



MODEL: XXXXXXXXXX	II 2 G Ex d IIC T4 Gb	CE 1725	
S/N: XXXXXXXXXX	II 2 D Ex D IIC T150°C D0	IP66	
Do not open when an explosive atmosphere may be present.	Class I Div. 1 Groups B,C,D;		
WARNING: Do not open unless thoroughly heated and cooled 10 minutes of venting.	Class II & III Div.1 Groups E,F,G;		
After 6-HR closed when in operation.	Operating Temperature Code T4		
Caution: In circuit, never disassemble its cover. Check its operation after thermal test.	Ta -30°C to 70°C		
TRAC12KTE0017X	30VDC MAX I_{sc} 25mA		
	Mfg By Badger Meter, Inc.	US	
	Racine, WI USA	Recognized	
		Location Safety	
		E12850	

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SCOPE OF THIS MANUAL

This manual provides instructions for installing these service kit parts for the BP3000 explosion-proof flow monitor:

- B300-103 Explosion-Proof CPU for Basic BP3000 flow monitors
- B300-104 Explosion-Proof CPU for Advanced BP3000 flow monitors
- BP300-106 Explosion-Proof Display PCB

IMPORTANT

- *Any board must be replaced with an equivalent certified replacement part. You must contact Badger Meter for an appropriate replacement part.*
- *Repairs are only allowed to be carried out by the manufacturer or an authorized Badger Meter agent.*
- *Must be aware of proper ESD procedures and protocols. Any work must be done in an ESD approved environment.*
- *For any questions on installation, service replacements and other repairs contact Badger Meter.*



OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC-SENSITIVE DEVICES.

UNPACKING AND INSPECTION

Upon opening the shipping container, visually inspect the product and applicable accessories for any physical damage such as scratches, loose or broken parts, or any other sign of damage that may have occurred during shipment.

NOTE: If damage is found, request an inspection by the carrier's agent within 48 hours of delivery and file a claim with the carrier. A claim for equipment damage in transit is the sole responsibility of the purchaser.

SAFETY



EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.



RISQUE D'EXPLOSION - LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CEMATÉRIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 2.



DO NOT CONNECT OR DISCONNECT EITHER POWER OR OUTPUTS UNLESS THE AREA IS KNOWN TO BE NON-HAZARDOUS.



RISQUE D'EXPLOSION. NE PAS DÉBRANCHER TANT QUE LE CIRCUIT EST SOUSTENSION, À MOINS QU'LL NE S'AGISSE D'UN EMPLACEMENT NON DANGEREUX.

Electrical Symbols

Function	Direct Current	Alternating Current	Earth (Ground)	Protective Ground	Chassis Ground
Symbol					

SERVICE KIT PARTS INSTALLATION

⚠ DANGER

REMOVE (DE-ENERGIZE) ANY EXTERNAL POWER FROM THE UNIT BEFORE REMOVING THE SCREW COVER FROM THE ENCLOSURE. FAILURE TO DO SO CAN BE DANGEROUS.

Replacing the CPU Board

Service Kit Number B300-103 for the Explosion-Proof basic monitor contains:

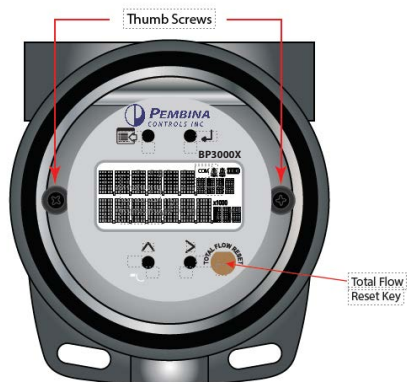
- One programmed, explosion-proof CPU PCB, PN B300014-T
- Four screws, Phillips tri-shank, #4-20 × 1/4, zinc/steel, PN B300113

Service Kit Number B300-104 for the Explosion-Proof advanced monitor contains:

