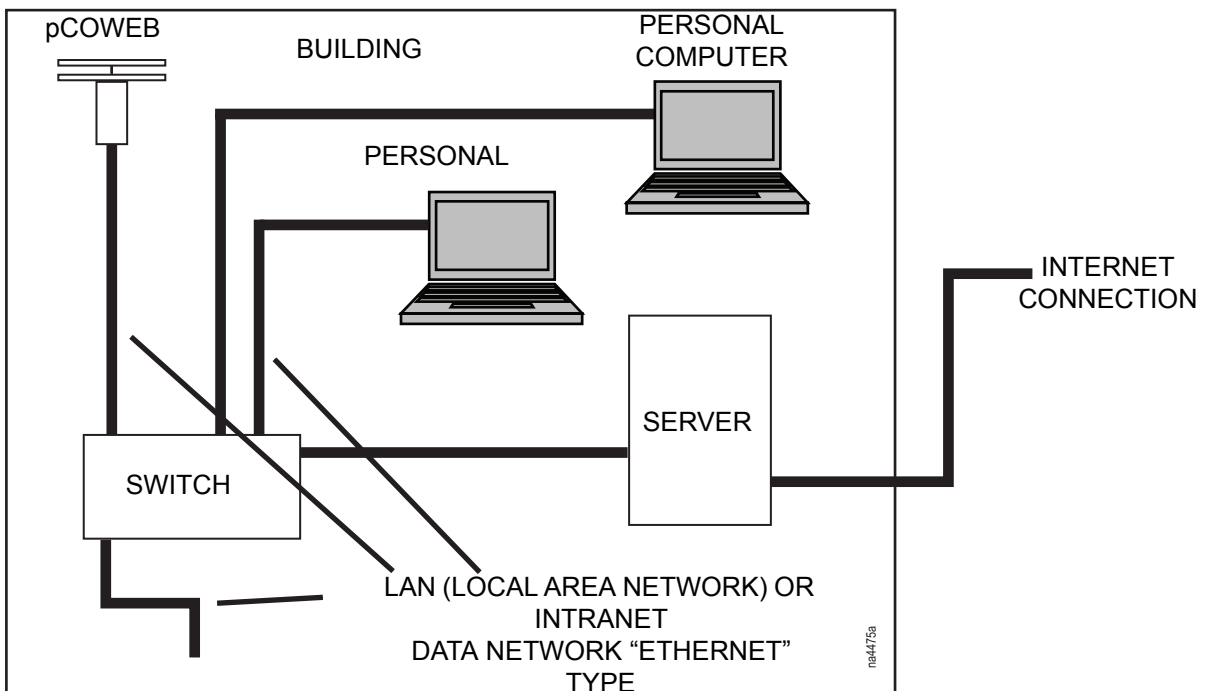
TCP/IP

pCOWeb Network Card (ACAC76122)

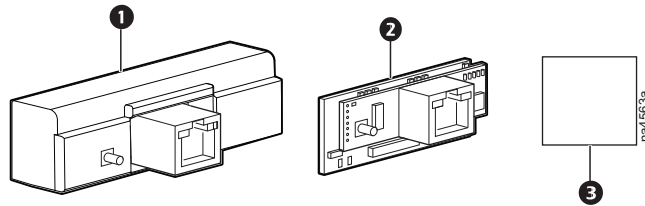
IMPORTANT: For DX and HDCV cooling units, the pCOWeb card outputs data only in metric units. The customer BMS must be able to convert to imperial units if necessary.

The pCOWeb controller is connected to an internal network. If suitably configured, the PCs in the internal network communicate with pCOWeb, using network language protocols included with pCOWeb.

In a network, the exchange of data between Internet-Intranet is only enabled for some devices and types of communication. These decisions are defined by the network administrator.



Inventory



| Item | Description | Quantity |
|------|--|----------|
| ❶ | Network controller card | 1 |
| ❷ | Cover | 1 |
| ❸ | Label that includes the required Media Access Control (MAC) address. Remove one of these labels before installing to access the required MAC address. | 1 |

Installing the pCOWeb card

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

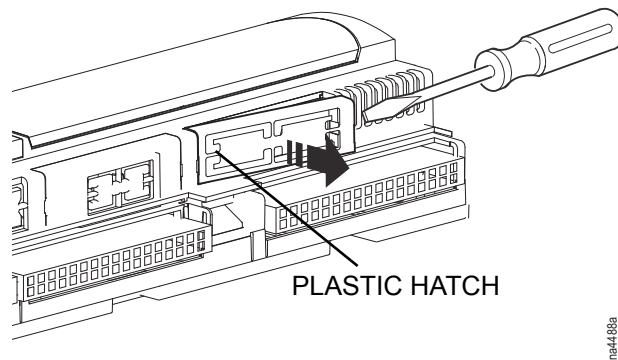
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

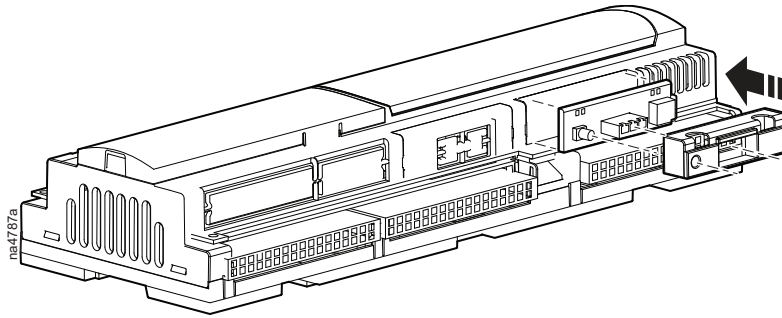
Each pCOWeb is uniquely distinguished by its own Media Access Control (MAC) address. The network administrator may need to check the MAC address of each pCOWeb installed. The MAC address is shown on the label applied to the connector and on the two labels included in the packaging. Once installed, the pCOWeb label may no longer be accessible. During installation, use scissors to separate the two labels supplied and apply one in an easily accessible position near the pCO controller on the electrical panel.

If more than one pCOWeb device is installed, a map of the installation should be created, applying the second label provided in the packaging onto the map for each pCOWeb corresponding to its physical position. This provides the network administrator with the required documents on where the pCOWeb devices and corresponding MAC addresses are located.

1. Disconnect the power supply to the pCOWeb controller.
2. Using a screwdriver, remove and recycle the plastic hatch from the controller



3. Insert the pCOWeb card into the pCO controller and ensure it is fully seated.



4. Secure the card to the controller with the supplied cover.
5. Insert the Ethernet cable.

Configuration using the LED display interface

NOTE: If installing multiple units on the network, each unit needs a unique address to avoid conflicts.

1. Press the **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:

Serial Address: 001

Serial Speed: 19200

Protocol: Standard

6. To exit, press the **ESC** key and navigate to the main screen.

Configuration using the touch screen display interface

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.

