

EXP™ SYSTEM CONTROLLER

The EXP System Controller is the heart of Fike's explosion suppression system. Its state-of-the-art design features a micro-processor-based main circuit board specifically designed to monitor the protected hazard and react to incipient explosions by activating the components of the explosion protection system, which range from chemical suppression, mechanical isolation, chemical isolation, or any combination thereof.

The EXP main board, system power supply, standby batteries, field connection board, optional detection input, and relay boards are incorporated into a NEMA/IP-rated enclosure that protects the electronic components against dust and weather.

BASE FEATURES AND FUNCTIONS

The EXP System Controller provides the following:

- Microprocessor controlled to provide high reliability
- Custom programmable using Fike's EXP configuration software to provide operational flexibility
- Interconnection of up to eight controllers for joint release operation
- Touchscreen LCD for easy event viewing
- Readable event memory with a date stamp (4,095 events)
- Event status LEDs (Normal, Warning, Fault Zone A, Fault Zone B, Release Zone A, Release Zone B)
- Supervised zone disable switches for each zone of operation
- Lockable, wall-mounted Carbon or Stainless Steel enclosures with glass viewing window
- Inner dead-front door to prevent easy access to electronics
- Up to ten programmable relays (standard or force-guided contacts)
- Up to ten detector inputs per panel
- Actuator Field Modules (AFM) for control and monitoring of the explosion protection system components. Refer to data sheet **P23366** for AFM options.
- Two zones of release operation with a maximum of ten AFMs per zone
- USB port for downloading panel history
- System Reset and Silence buttons with LEDs
- Up to 44AH batteries maximum housed in the enclosure
- Optional external battery cabinet can house up to four batteries in nearby location
- Factory-installed cable gland options



Approvals

- Factory Mutual (FM)
- Conformité Européenne (CE)
- Atmosphères Explosibles (ATEX)

For exact certification listings, please reference the respective agency website.

SPECIFICATIONS

GENERAL		
OPERATING TEMPERATURE	-4°F to 140°F (-20°C to 60°C) ¹	
HUMIDITY	93% RH (non-condensing)	
ENCLOSURE		
MATERIAL	Steel body, single piece, Door steel with security glass	Body and door 304L stainless steel Door with security glass
MOUNTING	Wall-mount	
GLAND PLATE	Yes	No
FINISH	Epoxy-polyester powder	Scotch-Brite® brushed
COLOR	Gray RAL 7035	NA
STANDARDS	IEC 62208	
NET WEIGHT ²	54 lb (24.50 kg)	58 lb (26.31 kg)
NEMA DEGREE OF PROTECTION	1, 2, 3, 3R, 4, 4X, 5, 12, 13	
IP DEGREE OF PROTECTION	IP66 IEC 60529	
IK DEGREE OF PROTECTION	IK08 IEC 62262	
DOOR OPENING SIDE	Reversible, 120°	
LOCK TYPE	3-point lock, 3 mm double-bar	
REMOVABLE PARTS	Door by hinges Cable gland plate by screws	Door by hinges
USER INTERFACE		
SIZE/TYPE	7-inch RGB projective, capacitive, backlit touch panel	
RESOLUTION	800 x 480	
COVER GLASS	Anti-glare	
MAIN BOARD		
AC POWER	100/120/240 VAC, 50/60Hz (transformer primary)	
	3A circuit breaker	
	Factory-provided wire harness	
	Non-Power-limited and supervised	
24VAC POWER	Fused by F2, 10A field-replaceable fuse (P/N 02-4173)	
	Factory-supplied wire harness	
POWER CONSUMPTION	0.31 AMPS @ 24 VDC	
STANDBY (BATTERIES)	12-volt, sealed lead-acid batteries only	
	7 to 44 AH maximum battery charging capacity	
	24VDC nominal voltage (range = 20.4 to 26.4VDC)	
	Non-Power-limited and supervised	
	Fused by F1, 10A field-replaceable fuse (P/N 02-4173)	
	Factory-supplied wire harness	

