KURZ INSTRUMENTS INC.™

Flow Averaging Transmitter
Series 255

The Kurz Series 255 Flow Averaging Transmitter is a versatile system transmitter designed for measuring flow rates in very large ducts that have non-uniform or unstable velocity profiles and/or wide temperature ranges.

The Series 255 is a state-of-the-art microprocessor-based system that powers and reads up to 16 independent sensing points, providing a grand average of the flow and temperature.

The Series 255 continuously reads and analyzes flow and temperature data from the individual channels, and automatically removes channels from the average that are under alarm or have been removed for service or repair.

The Series 255 is designed for high reliability and high availability with multiple and independent power and communication ports so that wiring issues will not bring down the entire multisensor network.

Kurz Instruments is dedicated to manufacturing and marketing the best thermal mass flow meters available and to support our customers in their efforts to improve their businesses.

Applications

- Stack & flue gas
- Coal pulverizer air
- Cement plants
- Nuclear power plants
- EPA & AMS emissions monitoring
- Any duct without metering runs

Kurz Instruments, Inc.
2411 Garden Road
Monterey, CA 93940
800-424-7356 | 831-646-5911
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SPECIFICATIONS

- Flow measurement range
  0 to 70,000 SFPM x A (0 to 325 NMPS x A)
  A=pipe / duct area
- Temperature measurement range
  -40°F to 500°F (-40°C to 260°C) (HT elements)
  -40°F to 932°F (-40°C to 500°C) (HHT elements)
- Measurement rate
  < 0.1 second per sensor @ 38.4 kbps
- Optically-isolated loop powered 4-20mA outputs (+/- 48 VDC isolation)
  12-bit resolution and accuracy;
  Maximum loop resistance is 300 Ohm at 18 VDC, 550 Ohm at 24 VDC, 1400 Ohm at 36 VDC
- Display update 2 seconds
- Two optically isolated solid-state relays/alarms
  0.5 A, 24 VDC optically coupled solid state relays
- Electronics operating temperature
  -20ºC to 50ºC
- Input Power
  Models 255A, 255B, 255C – 100-240 VAC, 50/60 Hz;
  Model 255DC – 24 VDC, 3.6-13.5 A,
  depending on number and type of flow sensors

CERTIFICATES & COMPLIANCES

- Industrial Safety for Electrical Equipment
  Ordinary Locations
  IEC/CSA/UL 61010-1 and 61010-2-030
  Hazardous Locations ETL/cETL, ATEX
  IEC/CSA/UL 60079-0 — Explosive Atmospheres
  IEC/CSA/UL 60079-7 — Increased Safety
  IEC/CSA/UL 60079-15 — Type of Protection
  IEC/CSA/UL 60079-31 — Equipment Dust Ignition
- EMI Compliance
  EN 61000-6-2 — EMC Immunity
  EN 61000-6-4 — EMC Emission
  EN 61000-3-2 — Harmonic Current Emissions
  EN 61000-3-3 — Voltage Fluctuations & Flicker
- Environmental
  IP 65 Ingress Protection
  IP 66 Ingress Protection
  NEMA Type 4X
- NAMUR Signaling Standard
  NE43-compliant 4-20mA outputs
  NE107-compliant front panel indicators

FEATURES

- Up to 16 sensors providing point velocity, temperature, and sensor fault code
- Polycarbonate,stainless steel, or rack mount options
- Flow and temperature measurement data quality indication for event logging
- Maintains a 30-day log of daily flow totals
- Velocity-dependent correction factors for flow rate calculations
- Optically-isolated loop powered 4-20 mA output
- Two digital inputs
  DI1 – external trigger to toggle Maintenance Mode
  DI2 – external trigger to initiate Zero-Span Cycle
- Six power/data ports for input channel network segmentation
  Reverse polarity, ESD, Surge, EFT, and EMI protection;
  Each port current limited to 3.4 A
- One 4-20 mA non-isolated analog input
- Battery backed real-time clock
- User-defined TAG ID and flow area
- Three EEPROM data areas for system configuration restore points
- Automatic sensor out-of-tolerance indication, alarm, and re-averaging for multipoint flow elements
- Isolated USB to RS-485 port for auxiliary MODBUS connection to individual channels
  Galvanic isolation up to 1000 VDC
- User-configurable English or metric units for mass flow rate, mass velocity, and process temperature
  KGH, KGM, NCMH, NLPM, NMPS, PPH, PPM, SCFH, SCFM, SFPM, SLPM, SMPS
- Easy-to-use interface
  Backlit Display with 4-lines of 20-characters each; 20-button keypad
- User-configurable flow display (scrolling or static)