NOTE: Settings may appear on a different screen.

2. Enter your credentials and begin configuration.

BMS1 Serial Address: 001

BMS1 Serial Speed: 19200

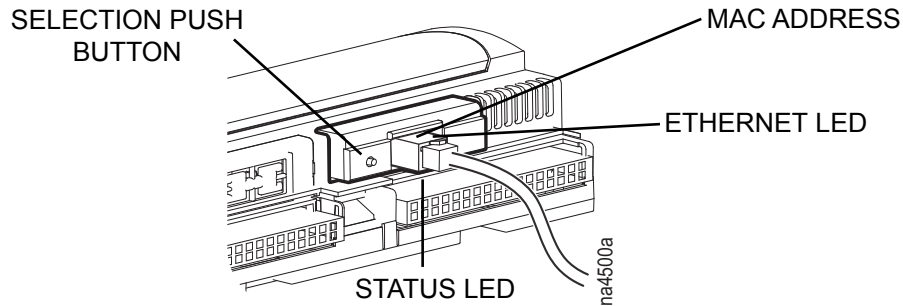
BMS1 Serial Protocol: Standard

Remote ON/OFF Only Through Serial Communication: Enable

3. Press the **Home** button to return to the main screen.

User interface buttons and LEDs

The pCOWeb features a push button and two indicator lights (Status LED and Ethernet LED).



| Item | Description |
|-----------------------|---|
| Selection Push Button | Used to select factory parameters or user parameters for network communication when starting the pCOWEB. NOTE: In normal operation, pCOWeb reboots without disconnecting the power supply. |
| MAC Address | MAC addresses required for setup. |
| Ethernet LED | Ethernet LED light. |
| Status LED | Status LED light. |

LED indicator lights

Status LED: This light displays the communication status of the pCOWeb card. During normal operation, the LED flashes green, approximately three times a second. In special circumstances, it displays the operation of service activities. This includes the restart of the internal program on the pCOWeb, and remote updating of the program.

| Condition | Description | Notes |
|---|---|---|
| Green flashing (3 times/sec) | Regular pCO-pCOWeb communication | When running demanding tasks (sending a large number of notifications), this may be steady green for a few seconds. |
| Red flashing slowly (once every two seconds) | pCO-pCOWeb communication not established | |
| Single red flash and then flashing green | Single pCO-pCOWeb communication error, one failed response from the pCO, or it is attempting to write a variable with an index higher than 207. | After five failed responses, the Status LED starts flashing red until communication resumes. |
| Steady red | Rescue mode | |
| Off, then green-red repeated in rapid succession, then green steady for 1-2 minutes | pCOWeb reboot phase | |
| Green steady for 1-2 minutes | pCOWeb reboot phase | Wait for the conclusion of the reboot. |
| Red-Off slow (1 second - 1 second) repeated 3 times | The recognition of a button pressed during reboot for selecting the factory parameters. | Release the button to confirm. |
| Red-Off fast (3 times a second) repeated 3 times | During reboot, this confirms the selection of the factory parameters by pressing the button. | |
| Green-red repeated alternating (once a second) | During a firmware update, this shows the writing of block B to non-volatile memory. | Do not interrupt the power supply. |
| Red steady followed by repeated green-red | During a firmware update, this shows the writing of block B to non-volatile memory. | Do not interrupt the power supply. |

Ethernet LED: Displays the status of the physical network connection (Ethernet connection signals), regardless of whether the network parameters are correct. This LED flashes green when transmitting data.

| Condition | Description |
|----------------|--|
| Green steady | Correct Ethernet data connection signals |
| Green flashing | Correct Ethernet data exchange |
| Red | No Ethernet signal detected |

Connecting to a PC

To connect the pCOWeb cable to a PC, connect the cable to the appropriate port.

Required equipment

- Computer with a Web browser, for example Internet Explorer™, fitted with an Ethernet network interface.
- pCOWeb card installed on the pCO controller
- Network cable

Other requirements

- Turn off the power to the pCO controller.

PC Configuration

NOTE: It is necessary to have administrator status for your PC to deactivate the Windows™ firewall.

The PC communicates with pCOWeb if settings on both devices are configured correctly.

The pCOWeb default settings can only be changed once the connection has been established with the PC. When first accessing the device, the PC needs to be configured for adaption to the pCOWeb default settings.

Disable the firewall

The firewall must be disabled to access pCOWeb.

1. On the Windows-based PC, select **Start** at the bottom-left corner of the screen.
2. Select **Control Panel**. The Control Panel window displays.
3. Select **Windows Firewall**. The Windows Firewall window displays.
4. Select **Off**.
5. Select **OK** to apply the changes and close the window.

Setting the IP address and subnet mask

The PC does not use DHCP and uses the IP address

172.16.0.100

The Subnet mask field must also be set (the Gateway is not required).

1. On the Windows-based PC, select **Start** at the bottom-left corner of the screen.
2. Select **Control Panel**. The Control Panel window displays.
3. Select **Network Connections**. The Network Connections window displays.
4. Select **Local Area Connection**. The Local Area Connection Status window displays.
5. Select **Properties**. The Local Area Connection Properties window displays.
6. If not already selected, select the **Internet Protocol (TCP/IP)** check box.
7. Select **Properties**. The Internet Protocol (TCP/IP) Properties window displays.
8. Select **Use the following IP address**.

9. Enter the IP address (including the dots): 172.16.0.100
10. Enter the Subnet mask (including the dots): 255.255.0.0
11. Select **OK** to apply the changes and close the window.
12. Select **OK** to close the remaining open windows.

C—Proxy

The following procedure provides details on enabling and disabling the network device called the “proxy” for communication.

1. On the Windows-based PC, select **Start** at the bottom-left corner of the screen.
2. Select **Control Panel**. The Control Panel window displays.
3. Select **Internet Options**. The Internet Properties window displays.
4. Select the **Connections** tab.
5. Select **LAN Settings**. The Local Area Network (LAN) Settings window displays.
6. If using a proxy server, click the **Use a proxy server for your LAN** check box.
7. Enter the Proxy Server Address and Port to be used.

To disable the proxy (if required):

1. Clear the **Use a proxy server for your LAN** check box.
2. Select **OK** to apply the changes and close the window.
3. Select **OK** to close the remaining open windows.

Activating factory network settings

1. Disconnect power to the pCOWeb controller.
2. Press and hold the button on the pCOWeb card and reconnect the power to the controller.
3. Continue to hold for 20 seconds until the Status LED flashes red.
4. Release the button before the Status LED flashes red three times. After a total of three red flashes, the LED will turn solid green.
5. After approximately one minute, the Status LED blinks green. At this point, the pCOWeb card has rebooted to the factory settings.