SPECIFICATIONS - CONTINUED

FIELD CONNECTION BOARD	
MAIN BOARD CONNECTIONS	P34 – Field Circuits; P42 – Relay Connector
STATUS RELAYS	Non-supervised, Form C, SPDT
	Rated 2A @ 30VDC / 0.5A @ 250VAC resistive only
	20 AWG min, 16 AWG max (0.50 mm ² min, 1.50 mm ² max) wire gauge
AUXILIARY POWER A/B AFM POWER	24VDC nominal voltage (range = 19.8 to 27.6VDC)
	2A maximum current (special application)
	Power-limited
	Twisted shielded pair with drain wire (LiYCY or Belden 9318, 9316 preferred)
	18 AWG min, 14 AWG max (0.75 mm ² min, 2.5 mm ² max) wire gauge
	200Ω max wire resistance between AFMs, based on system load
	24VDC nominal voltage, -24VDC when active (special application)
RELEASE OUTPUT A/B	0.2A maximum current
	Power-limited and Supervised
	Twisted shielded pair with drain wire (LiYCY or Belden 9318, 9316 preferred)
	20 AWG min, 16 AWG max (0.50 mm ² min, 1.50 mm ² max) wire gauge
	200Ω maximum wire resistance based on system load
	10 AFMs maximum per circuit
	Normally open contacts rated 12VDC @ 2.1mA
DISABLE A/B	Power-limited and supervised
	Class B circuit path, 10K EOL assembly
	Twisted shielded pair with drain wire (LiYCY or Belden 9318, 9316 preferred)
	Power-limited and Supervised
CARD BUS COM	RS485 wire (Belden 9841 or equivalent)
	Class B circuit path, T-tapping of the circuit is not allowed
	4,000 ft. (1,219m) maximum circuit length
	96Ω max wire resistance; 0.05μF max wire capacitance
	10 AFMs maximum per circuit
	Power-limited and supervised
REMOTE BUS	Class A circuit path only
	RS485 wire (Belden 9841 or equivalent)
	1,000 ft. (300m) maximum circuit length between panels
	96Ω maximum wire impedance
	0.05 μF maximum wire capacitance
	T-tapping of the circuit is not allowed

¹ If the ambient temperature where the EXP panel is to be installed exceeds 113°F (45°C), the batteries cannot be installed in the EXP main panel enclosure. They must be installed in the external battery cabinet.

² Net weight is dependent upon configuration options, and is presented here as an average.

ORDERING

The following options must be selected when ordering the EXP System Controller to meet the specific project requirements:

- 1) Enclosure material (carbon or stainless steel)
- 2) Enclosure with cable glands factory installed or conduit penetrations field installed.
- 3) AC power input voltage.

Part Number	Description	Carbon Steel, Paint	Stainless Steel	Conduit Penetrations (field install)	Cable Gland Penetrations (factory installed)	100VAC Power Supply Option	120VAC Power Supply Option	240VAC Power Supply Option
F0292101	EXP System Controller, NO DETECTION	X		X		X		
F0292102	EXP System Controller, NO DETECTION	X		X			X	
F0292103	EXP System Controller, NO DETECTION	X		X				X
F0292104	EXP System Controller, NO DETECTION	X			X	X		
F0292105	EXP System Controller, NO DETECTION	X			X		X	
F0292106	EXP System Controller, NO DETECTION	X			X			X
F0292107	EXP System Controller, NO DETECTION		X	X		X		
F0292108	EXP System Controller, NO DETECTION		X	X			X	
F0292109	EXP System Controller, NO DETECTION		X	X				X
F0292110	EXP System Controller, NO DETECTION		X		X	X		
F0292111	EXP System Controller, NO DETECTION		X		X		X	
F0292112	EXP System Controller, NO DETECTION		X		X			X

ORDERING - OPTIONAL COMPONENTS

The following optional components can be added to the EXP system to expand its operational functionality.

