FFUCS
FAN FILTER UNIT CONTROL SYSTEMS

FEATURES:

- WALL MOUNTED SPEED CONTROLLER: OFFERS SIMPLE USER CONTROL FOR UP TO 30 FAN FILTER UNITS WITH THE SAME SETPOINT.

- BACnet FLOW CONTROLLER SERVICE TOOL: PROVIDES ACCESS TO BACnet FLOW CONTROLLER (BFC) MENUS AND CONTROLS ON A REMOTE DEVICE FOR EASE OF ACCESS IN LOW CLEAREANCE INSTALLATIONS.

- WEB SERVER: PROVIDES FULL CONTROL AND MONITORING OF FAN FILTER UNITS ON A GRAPHICAL WEB-BASED INTERFACE AND COMMUNICATES WITH A VARIETY OF BUILDING CONTROL SYSTEMS USING BACnet COMMUNICATION PROTOCOL.

PRICE WEB SERVER

WALL MOUNTED SPEED CONTROLLER
(WMSC-30)

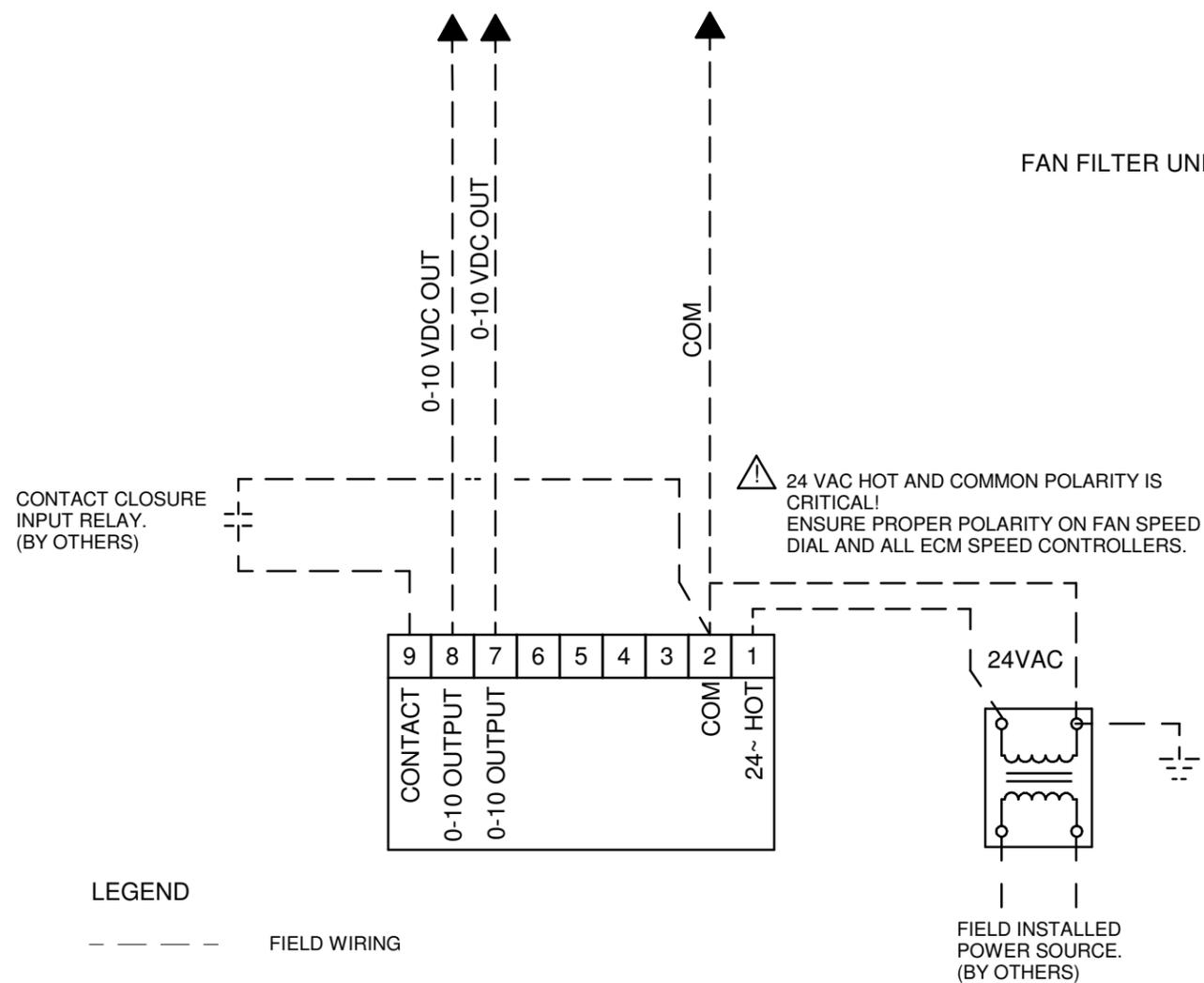BACnet FLOW CONTROLLER SERVICE TOOL
(BFC-ST)