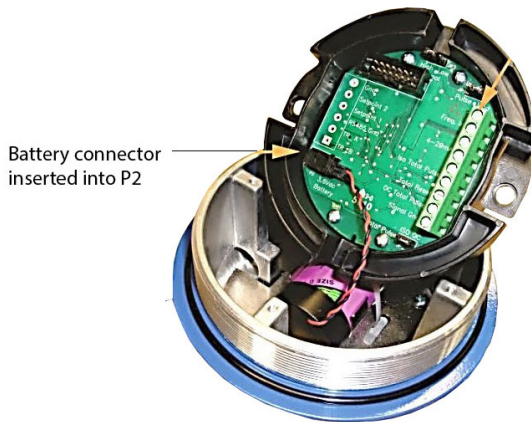
- One programmed, explosion-proof CPU PCB, PN B300017-T
- Four screws, Phillips tri-shank, #4-20 × 1/4, zinc/steel, PN B300113

This procedure applies to both Basic and Advanced Explosion-Proof BP3000 models.

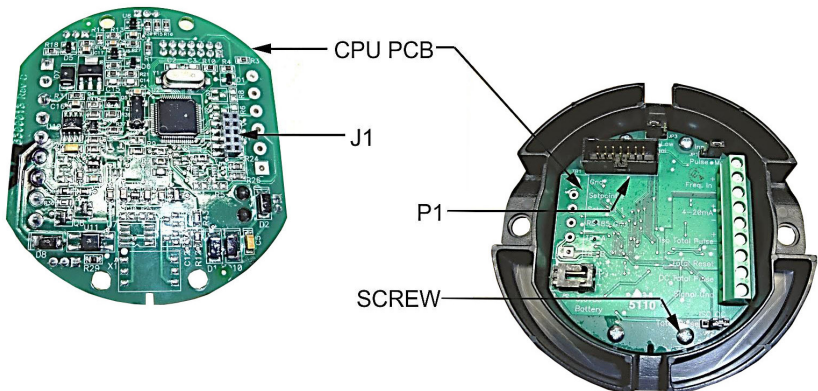
1. Grasp the enclosure cover and turn it counter-clockwise until it separates from the enclosure body. Set the cover aside.
2. Loosen the two thumb screws and slightly turn the circuit board assembly far enough to access the battery connector.



- Press the tab on the battery connector plug to release it from the P2 battery connector socket.



- Record the locations of all wiring connected to the CPU board.
- Remove all wiring from the CPU board.
- Remove the 4 screws holding the CPU board.
- Pull the CPU board straight up to unhook the J1 terminal block from the pins of the display board P1 connector.
- Align the new CPU board J1 terminal block with the pins of the display board P1 connector. Gently press the boards together making sure not to bend the pins. Align the screw holes in the housing with the screw holes of new CPU board.



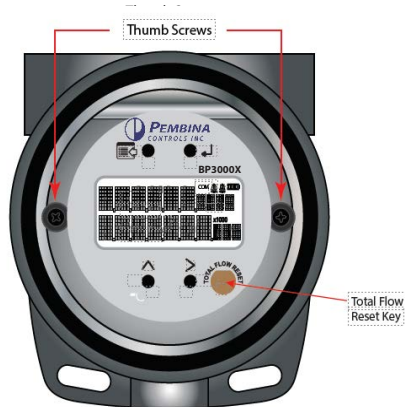
- Secure the new CPU board with 4 screws.
- Attach the battery connector plug to the P2 battery connector socket on the new CPU board.
- Connect the wiring to the new CPU board.
- Screw on the enclosure cover.