Opening pCOWeb

1. On the PC, open Internet Explorer®.
2. Enter the address field (including the dots): **172.16.0.1**
3. Press **Enter**. The pCOWeb main page displays.

NOTE: If the address is not found, check the Status LED. If solid green, allow more time for the pCOWeb card to boot. If blinking green, repeat “Activating factory network settings” on page 64.

Entering the IP Address/NetMask

1. Select the **Go to Administrator area** link.
2. Enter the Default Username: admin
3. Enter the Default Password: fadmin (the Administrator Area displays)
4. Select **Configuration** from the menu at the left of the screen.
5. Select the **Network** tab.
6. Enter the IP Address (example: 10.0.8.56). If using DHCP, leave blank or enter “DHCP”.
7. Enter the NetMask (example: 255.255.0.0). If using DHCP, leave blank or enter “DHCP”.
8. Click **Submit**.

Assigning a system name and location

1. To assign a name to the machine where the pCOWeb is installed, select the **SNMP** tab.
2. Enter the System name.
3. Enter the System location.
4. Click **Submit**.

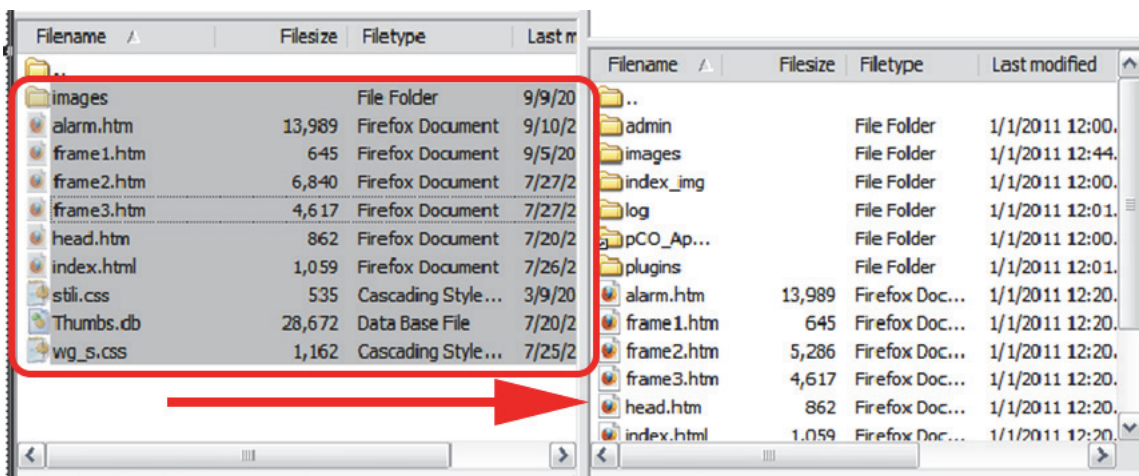
Accessing the user memory

The pCOWeb features an FTP server used to access the user memory and load or retrieve files, for example, custom HTML pages.

To use this function, the PC needs an FTP client installed. FileZilla (<http://filezilla-project.org/>) is used as an example in the following procedure (the procedure is similar for other FTP software).

1. Use the following parameters to connect to the pCOWeb card:
 - a. Host: 172.16.0.1
 - b. Username: httpadmin
 - c. Password: fhhttpadmin
2. Click **Quickconnect**.
3. Under "Local site", locate the appropriate directory on either the CD or local hard drive (...Supervisory_Systems\pCOWeb\pCOWeb_HTML_Pages\CCU\). Select the appropriate sub-directory, depending on the unit size and cooling type.
 - a. Leonardo Max (Cabinet Size 7)
 - CW_Imperial Meas (Chilled Water)
 - DX_Imperial_Meas (Air or Glycol Cooled DX)
 - ES_TC_Imperial_Meas (Energy Saving or Twin Cool)
 - b. Leonardo Evolution (Cabinet Size 3-6)
 - CW_Imperial Meas (Chilled Water)
 - DX_Imperial_Meas (Air or Glycol Cooled DX)
 - ES_TC_Imperial_Meas (Energy Saving or Twin Cool)
4. Highlight all of the files and folders in the appropriate directory and drag and drop them into the /usr/local/root/flash/http directory of the pCOWeb card.

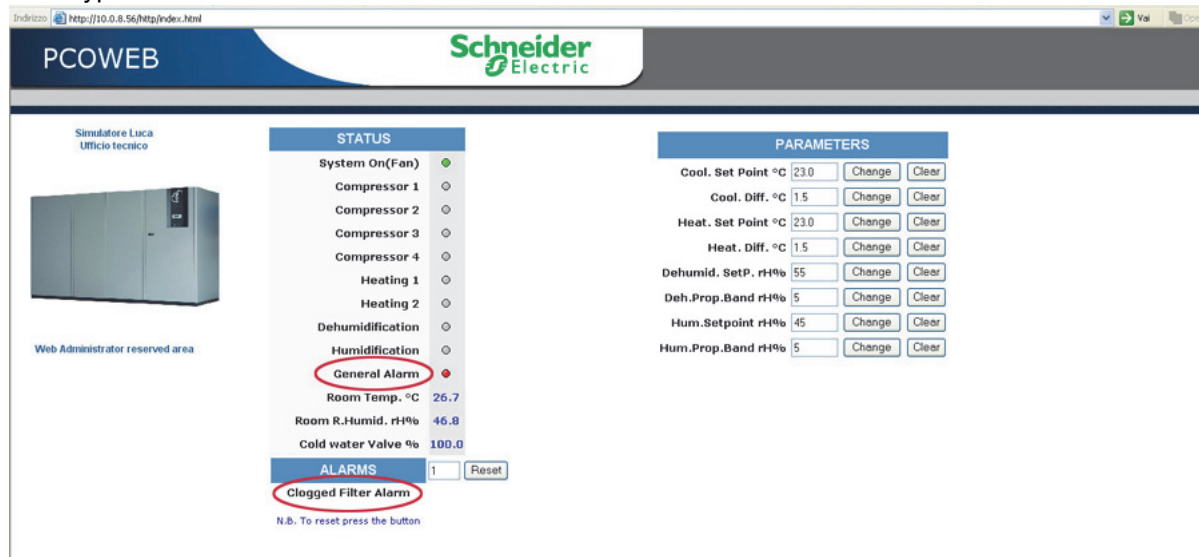
NOTE: Some FTP clients do not use the request from pCOWeb to open the user memory for "httpadmin" (/usr/local/root/flash/http/), instead they show the contents of the root position. The user needs to manually go to /usr/local/root/flash/http/.



- If there are existing files on the pCOWeb card, you will be prompted to overwrite the existing files. Select **OK** to overwrite.
- Close FileZilla after the file transfer is complete.

Accessing custom HTML pages

Open Internet Explorer and go to address 172.16.0.1. A personalized page appears on the screen, depending on the type of selected unit.