MODELS

- AC-Powered models
  Model 255A up to 4 channels;
  Model 255B up to 9 channels;
  Model 255C up to 16 channels;
- DC-Powered model
  Model 255DC up to 16 channels

OPTIONS

- NEMA Type 4X window kits for stainless steel enclosures
- Startup Assistance
  Site visit by factory technicians for startup, installation verification, and commissioning
- Field Calibration
  In-situ flow profile traversing with calibrated measuring equipment by qualified technician

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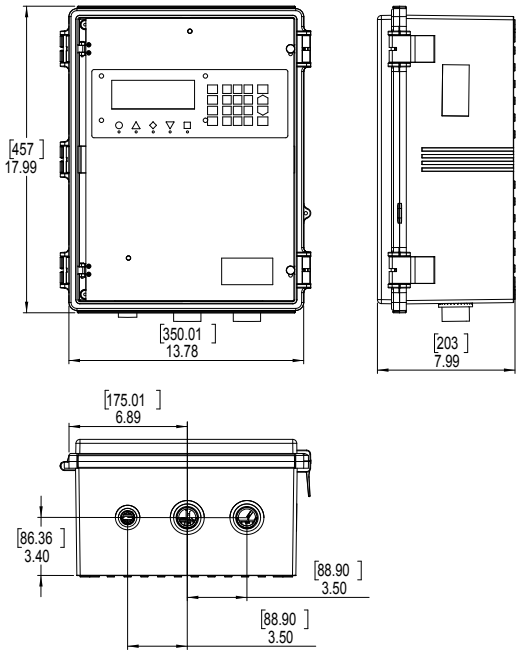
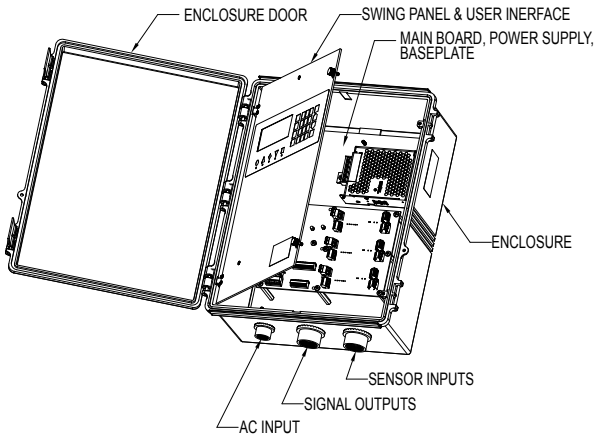
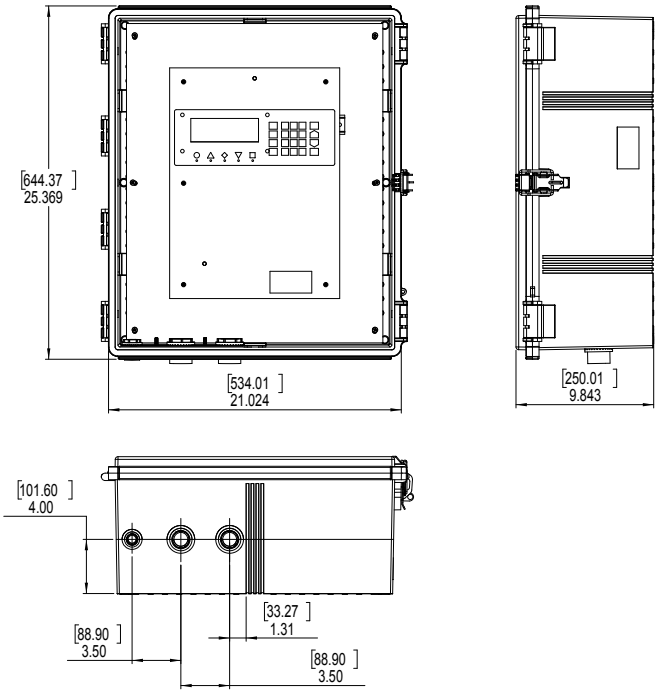
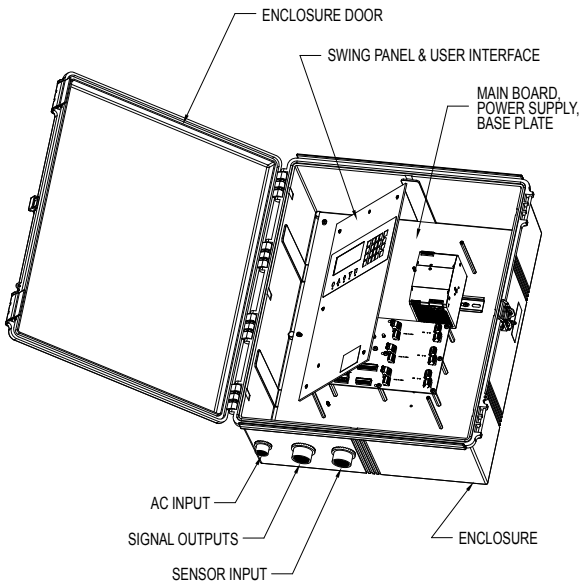