PRICE | CRITICAL ENVIRONMENTS

PROJECT:

| 273558 | Revision: B | 05-04-2022 |

FFUCS
FAN FILTER UNIT CONTROL SYSTEMS
WALL MOUNTED SPEED CONTROLLER (WMSC-30)

WALL MOUNTED SPEED CONTROLLER (WMSC-30)

FAN FILTER UNITS BEING CONTROLLED

⚠ 24 VAC HOT AND COMMON POLARITY IS CRITICAL!
ENSURE PROPER POLARITY ON FAN SPEED DIAL AND ALL ECM SPEED CONTROLLERS.

CONTACT CLOSURE INPUT RELAY. (BY OTHERS)

0-10 VDC OUT
0-10 VDC OUT
COM

9	8	7	6	5	4	3	2	1
CONTACT	0-10 OUTPUT	0-10 OUTPUT					COM	24~ HOT

24VAC

FIELD INSTALLED POWER SOURCE. (BY OTHERS)

0-10VDC SIGNAL + COM

4.88"

3.23 "

LEGEND

— — — —   FIELD WIRING

FEATURES:

- WALL MOUNTED DIAL CONTROLS FAN SPEED FROM OFF (1.5 VOLTS) to 100% (10 VOLTS).

- EACH 0-10 VDC OUTPUT CONTROLS A MAX OF 15 DAISY CHAINED FAN FILTER UNITS (FOR A TOTAL OF 30 UNITS PER WALL MOUNTED SPEED CONTROLLER) WITH SAME SETPOINT.

- WORKS WITH ECMSC AND BFC CONTROLLERS.

- 0-10 VDC OUTPUT CONNECTS TO 'BAS SIGNAL' INPUT ON ECM SPEED CONTROLLER OR BFC CONTROLLER. USE A MAXIMUM OF 100 FEET FOR SIGNAL CABLES.

- 24 VAC POWER SUPPLY REQUIRED TO POWER WALL MOUNTED SPEED CONTROLLER.