- The page features a photo on the left-hand side of the selected unit.
- A “Status” column indicates the operation mode on a Web page. Green indicates operational status. Gray indicates the item is not being used. In the event of an alarm state, a red indicator illuminates (if unit has a cold water valve, the opening value of the valve itself is also shown).
- An “Alarms” column indicates the description of any alarms that may be present. It should be noted that in order to reset the alarms, it is necessary to click **RESET**.
- A “Parameters” column indicates the setpoints and the relative differentials of the various parameters and the possibility of modifying them.

Resetting the system after customizing the HTML pages

- Go to the Web Administrator reserved area.
- Enter the Default Username: admin
- Enter the Default Password: fadmin
- Select **REBOOT** on the left side of the screen.
- Wait two minutes to allow the system to reboot.

Verifying setup

- To check that the procedure has been carried out correctly, enter the address “172.16.0.1” in the Internet Explorer browser. Internet Explorer should not allow entry into the page.
- Enter the new pCOWeb controller address. The main start screen appears.

Returning to the initial configuration

- Repeat steps one through seven of “Setting the IP address and subnet mask” on page 63.
- On the Internet Protocol (TCP/IP) Properties window, select **Obtain an IP address automatically**.
- Click **OK** to apply the changes and close the window.
- Click **OK** to close the remaining open windows.

The PC needs to be reset so that the network “proxy” device can be re-used and it can answer to the IP address that was already set, as well as the second IP address that is compatible for direct communication with the pCOWeb (example: http://10.0.8.56).

Resetting the system after returning to the initial configuration

1. Repeat steps one through five of “Setting the IP address and subnet mask” on page 63.
2. On the Local Area Network (LAN) Settings window, select “**Use a proxy server for your LAN**” check box.
3. Select **Advanced**. The Proxy Settings window displays.
4. In the “Exceptions” field, enter the address chosen for communication with pCOWeb (for example: http://10.0.8.56).
5. Click **OK** to apply the changes and close the window.
6. Click **OK** to close the remaining open windows.

LON NETWORK

PCO1000F0 LonWorks® pCO system serial card (ACAC76124)

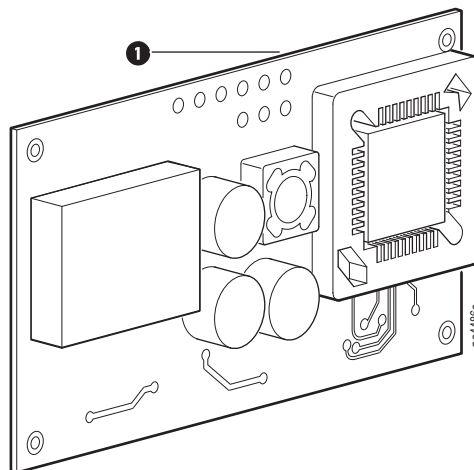
NOTE: All LON cards are programmed at the factory.

Electrical damage on the electronic components usually occurs because of electrostatic discharges caused by operator improper handling. When handling these components, take the following precautions:

- Before handling any electronic component or card, ground the card.
- Keep the components inside their original package as long as possible. If necessary, take the main board from a package and put it into an anti-static package without touching both sides of the board with your hands.
- Avoid plastic bags and polystyrene.
- Avoid handing a card from one operator to another, to minimize electrostatic induction and discharges.

The PCO1000F0 and PCO1001F0 cards are used with the pCO electronic controller interface and the LonWorks® TP/FT-10 network.

Inventory



| Item | Description | Quantity |
|------|-------------|----------|
| 1 | PCO1000F0 | 1 |

Installation

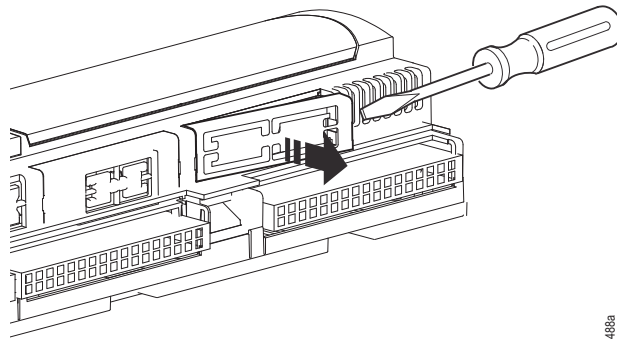
⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

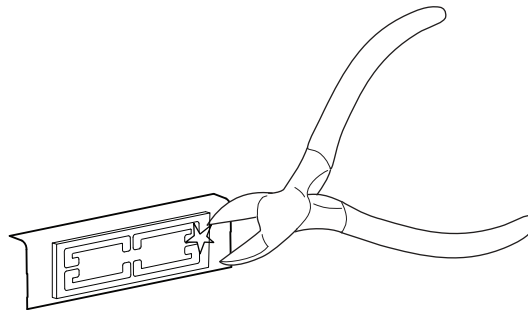
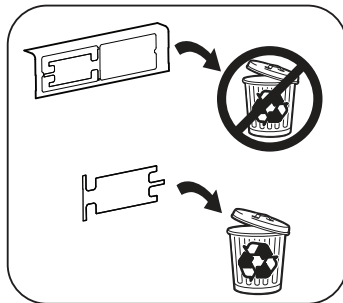
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

1. Disconnect the power.
2. Using a screwdriver, remove the plastic hatch from the controller.



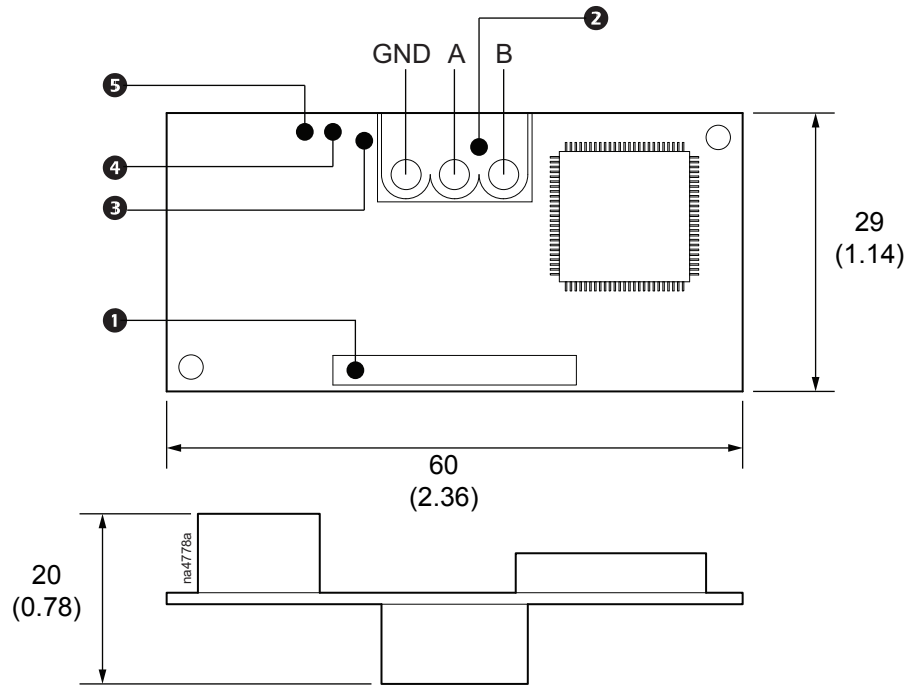
3. Using cutting nippers, remove the precut plastic hatch.