Models 255A, 255B, and 255DC; Polycarbonate; Ordinary Location **[mm] inches** **NET WT. 15 lbs / 6.8 kg**





Model 255C; Polycarbonate; Ordinary Location **[mm] inches** **NET WT. 30 lbs / 13.6 kg**

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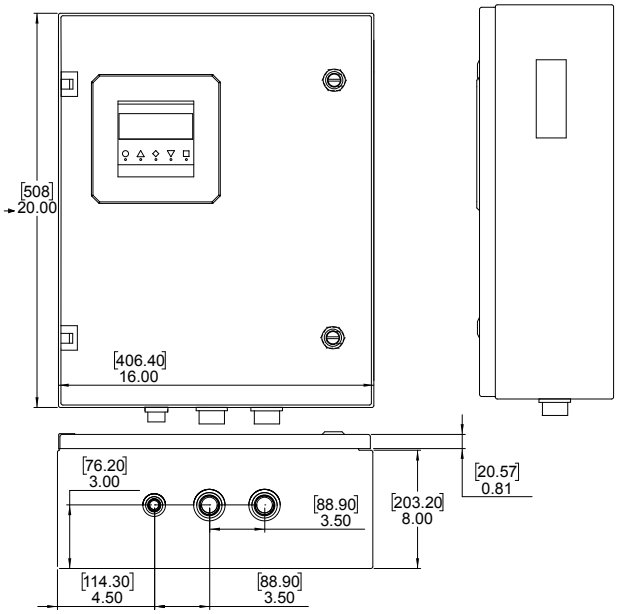
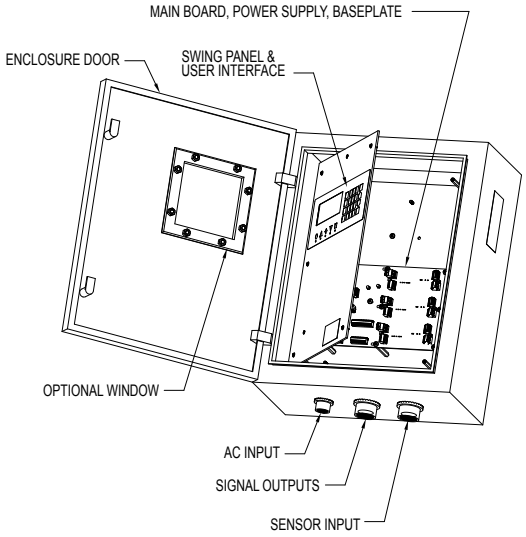
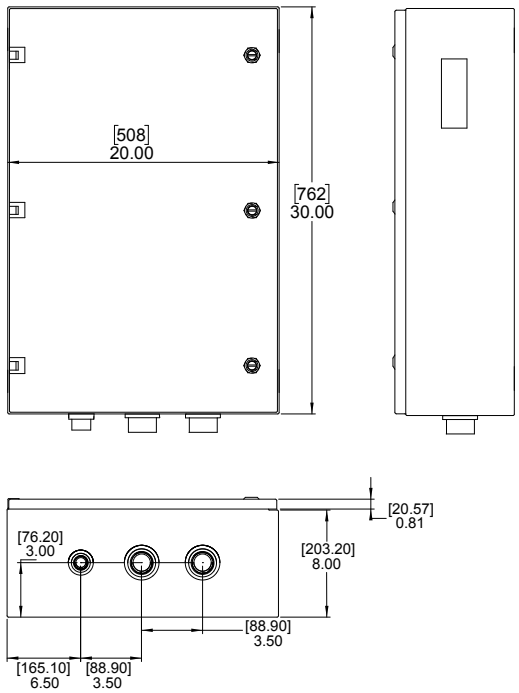


