



#### DESCRIPTION

The B3100 Series flow monitor is a flexible, durable, easy-to-use platform for your flow metering applications. Our trusted flow metering technology now offers a new flow monitor with more options and features than ever before with the B3100 Series.

#### APPLICATIONS

The B3100 monitor is suitable for application in a wide variety of metering needs. A few of the more common industries are:

- Secondary oil recovery applications
- Remediation and reclamation
- Fracture/refracture
- Coal bed methane
- Regulatory compliance and environmental accountability
- Industrial chemicals
- Aggressive chemical processing applications
- Semiconductor manufacturing
- Fertilizer production and dispensing
- Pesticide manufacture
- Liquid batching and water cooling

#### FEATURES

- Explosion-proof according ATEX, IECEx, FM and CSA c-us
- Rugged 1 in. NPT thread for flow meter mounting
- Data logging to survey information
- USB communication for configuration using a programming cable
- Modbus RS485 communication option.
- Easy configuration via PC with free downloadable software
- Easy K-factor and engineering unit configuration for volumetric or mass readings
- Display shows flow rate, total, measuring units and a flow rate indicating speedometer
- Seven-digit flow rate/total and 11-digit accumulated total
- Easy configuration with clear alphanumeric display
- Bright LED backlight
- Auto backup of settings and running totals
- Power requirements: Loop powered or battery
- Operational temperature – 40...158° F (– 40...70° C)
- Sixteen-point linearization of the flow curve, with interpolation
- Field operation via through-the-glass keypad



#### PART NUMBER CONSTRUCTION

<b>Blancett B3100 Display</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>	-	<input type="text"/>
<b>Model</b>					
Blancett B3100 Display	<b>B31</b>				
<b>Model</b>					
Explosion Proof* – Battery & Loop Power		<b>Z</b>			
<b>Mounting</b>					
Meter			<b>M</b>		
<b>Units of Measure</b>					
Customer Selectable					<b>CS</b>

\*For hazardous locations, the monitor must be installed on an explosion-proof rated meter. To maintain compliance, kit P/N B280-757 for meter mounting is required.



## SPECIFICATIONS

<b>Display</b>	Dimensions	Ø 2.56 × 1.77 in. (65 × 45 mm)
	Digits	Seven 0.47 in. (12 mm) and eleven 0.28 in. (7 mm) digits. Various symbols and measuring units
	Refresh rate	User definable: 8 times/sec – 30 sec
	Speedometer	To indicate the actual flow rate, the bar graph range is 0...100% in 20 blocks, each block is 5%
<b>Ambient Operating Temperature</b>	– 40...158° F (– 40...70° C)	
<b>Enclosure</b>	Sealing	Silicone
	Control keys	Three infra-red keys with operation through-the-glass front window
	Rating	NEMA 4x, NEMA 7, NEMA 8, NEMA 9, IP66, IP67
	Type	Die-cast aluminum Ex d enclosure
	Dimensions	4.41 × 5.24 × 5.83 in. (112 × 133 × 148 mm) W × H × D
	Entry thread	2 × 3/4 in. NPT (T1), 1 × 1 in. NPT (T2)
<b>Power Requirements</b>	Battery powered	Long life Lithium battery; lifetime depends on settings and configuration; Up to approx. 3 years <b>NOTE:</b> The battery can power the backlight for a short time after a keypad touch
	Loop powered	Loop powered, analog output; 11...27V DC; Minimum 3.5 mA <b>NOTE:</b> The loop powered analog output cannot power the backlight
	Power supply	9...27V DC; Consumption max. 3W
<b>Sensor Excitation</b>	All power sources	Terminal S3: 3V DC for pulse signals and 1.2 V DC for coil pickup, I <sub>out</sub> max. 100 µA
<b>Terminal Connections</b>	Removable plug-in terminal strip; Wire max. 1.5 mm <sup>2</sup> and 2.5 mm <sup>2</sup>	
<b>Data Protection</b>	EEPROM backup of all settings; Backup of running totals every minute; Data retention is 10 years Configuration settings can be password protected	
<b>Hazardous Area</b>	CSA c-us / FM	Class I, Division 1, Grps A, B, C, D
		Class II/III, Division 1, Grps E, F, G
		Class I, Zone 1, AEx d IIC T6/T5 Gb
		Zone 21, Aex tb IIIC T85°C/T100°C Db
<b>Directives and Standards</b>	EMC	EN 61326-1; FCC 47 CFR part 15
	LVD	EN/IEC 61010-1
	ATEX / IECEx	EN/IEC 60079-0; EN/IEC 60079-1; EN/IEC 60079-31
	CSA	CSA 22.2 No. 25, CSA 22.2 No. 30, No. 61010-1-12
	RoHS	EN 50581
	IP & TYPE	EN 60529; NEMA 250
	FM	Class 3600, 3615, 3616, 3810
	UL	UL 61010-1
<b>Input</b>	Pulse Flow Meter	Coil / sine wave (COIL-HI: 20 mVpp or COIL-LO: 90 mVpp sensitivity selectable), NPN, PNP, reed switch, NAMUR, active pulse signals 8 or 24V DC
	Frequency	Min. 0 Hz, max. 10k Hz for total and flow rate; Maximum frequency depends on signal type and internal low-pass filter; For example, a reed switch with low-pass filter: max. frequency 120 Hz
	K-Factor	0.000010...9,999,999 with variable decimal position
	Low-pass filter	Available for all pulse signals
	External reset total	
<b>Digital Output</b>	Pulse	Transmitting linearized accumulated total
	Frequency	500 Hz max; Pulse length user-definable from 1 msec to 10 sec
	One passive transistor output (NPN), not isolated; 300 mA to 50V @ 77° F (25° C)	
<b>Analog Output</b>	General	Transmitting linearized flow rate
	Galvanically isolated, loop powered 4...20 mA output	
	Accuracy	12 bit; Error 0.03% @ 68° F (typical 25 ppm/°F); analog output signal can be scaled to any desired range
<b>Communication</b>	Reading display information, reading/writing all configuration settings and data log extraction	
	Modbus RTU, RS485 2-wire, bus termination without resistor for low power solutions	
	Addressing	Maximum 247 addresses
	Baud rate	1200, 2400, 4800, 9600, 19K2, 38K4