4. Insert the pCOWeb card into the controller and ensure it is fully seated. Ensure that the board is properly fitted and rests against the two plastic supports on the pCO controller case.
5. **NOTE:** The insertion of the card and the fitting of the connectors may be difficult due to the space available and the location of the two plastic supports. Insert the board obliquely and rotate until the connectors are fitted.
6. Replace the hatch and line up the connector on the serial board with the hole made in the hatch.
7. Connect the communication cable.

Connecting to the LonWorks network

The connection to the LonWorks network is performed using the removable terminal connector present on the board.



*Dimensions shown in mm (in.).

| Item | Description |
|------|-------------|
|------|-------------|

- | | |
|---|--|
| ❶ | pCO connector |
| ❷ | Terminal block for LonWorks® network (GND, A, B) |
| ❸ | Service pin to the board |
| ❹ | Red anomaly LED |
| ❺ | Green service that displays normal LED operation |

Activating the service pin

To activate the service pin, short-circuit the two pins using the tip of a screwdriver. Activation is confirmed when the LED service light activates.

Configuration using the LED display interface

NOTE: If installing multiple units on the network, each unit needs a unique address to avoid conflicts.

1. Press **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:

Serial Address: 001

Serial Speed: 4800

Protocol: Standard

6. Navigate to the main screen.

Configuration using the touch screen display interface

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.

NOTE: Settings may appear on a different screen.

2. Enter your credentials and begin configuration.

BMS1 Serial Address: 001

BMS1 Serial Speed: 4800

BMS1 Serial Protocol: Standard

Remote ON/OFF Only Through Serial Communication: Enable

3. Press the **Home** button to return to the main screen.

LON serial card LED light functionality

| Condition | Description |
|--|---|
| Green during the normal status of LonWorks node | Signals the status of the LonWorks node, as per the LonWorks protocol. |
| Green when activating the service pin | Remains on during the activation of the service pin. |
| Green when receiving the WINK command | Remains on for a second when receiving a WINK command from the network. |
| Red when signaling the failure of the connection on the pCO side | If the red anomaly LED is not illuminated, check to ensure the baud rate of the serial communication on pCO is set to 4800. |

The LonWorks network setup must follow LonWorks instructions and specifications. For further information on installation, maintenance, cross-section, and cabling, refer to the LonWorks documentation.

RS485

pCOnet PCO1000BA0 (ACAC76123)

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

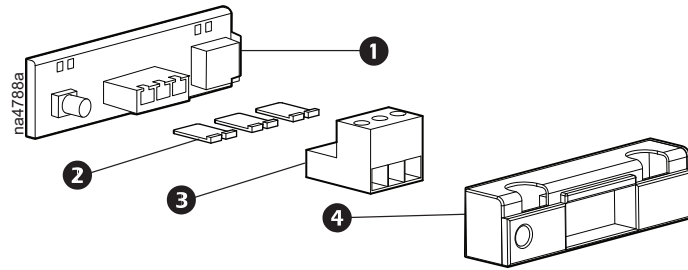
Electrical damage on the electronic components usually occurs because of electrostatic discharges caused by improper handling by the operator. When handling these components, take the following precautions:

- Before handling any electronic component or card, ground the card.
- Keep the components inside their original package as long as possible. If necessary, take the main board from a package and put it into an anti-static package without touching both sides of the board with your hands.
- Avoid plastic bags and polystyrene.
- Avoid handing a card from one operator to another, to avoid any electrostatic induction and discharges.

The pCOnet board interfaces to pCO and connects to the BACnet MS/TP network (Master-Slave Token/Pass).

NOTE: pCOnet is not compatible with the pCO series pCOnet that features Master/Slave operation.

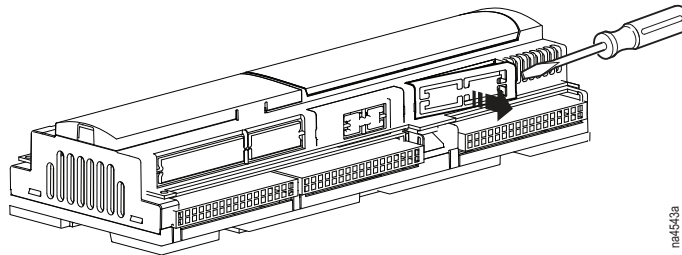
Inventory



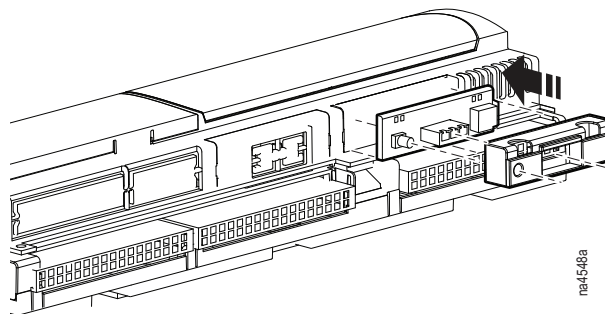
| Item | Description | Quantity |
|------|----------------------------|----------|
| 1 | PCO1000BA0 interface board | 1 |
| 2 | Jumpers | 3 |
| 3 | Connector | 1 |
| 4 | Cover | 1 |

Installation

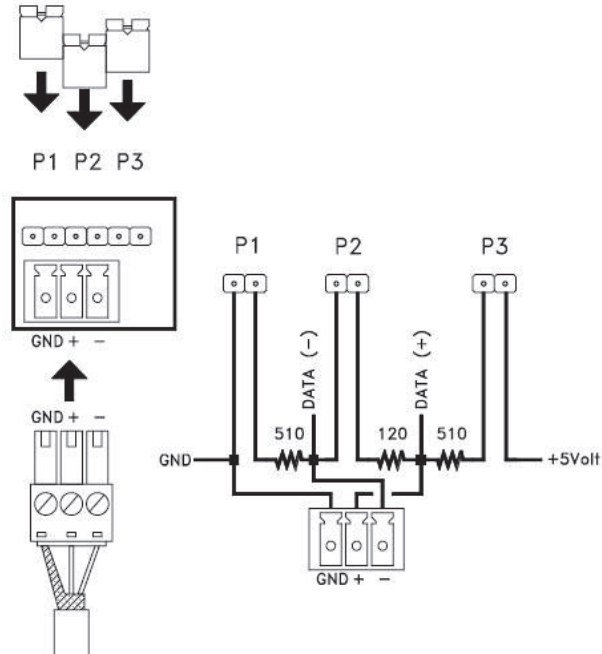
1. Disconnect the power.
2. Using a screwdriver, remove the plastic hatch from the controller.