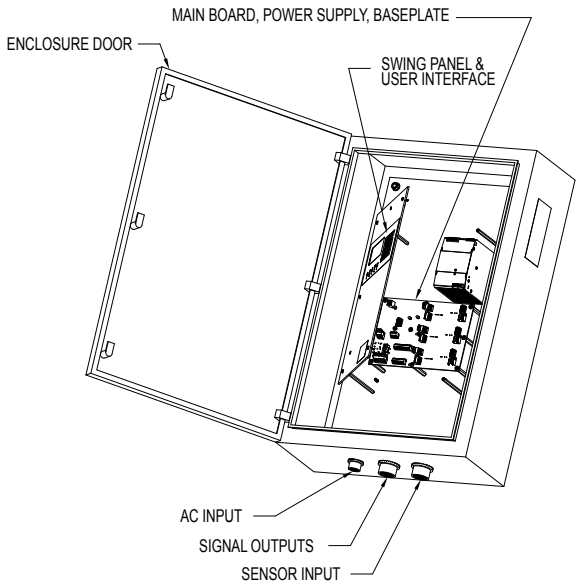


Models 255A, 255B, and 255DC; Stainless Steel; Ordinary Location
Note: Shown with optional window

[mm]
inches

NET WT. 27 lbs / 12.2 kg





Model 255C; Stainless Steel; Ordinary Locations

[mm]
inches

NET WT. 46 lbs / 20.9 kg

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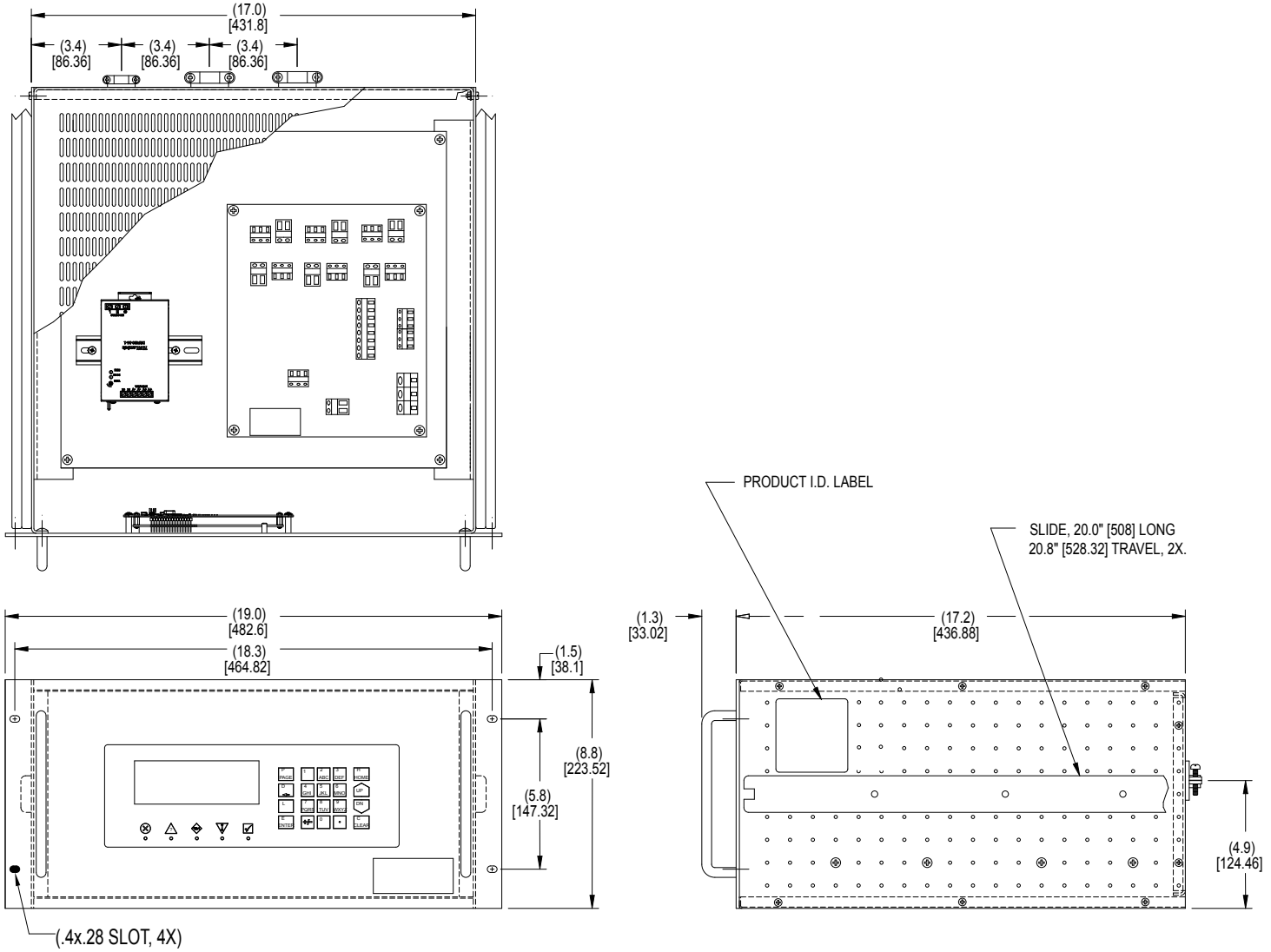