- CONTACT CLOSURE: WHEN 'CONTACT' IS SHORTED TO 'COM' THE 0-10 VDC OUTPUTS WILL GO TO 0 VOLTS CAUSING ALL CONNECTED SPEED CONTROLLERS TO DEFAULT TO THEIR LOCAL SETTING.
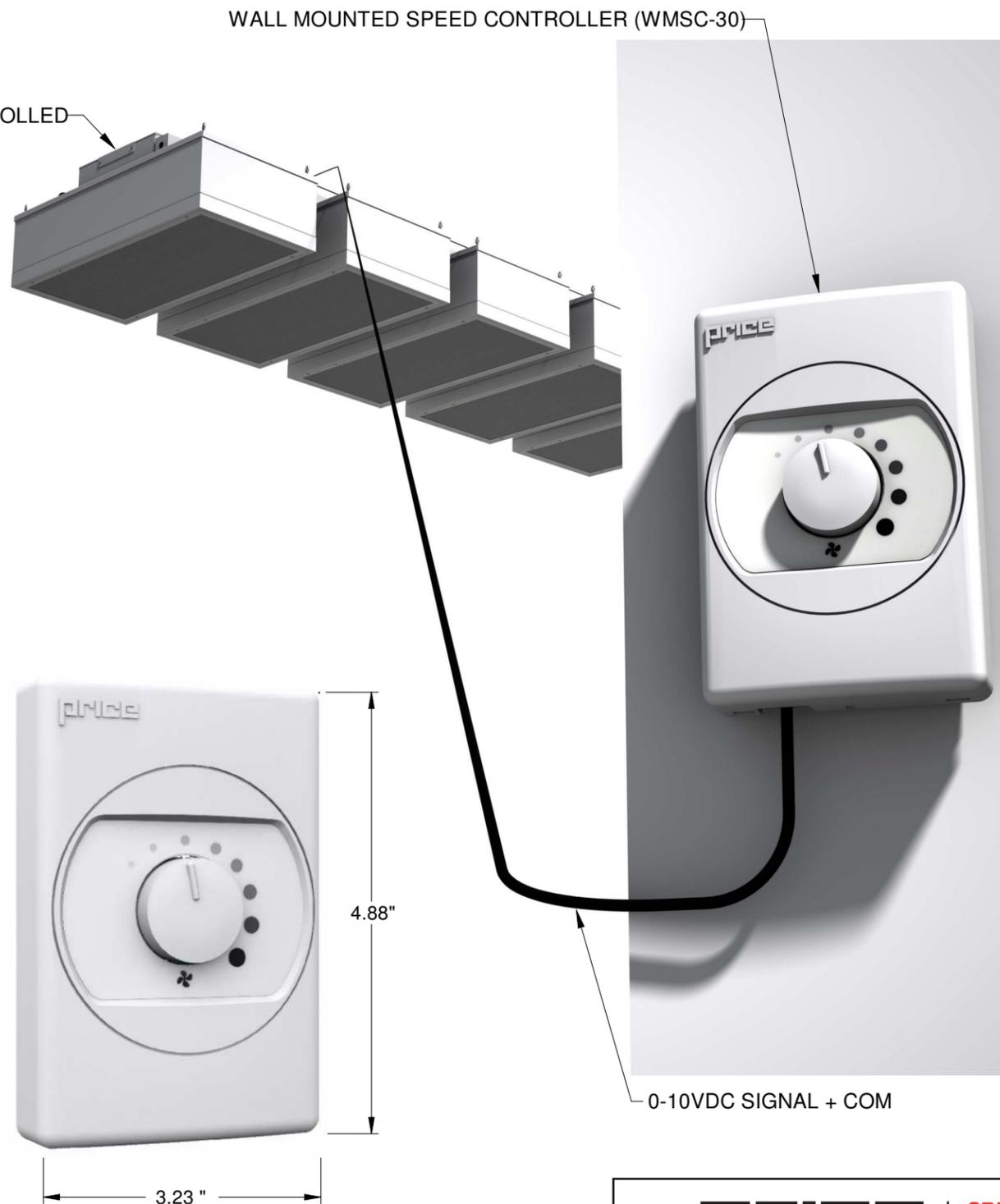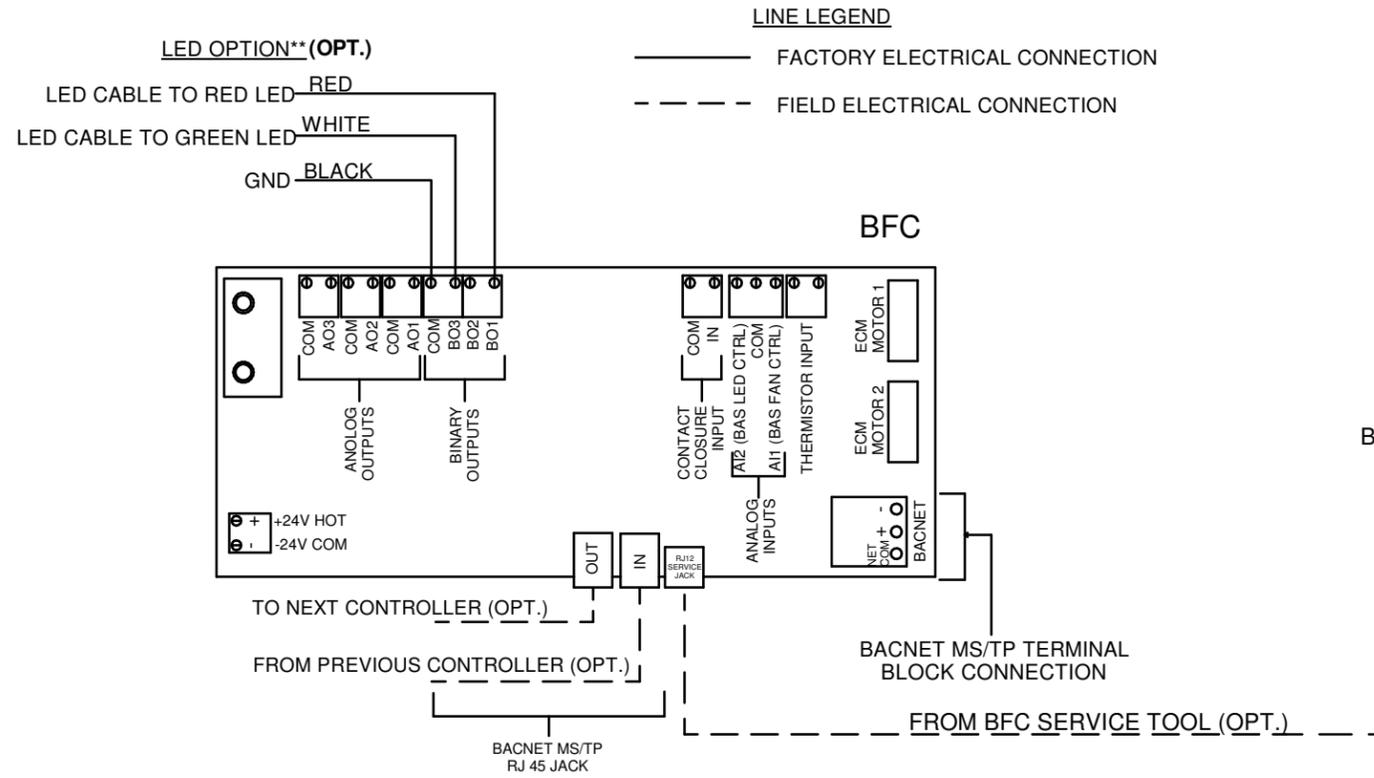
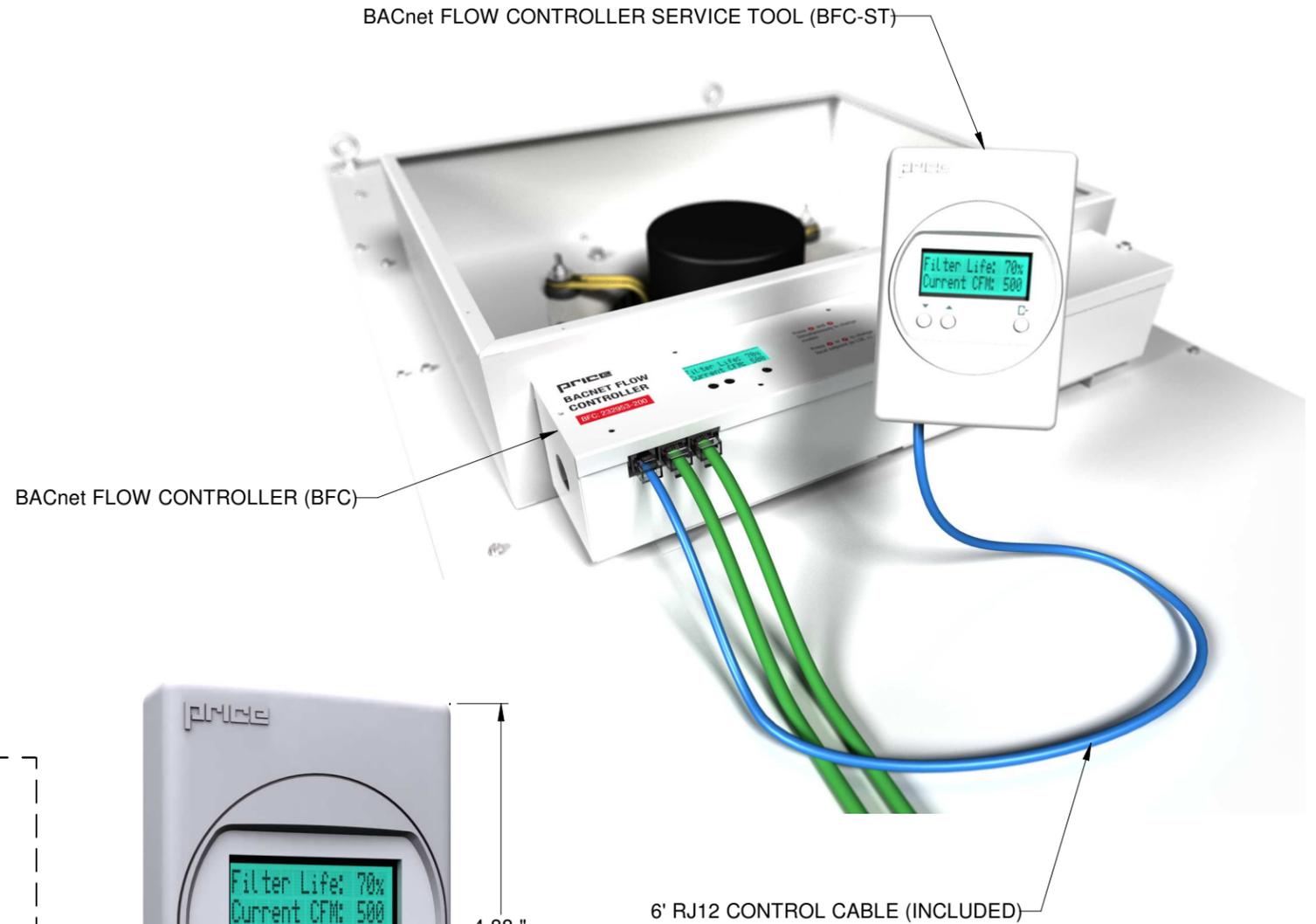**PRICE** | **CRITICAL ENVIRONMENTS**