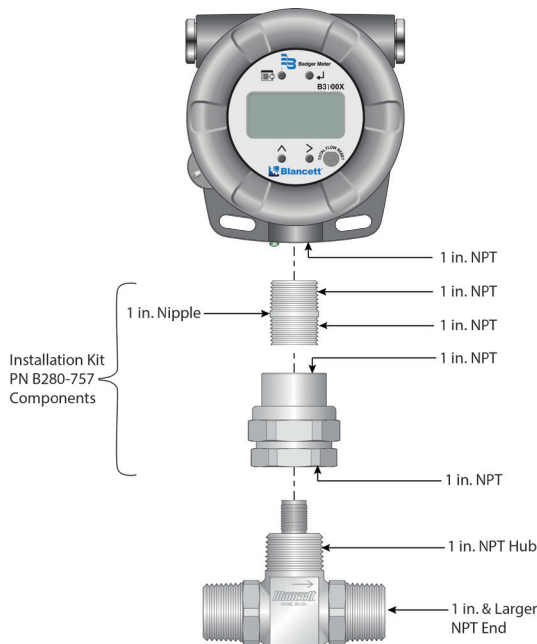
**SPECIFICATIONS (CONTINUED)**

<b>Data Logging</b>	Function	Records process data over time with real time clock Each log contains flow rate, total, accumulated total, time/date stamp and log number
	Interval logs	Every: 1 min, 5 min, 10 min, 15 min, 30 min, 1 hr, 2 hr, 3 hr, 4 hr, 6 hr, 8 hr or disable Max 1500 interval logs
	Daily logs	Configurable time once/twice per day or disable; Max 600 daily logs
	Event logs	When settings change (manual/Modbus) restart/power failure, factory reset, cleared total or error event; Max 724 event logs
	Extraction	Via USB (CU) or Modbus communications or USB programming cable
<b>Operational</b>	Displayed information	Linearized flow rate and/or total; Linearized total and accumulated total; Indicating speedometer for flow rate; Total can be reset to zero
	Total Digits	7 digits
	Total Units	L, m <sup>3</sup> US gal, igal, cf, il bbl, kg, ton, US ton, lb or none
	Total Decimals	0, 1, 2, or 3 <b>NOTE:</b> Total can be reset to zero.
	Accumulated Total Digits	11 digits
	Accumulated Total Units/Decimals	According to selection for total <b>NOTE:</b> Accumulated total cannot be reset to zero.
	Flow Rate Digits	7 digits
	Flow Rate Units	mL, L, m <sup>3</sup> , mg, g, kg, ton, US ton, US gal, igal, Oil bbl, lb, cf, rev, none, scf, nm <sup>3</sup> , nL or p
	Bar graph Speedometer	20 blocks; each block is 5% of total span
	Flow Rate Decimals	0, 1, 2, or 3
Flow Rate Time Units	sec, min, hr, day	

