

Metasys® System Extended Architecture

Field Equipment Controller (FEC) Series

Description

The Field Equipment Controller (FEC) is a programmable digital controller that communicates via BACnet® Master-Slave/Token-Passing (MS/TP) protocol. The controllers featured in this family are the 6-point FEC3610, 10-point FEC1610 and the 17-point FEC2610.

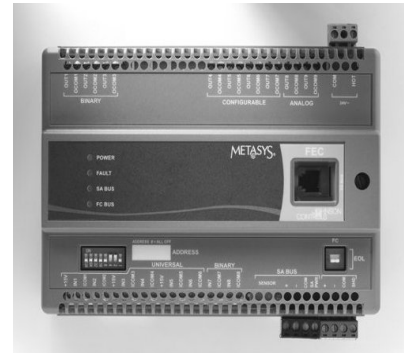
A full range of FEC models combined with the Input/Output Module (IOM) models can be applied to a wide variety of building applications ranging from simple fan coil or heat pump control, to advanced central plant management.

Refer to the Metasys® System Field Controllers, Network Sensors, and Related Products Product Bulletin (LIT-12011042) for product application details.

Features

- BACnet MS/TP communication provides open system compatibility.
- Writable flash memory allows you to download standard or customized applications from the Controller Configuration Tool (CCT) software.

- Wireless Commissioning Interface supports a Wireless Commissioning Converter which permits download, upload, and commissioning from a Bluetooth®-enabled laptop computer.
- Removable base allows the base to be ordered, mounted, and pre-wired without the controller electronics. (FEC1610 and FEC2610 only)
- Universal and configurable inputs and outputs support multiple signal options and increase controller application flexibility.
- Different models provide a wide range of point mix to meet application requirements and allow for the addition of one or more Input/Output Modules (IOMs) and/or Network Sensors to provide even more application capacity.
- All models have the same processor and memory, so they provide tremendous application flexibility.
- Autodiscoverable by Network Automation Engines (NAEs) for easy controller integration.
- Continuous loop tuning provided by patented proportional adaptive control (P-Adaptive) and Pattern Recognition Adaptive Control (PRAC) technologies
- Pluggable communication bus and power terminals speed installation.



FEC2610



FEC3610

Point Type Counts per Model

Point Types	Signals Accepted	FEC1610	FEC2610	FEC3610
Universal Input (UI)	Analog Input, Voltage Mode, 0 - 10 VDC Analog Input, Current Mode, 4 - 20 mA Analog Input, Resistive Mode, 0 - 2k ohm, RTD (1k NI [Johnson Controls], 1k PT, A99B SI), NTC (10k Type L, 2.225k Type 2) Binary Input, Dry Contact Maintained Mode	2	6	1
Binary Input (BI)	Dry Contact Maintained Mode Pulse Counter Mode (High Speed), 50 Hz	1	2	0
Analog Output (AO)	Analog Output, Voltage Mode, 0 - 10 VDC Analog Output, Current Mode, 4 - 20 mA	0	2	0
Binary Output (BO)	24 VAC Triac	3	3	3
Configurable Output (CO)	Analog Output, Voltage Mode, 0 - 10 VDC Binary Output Mode, 24 VAC Triac	4	4	2

Selection Chart

The FEC1610 and FEC2610 (MS-FEUx610-0) consist of two parts, which are also available separately: mounting base (MS-FEBx610-0) and the controller cover (MS-FECx610-0). **FEU = FEB + FEC**. The FEC3610 (MS-FEU3610-0) is a single-part item.

Code Number	Description
MS-FEU1610-0	10-Point Field Equipment Controller with 2 UI, 1 BI, 3 BO, and 4 CO, 24 VAC, and SA Bus, with Mounting Base, Single Pack
MS-FEC1610-0	Field Equipment Controller Cover with 2 UI, 1 BI, 3 BO, and 4 CO, 24 VAC, and SA Bus, Single Pack
MS-FEB1610-0	Triac Mounting Base for FEC1610, Single Pack
MS-FEU2610-0	17-Point Field Equipment Controller with 6 UI, 2 BI, 3 BO, 2 AO and 4 CO, 24 VAC, and SA Bus with Mounting Base, Single Pack
MS-FEC2610-0	Field Equipment Controller Cover with 6 UI, 2 BI, 3 BO, 2 AO, and 4 CO, 24 VAC, and SA Bus, Single Pack
MS-FEB2610-0	Triac Mounting Base for FEC2610, Single Pack
MS-FEU3610-0	6-Point Field Equipment Controller with 1 UI, 3 BO and 2 CO, 24 VAC, and SA Bus, Single Pack

Field Equipment Controller (FEC) Series (Continued)

Accessories

FEC Family Accessories (Order Separately)