Models 255A, 255B, 255C, 255DC — Rack Mount

[mm]
inches

NET WT. 20 lbs / 9.1 kg

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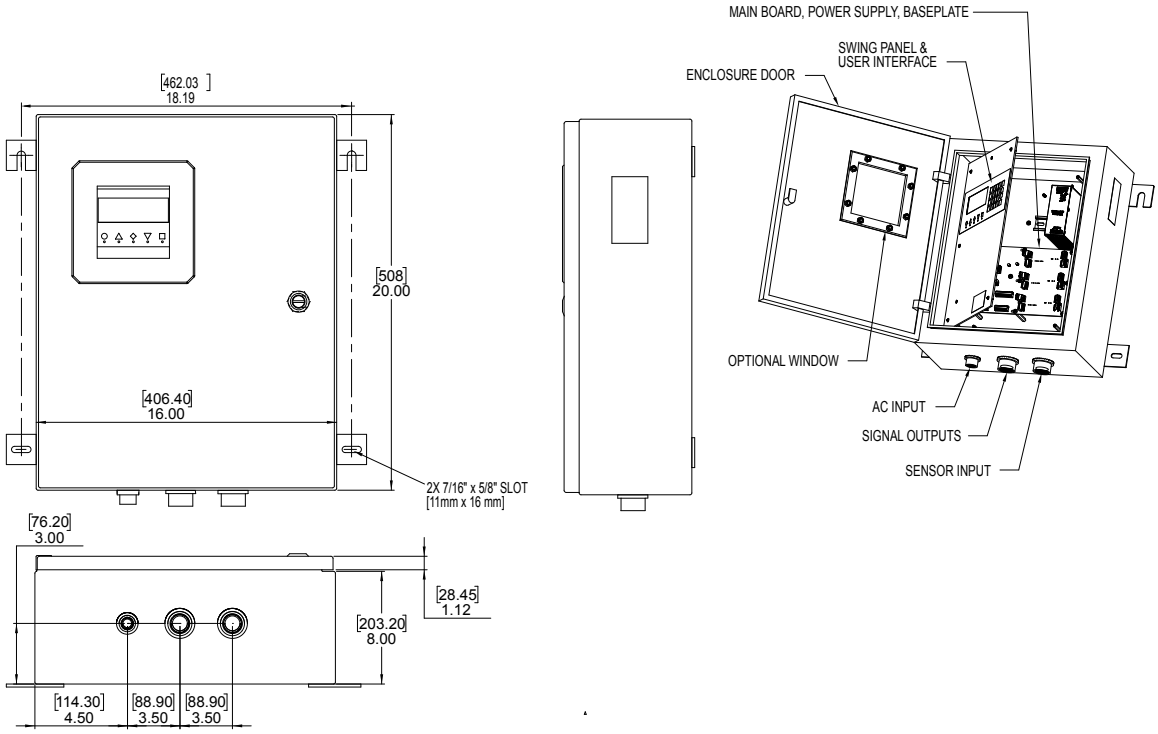
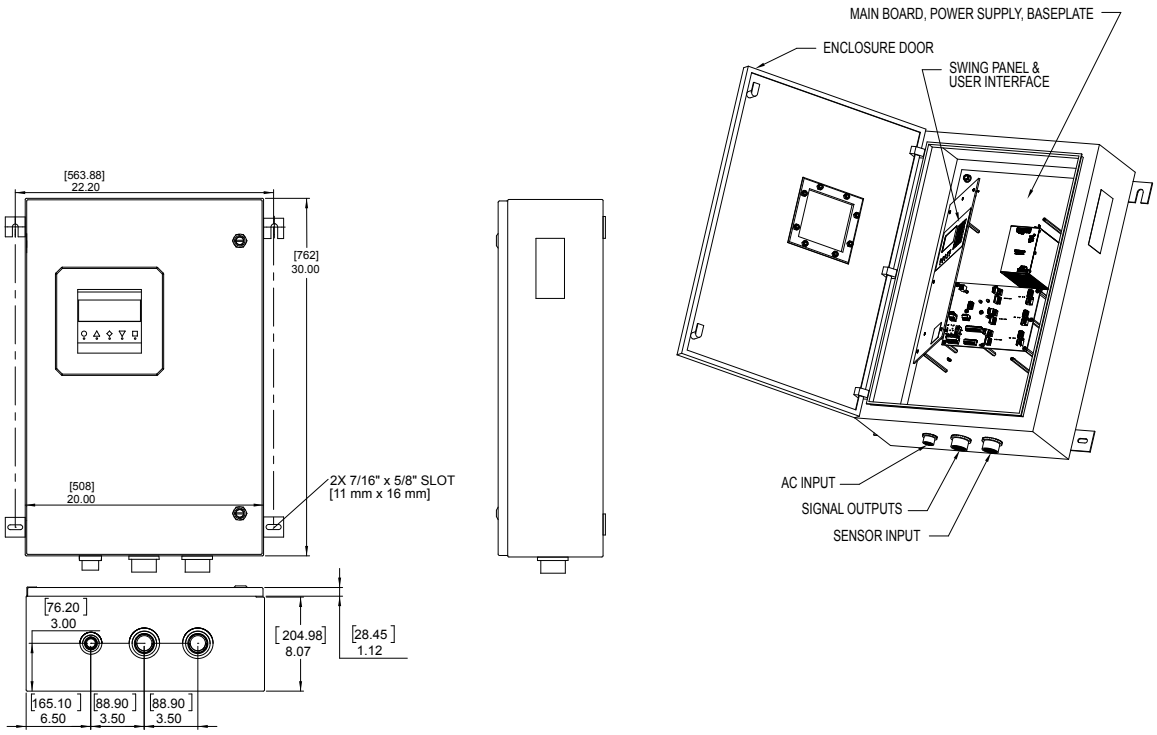