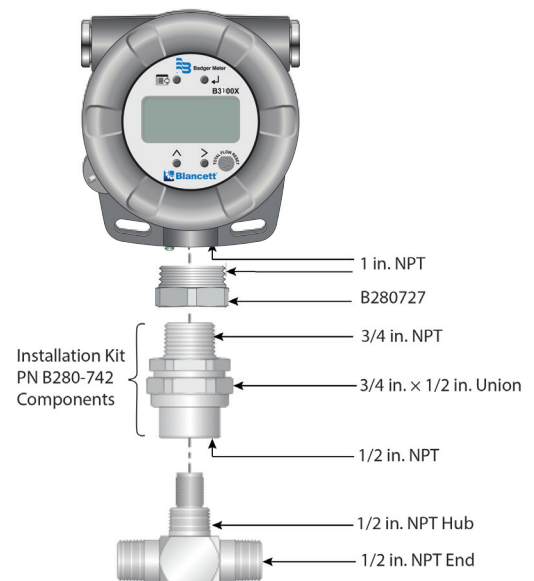
**ACCESSORIES**

Part Number	Description
B280-757	Explosion-proof Meter Mount Kit, 1 in. connections
B280-742 and B280-727	Explosion-proof Meter Mount Kit, 1/2 in. connections
B310001	USB Programming Cable
B310010	Wall Mounting Kit
B310011	Pipe Mounting Kit (requires wall mounting kit)
B310028	Replacement Battery

**Meter Mounting Kits**

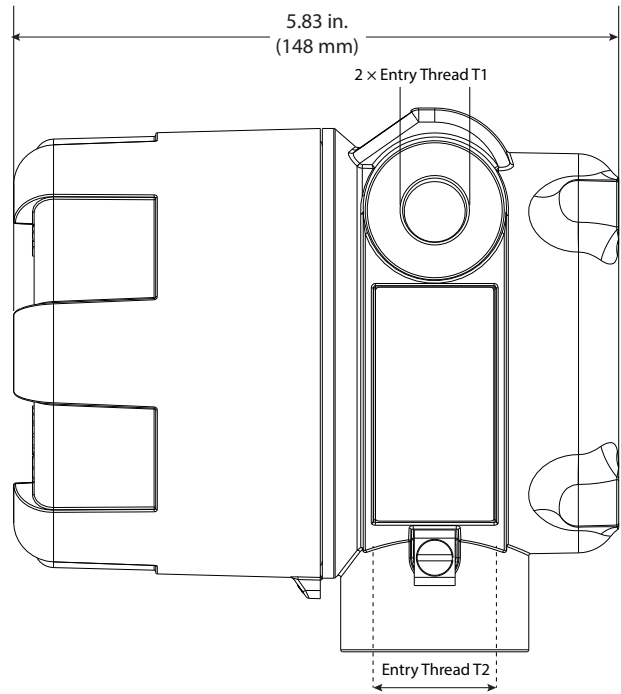
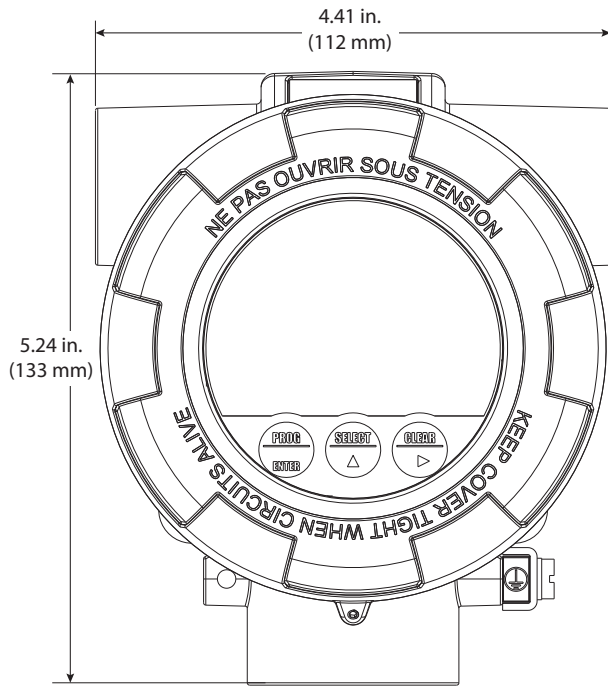


Turbine with 1 in. NPT hub size



Turbine with 1/2 in. NPT hub size

## DIMENSIONS



### Control. Manage. Optimize.

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