Product Code Number	Description
Y64T15-0	Transformer, 120/208/240 VAC Primary to 24 VAC Secondary, 92 VA, Foot Mount, 30 in. Primary Leads and 30 in. Secondary Leads, Class 2
Y65A13-0	Transformer, 120 VAC Primary to 24 VAC Secondary, 40 VA, Foot Mount [Y65AS], 8 in. Primary Leads and 30 in. Secondary Leads, Class 2
Y65T42-0	Transformer, 120/208/240 VAC Primary to 24 VAC Secondary, 40 VA, Hub Mount [Y65SP+], 8 in. Primary Leads and Secondary Screw Terminals, Class 2
Y65T31-0	Transformer, 120/208/240 VAC Primary to 24 VAC Secondary, 40 VA, Foot Mount [Y65AR+], 8 in. Primary Leads and Secondary Screw Terminals, Class 2
AP-TBK1002-0	2-position Screw Terminal that Plugs onto VMA and FEC3610 output point Spade Lugs
AP-TBK1003-0	3-position Screw Terminal that Plugs onto VMA and FEC3610 output point Spade Lugs
AP-TBK4SA-0	Replacement MS/TP SA Bus Terminal, 4 Position Connector, Brown, Bulk Pack
AP-TBK4FC-0	Replacement MS/TP FC Bus Terminal, 4 Position Connector, Blue, Bulk Pack
AP-TBK3PW-0	Replacement Power Terminal, 3 Position Connector, Gray, Bulk Pack
MS-BTCVTCBL-700	Cable replacement Set for the MS-BTCVT-1 or the NS-ATV7003-0; includes one 5-foot retractable cable.
MS-FUSE01-0	Replacement fuse, bulk pack.

Technical Specifications

FEC Series				
Product Code Numbers		MS-FEC1610-0 Field Equipment Controller - Cover MS-FEB1610-0 Field Equipment Controller - Triac Mounting Base MS-FEU1610-0 Field Equipment Controller - Cover and Triac Mounting Base	MS-FEC2610-0 Field Equipment Controller - Cover MS-FEB2610-0 Field Equipment Controller - Triac Mounting Base MS-FEU2610-0 Field Equipment Controller - Cover and Triac Mounting Base	MS-FEU3610-0 Field Equipment Controller
Supply Voltage		20 - 30 VAC at 50 or 60 Hz, Class 2 or Safety Extra Low Voltage (SELV)		
Power Consumption		10 VA typical, 14 VA maximum, plus all BO and Configurable Output loads		
Ambient Conditions	Operating	0 to 50°C (32 to 122°F); 10 to 90% RH noncondensing		
	Storage	-40 to 70°C (-40 to 158°F); 10 to 90% RH noncondensing		
Terminations		Screw Terminals and Screw Terminal Pluggable Blocks		6.3 mm (1/4 in.) spade lugs except communications and 24 VAC power, which are screw terminal pluggable blocks
Controller Addressing		DIP switch set (4-127). Addresses 0-3, 128-255 are reserved.		
Communications Bus		BACnet MS/TP; 3-wire FC Bus between the NAE and other devices. 4-wire SA Bus between network sensors and other devices. ¹		
Mounting		On flat surface with screws on three mounting clips or a single 35 mm DIN rail		On flat surface with screws
Compliance	United States	UL Listed, File E107041, CCN PAZX, UL 916, Energy Management Equipment FCC Compliant to CFR47, Part 15, Subpart B, Class A		
	Canada	UL Listed, File E107041, CCN PAZX7, CAN/CSA C22.2 No. 205, Signal Equipment Industry Canada Compliant, ICES-003		
	Europe	CE Mark, EMC Directive 89/336/EEC, in accordance with EN 61000-6-3 (2001) Generic Emission Standard for Residential and Light Industry and EN 61000-6-2 (2001) Generic Immunity Standard for Heavy Industrial Environment and the Low Voltage Directive 73/23/EEC in accordance with EN 60730-1 (1999) Automatic electrical controls for household and similar use.		
	Australia and New Zealand	C-Tick Mark, Australia/NZ Emissions Compliant		
Weight		0.5 kg (1.10 lb)	0.68 kg (1.5 lb)	0.63 kg (1.4 lb)
Dimensions (Height x Width x Depth)		144 x 127 x 58 mm (5-11/16 x 5 x 2-1/4 in.)	180 x 127 x 58 mm (7-1/16 x 5 x 2-1/4 in.)	182 x 182 x 64 mm (7-3/16 x 7-3/16 x 2-1/2 in.)
Housing		Plastic housing Plastic material: ABS + polycarbonate UL94 5VB Protection: IP20 (IEC529)		

1. For more information, refer to the *MS/TP Communications Bus Technical Bulletin (LIT-12011034)*.