Part Number	Description
10-3014	Class A, Non-Intrinsically Safe Detector Input Board. Five programmable, non-intrinsically safe detector input circuits, Class A (four wire) inputs. Compatible with 4-20mA, contact closure, and burst indicator devices. Refer to datasheet P23367. ^[1,2]
F0291448	Class B, Non-Intrinsically Safe Detector Input Board. Five programmable, non-intrinsically safe detector input circuits, Class B (two-wire) inputs. Compatible with 4-20mA, contact closure, and burst indicator devices. Refer to datasheet P23367. ^[1,2]
10-3016	Five Status Relay Board. Five programmable, Form C, SPDT, status relays. Refer to datasheet P23368. ^[1,3]
10-3017	Five Status Relay Board. Five programmable, Form C, SPDT, force-guided status relays. Refer to datasheet P23368. ^[1,3]
F0295064	Battery Cabinet, Carbon Steel body, single piece (wall-mount), with removable cable gland. Refer to datasheet P23379. ^[4]
F0295067	Battery Cabinet, Stainless Steel body, single piece (wall-mount). Refer to datasheet P23379. ^[4]

^[1] The component is installed in the EXP enclosure.

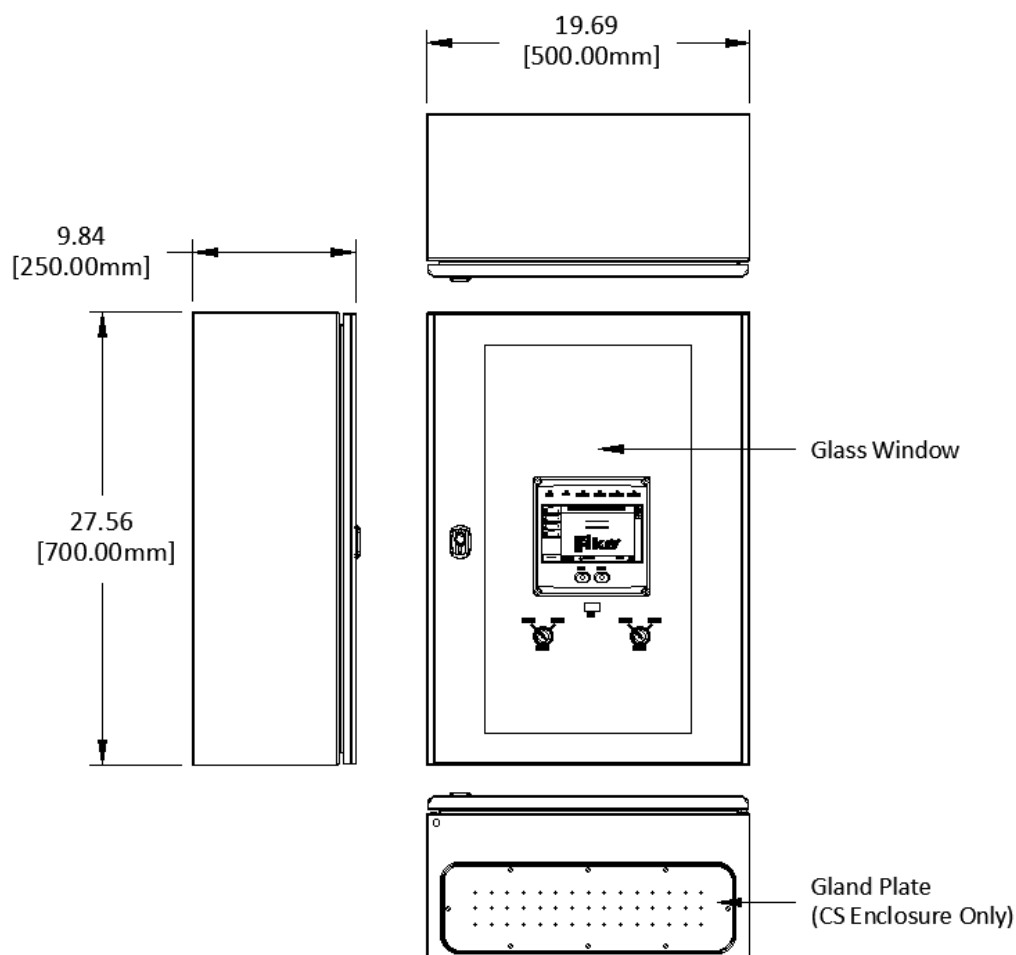
^[2] One is required for each EXP system (i.e., single or networked panels). A maximum of two can be added to each EXP System Controller.