3. Insert the pCOnet card in the plug-in connector. Ensure that the connector is inserted and in contact with the two supports on the pCOnet card. Due to limited space, insert the pCOnet card at an angle, then tilt it back until the connectors line up.



4. Insert the required jumpers. The following graphic provides jumper connection details.



- Jumpers P1, P2, and P3 are located inside the front opening of the cover.
- Jumper P1 adds a 510 ohm polarization resistance between the negative data line (-) and GND.
- Jumper P2 adds a 120 ohm terminal resistance between the two data lines (+) and (-).
- Jumper P3 adds a 510 ohm polarization resistance between the positive data line (+) and the +5 Vdc internal voltage.

Insert all three jumpers on the unit at the start of the network and the unit at the end of the network. Do not insert the jumpers on the intermediate units.

NOTE: If the device used to read the data from the 485 network is grounded, and the RS232-RS485 converter or the RS485 serial port on the device have functional insulation of less than 2kV, the connector G0 on the pCO board must be grounded. The board cannot be installed in direct contact with the metal panel on the electrical panel.

5. Connect the communication cable. Wind the cord around a ferrite core (field supplied.)
6. Replace the cover supplied with the pCOnet controller.

Configuration using the LED display interface

NOTE: If installing multiple units on the network, each unit requires a unique address to avoid conflicts.

1. Press **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:

Serial Address

Serial Speed

Protocol: STANDARD

6. Navigate to the main screen.

Configuration using the touch screen display interface

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.
NOTE: Settings may appear on a different screen.
2. Enter your credentials and begin configuration.

BMS1 Serial Address: Enter the required address

BMS1 Serial Speed: Enter the required serial speed

BMS1 Serial Protocol: Modbus

Remote ON/OFF Only Through Serial Communication: Enable

3. Press the **Home** button to return to the main screen.

Status LED

The Status LED (left) indicates the status of communication with the controller and the status of the pCOnet controller.

Starting sequences, power-up, and restarting

The starting sequence on power-up or after restarting the pCOnet controller provides the following sequence:

1. Off for two seconds.
2. Two seconds after restarting:
quick flash > red > green > red > green
3. Five seconds after restarting:
steady green

Approximately 50 seconds after restarting, communication begins. The following table provides active alarm conditions and descriptions on the status LED.

| Condition | Description |
|---------------------------|---|
| Quick green > OFF > green | Indicates communication with the pCO controller is normal. |
| Slow red > OFF > red | Indicates communication has not been established with the pCO controller. |
| Green > red > green | Indicates that the pCOnet has detected an error, or that there is a temporary lack of response from the pCO controller. |

Once the starting sequence has been completed, the Status LED flashes to indicate the quality of communication with the pCO controller.

RS485 LED

The RS485 LED is located on the right side of the card, and indicates the status of communication with the BACnet MS/TP network (RS485) and displays the following information:

For starting sequence on power-up or after rebooting the pCOnet, the RS485 LED switches in the following sequence:

1. Off for approximately 50 seconds.
2. Approximately 50 seconds after restarting the pCOnet controller, a slow green–red–green–red light displays and the BACnet MS/TP network activates.

Status of communication with the BACnet MS/TP network

Once the starting sequence completes, the RS485 LED flashes to indicate the quality of communication with the BACnet MS/TP network. The following table provides active alarms conditions and descriptions on the status LED.

| Condition | Description |
|-----------------------------------|--|
| Green with occasional red flashes | Communication is OK (BACnet MS/TP meaning: green ON = pCOnet keeps the Token (control of the MS/TP network); green OFF = pCOnet DOES NOT keep the Token; red on = Poll-For-Master, search for a Master to pass the Token to). |
| Green and red on together | (BACnet MS/TP meaning: continuous Poll-For-Master): communication not established (connection problems, or no network device found); this may depend on electrical connection difficulties or communication settings that are not compatible with the other network devices connected. |

Using the push button

The push button restarts the pCOnet controller and recalls the factory configuration.

Restarting the pCOnet controller

With the board on and operating normally (status LED flashing continuously), hold the button between five and 10 seconds.

Approximately ten seconds after releasing the button, the Status LED stops flashing. Fifteen seconds later, the pCOnet restarts and the Status LED quickly flashes red-green-red-green.

Recalling the factory configuration (factory boot switch mode)

The pCOnet card comes with user parameters set to factory configuration values. See “Using the pCOnet parameters” on page 75 for factory values. In the “factory boot switch” mode, pCOnet does not save the recalled values. When restarted without pressing the button, the pCOnet card again loads the user settings. The following procedure sets the default pCOnet parameters:

1. Switch the pCOnet controller on with the pCOnet board inserted by pressing and holding the button for at least 20 seconds. The red status LED flashes slowly three times.
2. After three red flashes on the LED, release the button. The LED turns green. The LED then confirms recognition of the button by flashing three times red-off, and then returns to green.

Complete start-up of the pCOnet controller takes another 40 seconds and the RS485 LED starts flashing. At this point, pCOnet controller be accessed via a remote connection.

Additional documentation

Additional documentation relating to the pCOnet BACnet/Æ protocol, PICS (Protocol Implementation Conformance Statement) and the BACset configuration tool are available at <http://ksa.carel.com>.

Configuring pCOnet parameters

This section provides procedures to configure the pCOnet parameters for correct communication over an MS/TP network.

1. Connect to pCOnet via a RS485 connection to a computer. During configuration, the Carel product code CVSTDUMOR0 for USB ports can be used. USB converters should not be used in the installation due to the large volume of data transmitted across a complex BACnet network
2. Install the Carel “BACset” configuration tool available at <http://ksa.carel.com>.

NOTE: If the values of the pCOnet parameters are not suitable, communication with BACset may not be possible. To connect to pCOnet, restart the pCOnet controller using the “factory boot switch” mode.

Using the pCOnet parameters

The following table and definitions provide details on parameter usage.

| Parameter | Min | Max | Factory |
|-----------------|------------------------|---------|---------|
| Device instance | 0 | 4194303 | 77000 |
| Station Address | 0 | 127 | 0 |
| MaxMaster | 0 | 127 | 127 |
| Max Info Frames | 0 | 255 | 20 |
| BaudRate | 9600-19200-38400-76800 | | 38400 |

Device Instance: The number that uniquely identifies a device inside the BACnet network (the BACnet network can also include non-MS/TP BACnet devices). If two units have the same Device Instance, identification errors will be generated.