Models 255A, 255B, and 255DC; Stainless Steel, Hazardous Locations **[mm]** **NET WT. 27 lbs / 12.2 kg**
Note: Shown with optional window **inches**



Model 255C; Stainless Steel; Hazardous Locations **[mm]** **NET WT. 46 lbs / 20.9 kg**
Note: Shown with optional window **inches**

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750 _ _ _	_	_ _	_
Parent number	F1	F2	F3

Parent Number	Series Model
750993	Model 255A; up to 4 sensors
750994	Model 255B; up to 9 sensors
750995	Model 255C; up to 16 sensors
750997	Model 255DC; up to 16 sensors

F1	Option	Area Approval, Enclosure & Safety Approvals				
	A	General industrial safety	Polycarbonate	IP65	Conforms to UL STD 61010-1, 61010-2-030 Certified to CSA STD C22.2 No.61010-1, 61010-2-030	Intended to be installed and used in non-hazardous locations.
	B	General industrial safety	Stainless steel	IP65		
	C	General industrial safety	Rack mount	N/A		
	H	Hazardous location	Stainless steel	IP66	Ex nA nC ec IIC T3 Gc; Ex tc IIIC T80°C Dc Class I Zone2 AEx nA nC IIC T3 Gc; Zone 22 AEx tc IIIC T80°C Dc Class I, Division 2, Groups A-D, T3; Class II, Division 2, Groups F-G, T3 CE II 3 G Ex e IIC T3 Gc; CE II 3D Ex tc IIIC T80°C Dc	Can be installed and used in hazardous locations.

F2	Option	Communications and Inputs/Outputs	
	10	Standard	Two 4-20mA isolated outputs, two solid-state relays, two digital inputs, one non-isolated 4-20 mA input
	20	HART	Two 4-20mA isolated outputs, two solid-state relays, two digital inputs, one non-isolated 4-20mA input

F3	Option	Stainless Steel Window
	A	Not included
	B	Optional stainless steel window for stainless steel enclosures

Maximum Sensors & Rated Current			
Model	Max # Sensors	Input Power AC (W)	Output Current **DC (A)**
255A	4	95	3.6
255B	9	200	7.7
255C	16	350	13.5
255DC	16	- -	13.5

Enclosure Dimensions & Weight			
F1	255 Model	External Dimensions inches [mm]	**Enclosure Weight lbs [kg]**
A (Stainless Steel)	A, B, DC	20 x 16 x 8 [508 x 406.4 x 203.2]	27 [12.2]
	C	30 x 20 x 8 [762 x 508 x 203.2]	46 [20.9]
B (Polycarbonate)	A, B, DC	17.72 x 13.78 x 7.99 [450 x 350 x 203]	15 [6.8]
	C	24.96 x 21.0 x 9.84 [634 x 534 x 250]	30 [13.6]
C	A, B, C, DC	17.19 x 17 x 8.718 [436.6 x 431.8 x 221.4]	20 [9.1]
H (Stainless Steel)	A, B, DC	20 x 16 x 8 [508 x 406.4 x 203.2]	27 [12.2]
	C	30 x 20 x 8 [762 x 508 x 203.2]	46 [20.9]