^[3] One Relay Board can be added to each EXP System Controller.

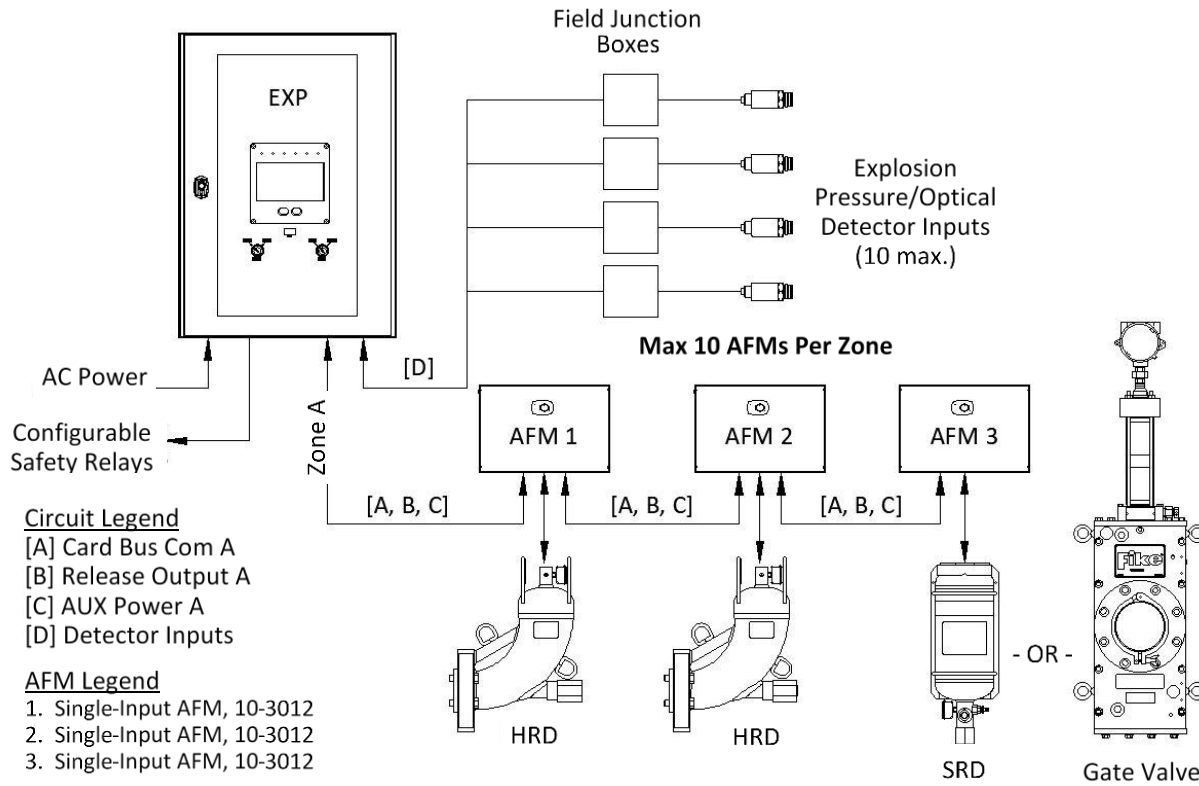
^[4] Battery cabinet must be mounted within 20 feet (6 m) of the EXP panel it serves.

ENCLOSURE DIMENSIONS

Dimensions are the same for the carbon or stainless steel enclosure options.



SINGLE PANEL SYSTEM DIAGRAM



MULTI-PANEL SYSTEM DIAGRAM

The EXP System Controller can operate as a standalone panel or as part of an eight-panel network. When panels are networked together, release operation can be shared between panels to increase the size of the system. All other event types are isolated to the local panel and are not shared across the panel network.