Station Address: The number that differentiates the units in the BACnet MS/TP network. If two units have the same Station Address, identification errors will be generated. To speed up the data exchange between the Master units, the Station Address of the Master units should start from 0 and continue without skipping any numbers.

Max Info Frames: This establishes the maximum number of information packages exchanged. When this number is exceeded, the Master unit gives up control (Token) of the network to another Master unit. It indirectly establishes a priority between the Master units in the network. High numbers guarantee the Master a higher data exchange volume.

MaxMaster: To speed up data exchange between the Master units, MaxMaster should be set to the Station Address of the Master with the highest Station Address.

Each Master unit, after having used the network, passes over control to the next Master. The MaxMaster parameter specifies to pCOnet the address of the network Master with the highest Station Address. Using this parameter, pCOnet will know that there is no other Master with a higher Station Address than MaxMaster. pCOnet then gives control of the network to the next Master, however not beyond MaxMaster. If no next Master is found, the cycle begins again, with control being given to the Master with the lowest Station Address.

BaudRate: The data transfer speed. The BaudRate must be the same for all the devices connected, otherwise the exchange of data will generate communication errors. For extended networks, low baud rates should be specified. This guarantees less communication errors. If the Baud Rate is 76800, make sure that the device supports this communication speed. This baud rate is not supported by the RS232 serial port on a normal PC.

RS485

PCOS004850 serial card for pCO controller (Part # 0M-21AS108CDZ)

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

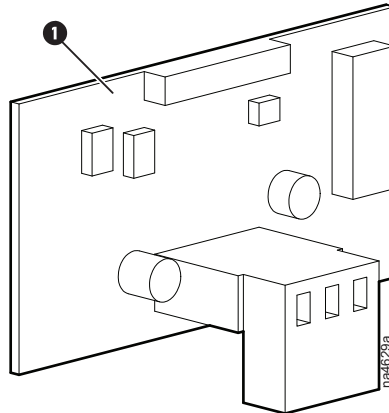
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

Electrical damage on the electronic components usually occurs because of electrostatic discharges caused by operator improper handling. When handling these components, take the following precautions:

- Before handling any electronic component or card, ground the card.
- The components must be kept inside their original package as long as possible. If necessary, take the main board from a package and put it into an anti-static package without touching both sides of the board with your hands.
- Avoid non-anti-static plastic bags and polystyrene.
- Avoid handing a card from one operator to another, to avoid any electrostatic induction and discharges.

Inventory

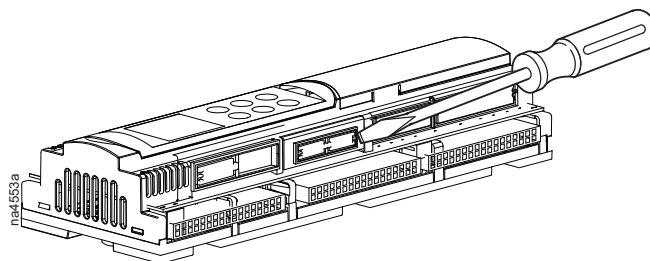


| Item | Description | Quantity |
|------|------------------------|----------|
| 1 | PCOS004850 serial card | 1 |

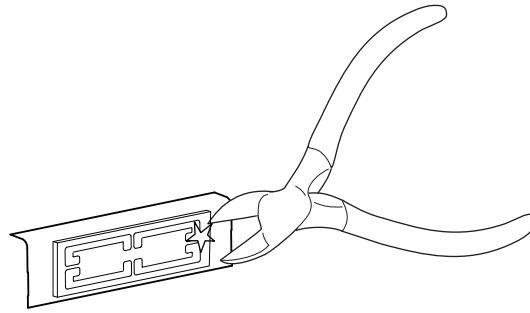
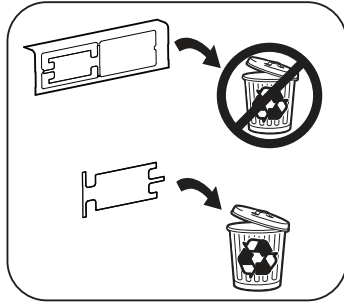
The PCOS004850 is an optional communication card for the pCO series controls which allows you to directly interface the pCO to a RS485 supervisory network. The card ensures the controller communicates with the RS485 serial network. The maximum baud rate is of 19200 baud. This is set using the software.

Installation

1. Disconnect the power.
2. Using a screwdriver, remove the plastic hatch from the controller.



3. Using cutting nippers, remove the precut plastic hatch.

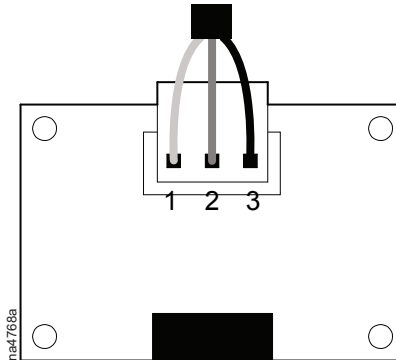


na4498a

4. Insert the optional card into the corresponding connector and ensure the card is firmly placed on both plastic supports on the pCO controller case.

5. Close the cover using a screwdriver to fit the outside card terminal to the cover.

The connection with the RS485 network is carried out by means of the plug-in terminal connector on the card. Pin-wiring of the connector is stamped on the card.

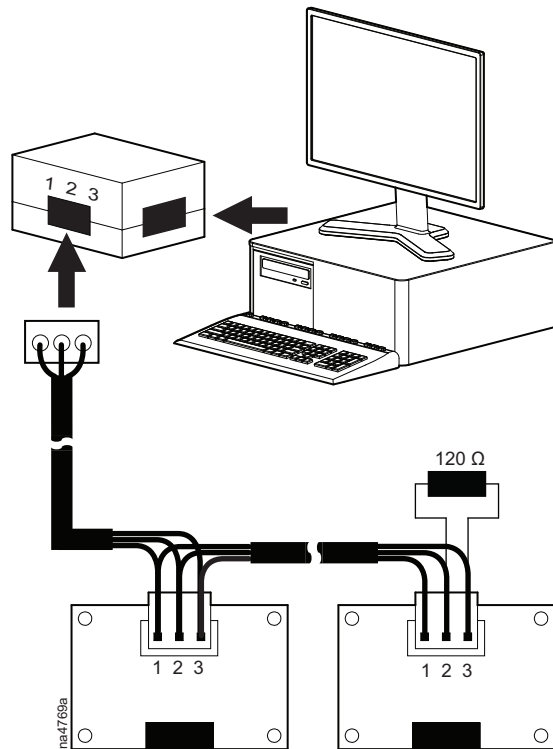


na4768a

Pin Connector

- | | |
|---|---------|
| 1 | GND |
| 2 | RX+/TX+ |
| 3 | RX-/TX- |

If the card is placed in the last position of the supervision serial line, pins 2 and 3, you must connect a 120-Ω/4-W end line resistor.