PROJECT:

273558	Revision: B	05-04-2022

FFUCS

FAN FILTER UNIT CONTROL SYSTEMS
BACNET FLOW CONTROLLER SERVICE TOOL (BFC-ST)

BACnet FLOW CONTROLLER SERVICE TOOL (BFC-ST)

LED OPTION**(OPT.)

LED CABLE TO RED LED — RED
LED CABLE TO GREEN LED — WHITE
GND — BLACK

LINE LEGEND

——————— FACTORY ELECTRICAL CONNECTION

– – – – – – FIELD ELECTRICAL CONNECTION

BFC

COM AO3 COM AO2 COM AO1 COM BO3 BO2 BO1

ANOLOG OUTPUTS

BINARY OUTPUTS

COM IN AI2 (BAS LED CTRL) COM AI1 (BAS FAN CTRL)

CONTACT CLOSURE INPUT

THERMISTOR INPUT

ANALOG INPUTS

ECM MOTOR 1

ECM MOTOR 2

NET COM+ NET COM-

BACNET

+24V HOT
-24V COM

OUT   IN   RJ12 SERVICE JACK

TO NEXT CONTROLLER (OPT.)

FROM PREVIOUS CONTROLLER (OPT.)

BACNET MS/TP TERMINAL BLOCK CONNECTION

FROM BFC SERVICE TOOL (OPT.)

BACNET MS/TP RJ 45 JACK

BACnet FLOW CONTROLLER (BFC)

Filter Life: 70%
Current CFM: 500

4.88 "

3.23 "

6' RJ12 CONTROL CABLE (INCLUDED)

FEATURES:

- SERVICE TOOL CONNECTS TO THE RJ12 PORT ON THE BFC BOARD FOR FULL CONTROL UP TO 6 FEET AWAY FROM THE CONTROL PANEL. CONTROLS AND MENUS ARE THE SAME ON THE BFC BOARD AND THE SERVICE TOOL.

- PROVIDES A MEANS TO CONTROL THE BFC BOARD WHEN THERE IS INSUFFICIENT CLEARANCE FOR TRADITIONAL CONTROL PANEL ACCESS OR FOR EASIER CONTROLS ACCESS.

- NO ADDITIONAL POWER SUPPLY IS REQUIRED TO POWER THE BFC SERVICE TOOL.

PRICE | CRITICAL ENVIRONMENTS

PROJECT:

| 273558 | Revision: B | 05-04-2022 |

FFUCS
FAN FILTER UNIT CONTROL SYSTEMS
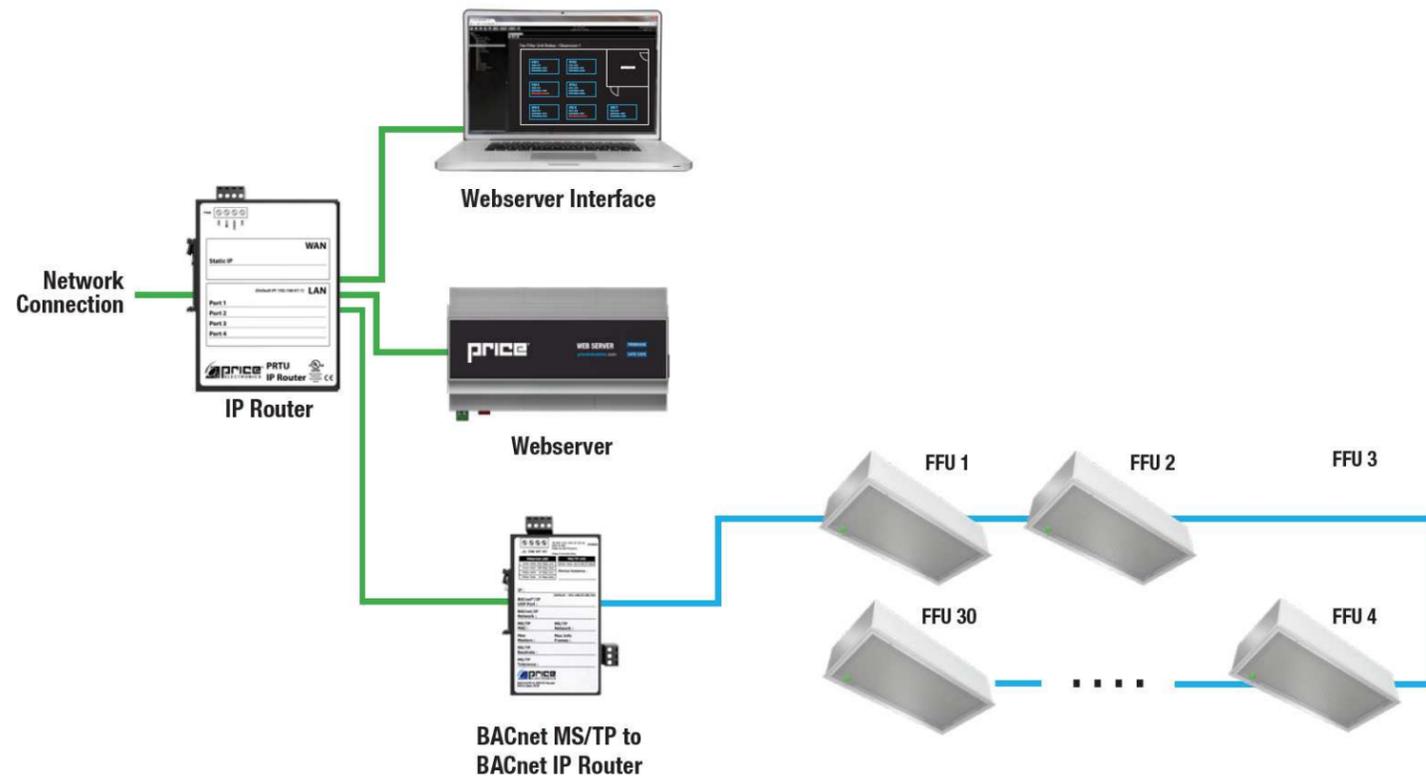### BACNET WEB SERVER DEVICES

<u>**WEB SERVER**</u>

FEATURES:

- INTERFACE TO BACnet MS/TP DEVICES IN BUILDING VIA WEB ADDRESS

- DISPLAY STATUS OF ETHERNET LAN VIA GREEN AND RED LEDs

- CAN BE CONFIGURED FOR REMOTE ACCESS VIA WEB ADDRESS

- ANIMATED GRAPHIC SCREENS (TO VIEW VARIABLES SUCH AS FILTER STATUS, CFM, FOR EACH FFU & MODIFY SET POINTS AS NEEDED

EXAMPLE WEB-BASED BACnet FFU CONTROL SYSTEM:

EXAMPLE WEB SERVER GRAPHIC INTERFACE:

BFC 24

213 HR
Motor Runtime

213 HR
Filter Runtime

1371 RPM
ECM Speed

659 CFM
Airflow

ECM Setpoint in % Motor Speed
21

Filter Load 0

RESET
Filter Reset

NORMAL
Unit Status

Unit Size: 24x48
Unit Filter Type: RSR
Unit Wheel Type: FC

Unit Fan Type: Constant Volume
Unit Voltage Type: 115

PROJECT:		
273558	Revision: B	05-04-2022

FFUCS
FAN FILTER UNIT CONTROL SYSTEMS
BACNET DEVICES

BACnet ROUTER

FEATURES:

- CONNECTS BACnet IP/ETHERNET TO BACnet MS/TP SEGMENTS

- DISPLAYS STATUS OF POWER & ETHERNET VIA DIAGNOSTIC LEDs

- CAN BE CONFIGURED IN THE FIELD VIA WEB BROWSER

IP ETHERNET ROUTER

FEATURES:

- CONNECTS BACnet TO BUILDING NETWORK

- DISPLAYS STATUS OF POWER, ETHERNET LAN & WAN VIA DIAGNOSTIC LEDs

- CAN BE CONFIGURED IN THE FIELD VIA WEB BROWSER

- STATEFUL FIREWALL, PAT, NAT & PORT FORWARDING PROPERTIES

IP ETHERNET SWITCH

FEATURES:

- FIVE PORT UNMANAGED ETHERNET SWITCH PROVIDES100 Mbps PERFORMANCE ON ALL PORTS

- ACCEPTS EITHER CROSS-OVER OR STRAIGHT THROUGH CABLES USING AUTO-DMIX PROTOCOL

- THE TABLE BELOW SHOWS THE NUMBER OF DEVICES REQUIRED FOR A GIVEN NUMBER OF FAN FILTER UNITS IN A SYSTEM.

- MORE UNITS CAN BE SUPPORTED, CONTACT CRITICAL ENVIRONMENTS APPLICATIONS TEAM FOR MORE INFORMATION.

- ASSUMES TWO PORTS ON IP ROUTER ARE FILLED WITH BACnet ROUTERS (i.e. 60 FFUs TOTAL).

EXAMPLE SYSTEMS:

Maximum # of Units	QTY of BACnet Routers	QTY of IP Switches	QTY of IP Router	Web Server
30	1	0	1	1
60	2	0	1	1
90	3	0	1	1
120	4	1	1	1
150	5	1	1	1
180	6	1	1	1
210	7	2	1	1
240	8	2	1	1
270	9	2	1	1
300	10	3	1	1
330	11	3	1	1

- SEE THE **BACnet FLOW CONTROLLER MANUAL** FOR MORE INFORMATION ON CONTROL SYSTEM OPTIONS.
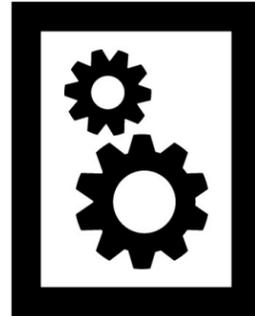
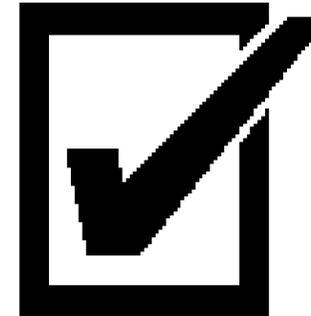**PRICE** | **CRITICAL ENVIRONMENTS**

PROJECT:

| 273558 | Revision: B | 05-04-2022 |

FFUCS
FAN FILTER UNIT CONTROL SYSTEMS
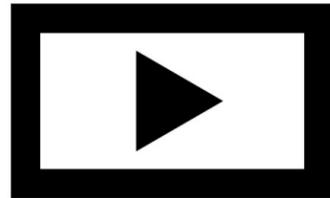## SUPPORTING CONTENT

MANUALS

FFU/PURAFLO WIRING DIAGRAMS

BACnet WIRING GUIDELINES FOR PRICE CONTROLS MANUAL

BFC BACnet FLOW CONTROLLER MANUAL

FFU/PURAFLO INSTALLATION MANUAL

SUBMITTALS

FAN FILTER UNIT ROOM-SIDE REPLACEABLE FILTER SUBMITTAL

FAN FILTER BENCH TOP REPLACEABLE FILTER SUBMITTAL

ULTRA FAN FILTER UNIT WITH INTEGRATED LIGHTING SUBMITTAL

VIDEOS

FFU FAN FILTER UNIT CONTROL OPTIONS
BACnet FLOW CONTROLLER START-UP GUIDE AND BASICS

WEBSITE

FOR MORE INFORMATION ON PRICE FAN FILTER UNITS, VISIT PRICEINDUSTRIES.COM

PRICE | **CRITICAL ENVIRONMENTS**

PROJECT:

| 273558 | Revision: B | 05-04-2022 |