Configuration using the LED display interface

NOTE: If installing multiple units on the network, each unit needs a unique address to avoid conflicts.

1. Press **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:
 - a. Serial Address
 - b. Serial Speed
 - c. Protocol: **Modbus**
6. Navigate to the main screen.

Configuration using the touch screen display interface

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.

NOTE: Settings may appear on a different screen.
2. Enter your credentials and begin configuration.

BMS1 Serial Address: Enter the required Serial Address

BMS1 Serial Speed: Enter the required Serial Speed.

BMS1 Serial Protocol: Modbus

Remote ON/OFF Only Through Serial Communication: Enable
3. Press the **Home** button to return to the main screen.

RS232

PCO100MDM0/ RS232 field bus card for pCO¹ (ACAC76125)

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

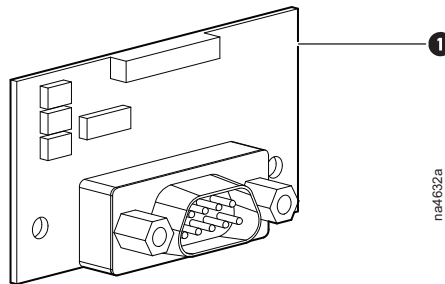
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by qualified personnel. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

Electrical damage on the electronic components usually occurs because of electrostatic discharges caused by operator improper handling. When handling these components, take the following precautions:

- Before handling any electronic component or card, ground the card.
- The components must be kept inside their original package as long as possible. If necessary, take the main board from a package and put it into an anti-static package without touching both sides of the board with your hands.
- Avoid non-anti static plastic bags and polystyrene.
- Avoid handing a card from one operator to another, to avoid any electrostatic induction and discharges.

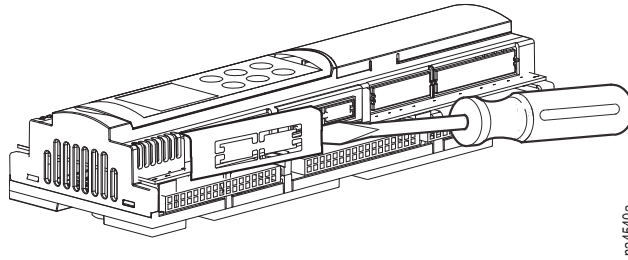
Inventory



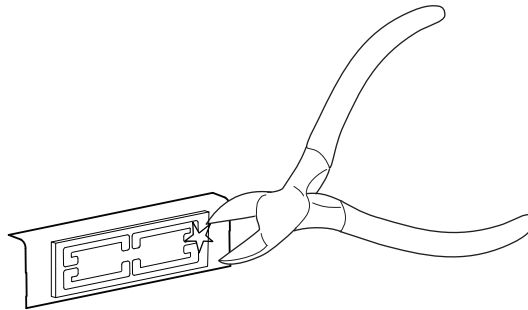
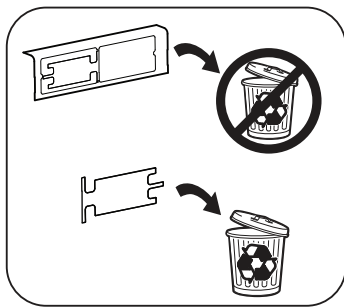
| Item | Description | Quantity |
|------|--------------------------------|----------|
| 1 | PCO100MDM0 board modem for PCO | 1 |

Installation

1. Disconnect the power.
2. Using a screwdriver, remove the plastic hatch from the electronic controller.

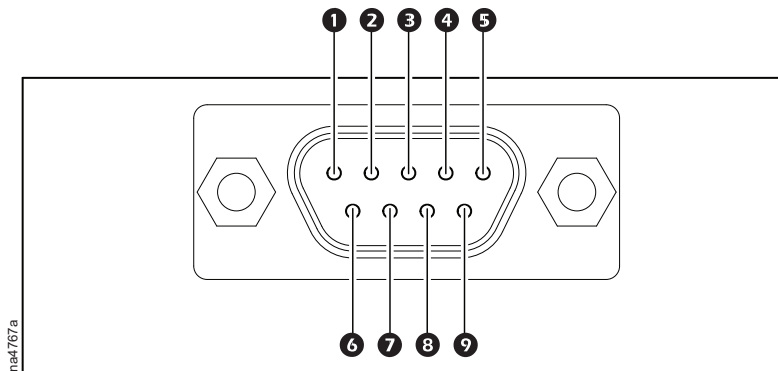


3. If necessary, select the type of analog inputs using the dip switch. This must be done before installing the card (pCO¹ controller only).
4. Using a cutting nippers, remove the precut plastic hatch.



5. Insert the card in the corresponding plug-in connector, making sure it is fully inserted against the two plastic supports on the pCO controller.
6. Close the cover, ensuring the connector on the optional card lines up with the cover.

The modem is connected using the 9-pin socket on the card. A diagram of the pins on the connector are shown in the following figure.



| Socket | Description | Socket | Description |
|--------|-------------|--------|-------------|
| ① | n.c | ⑤ | GND Frame |
| ② | RX | ⑥ | n.c |
| ③ | TX | ⑦ | RTS |
| ④ | DTR | ⑧/⑨ | n.c |

Configuration using the LED display interface

NOTE: If installing multiple units on the network, each unit needs a unique address to avoid conflicts.

1. Press **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:

Serial Address

Serial Speed

Protocol: Modem GSM

6. Navigate to the main screen.

Configuration using the touchscreen display interface

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.
NOTE: Settings may appear on a different screen.

2. Enter your credentials and begin configuration.

BMS1 Serial Address: Enter the required serial address

BMS1 Serial Speed: Enter the required serial speed

BMS1 Serial Protocol: Modem GSM

Remote ON/OFF Only Through Serial Communication: Enable

3. Press the **Home** button to return to the main screen.

Worldwide Customer Support

Customer support for this or any other product is available at no charge in any of the following ways:

- Visit the Schneider Electric Web site to access documents in the Schneider Electric Knowledge Base and to submit customer support requests.
 - **www.schneiderelectric.com** (Corporate Headquarters)
Connect to localized Schneider Electric Web sites for specific countries, each of which provides customer support information.
 - **www.schneiderelectric.com/support/**
Global support searching Schneider Electric Knowledge Base and using e-support.
- Contact the Schneider Electric Customer Support Center by telephone or e-mail.
 - Local, country-specific centers: go to **www.schneiderelectric.com > Support > Operations around the world** for contact information.

For information on how to obtain local customer support, contact the representative or other distributors from whom you purchased your product.

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