Replacing the Display Board

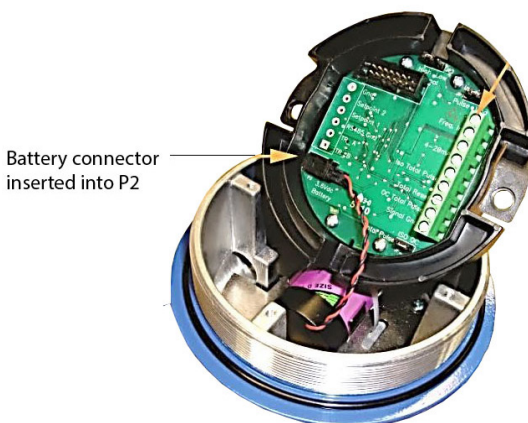
Service Kit Number BP300-106 for the Explosion-Proof display contains:

- One explosion-proof display PCB, PN BP300024
- Five screws, Phillips tri-shank, #4-20 × 1/4, zinc/steel, PN B300113

1. Grasp the enclosure cover and turn it counter-clockwise until it separates from the enclosure body. Set the cover aside.
2. Remove the TOTAL FLOW RESET key from the display housing by pulling it straight out. Set it aside.

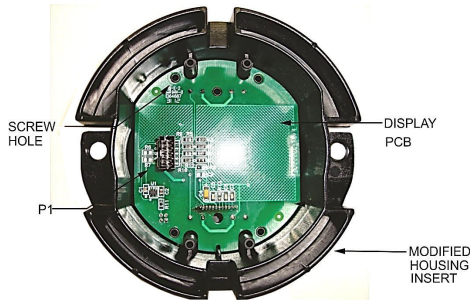


3. Loosen the two thumb screws and slightly turn the circuit board assembly far enough to access the battery connector.
4. Press the tab on the battery connector plug to release it from the P2 battery connector socket.

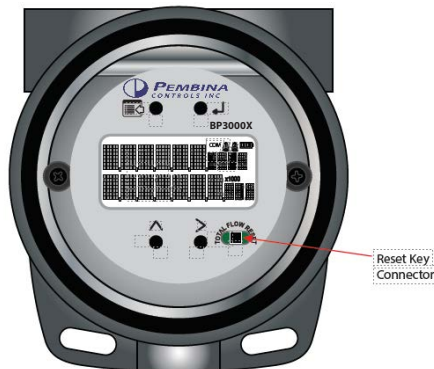


5. Remove the 4 screws holding the CPU board.

6. Pull the CPU board straight up to unhook the J1 terminal block from the pins of the display board P1 connector. Set it aside.
7. Remove the 5 screws holding the display board.
8. Lift out the display board and discard it.
9. Place the new display board in the holder and attach it with 5 screws.

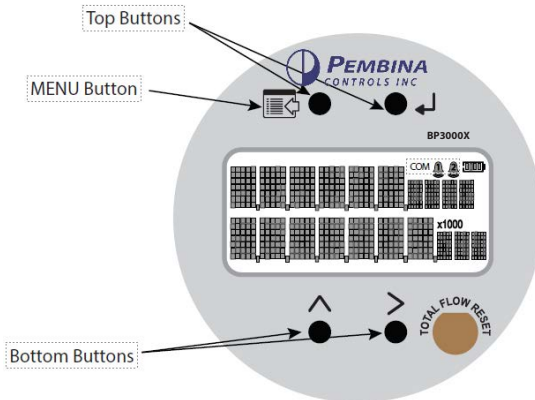


10. Align the CPU board J1 terminal block with the pins of the new display board P1 connector. Gently press the boards together making sure not to bend the pins. Align the screw holes in the housing with the screw holes of CPU board.
11. Secure the CPU board with 4 screws.
12. Attach the battery connector plug to the P2 battery connector socket on the CPU board.
13. Re-install the TOTAL FLOW RESET you removed in Step 2. Insert it through the display housing and into the reset key connector of display board. Orient the flat side of the key toward the display to align it with the square side of the reset key cutout in the cover plate. Do not push the reset button in too far. The button works best when it touches the enclosure cover glass, so leaving it up slightly allows it to contact the glass and be seated as the cover is screwed on.

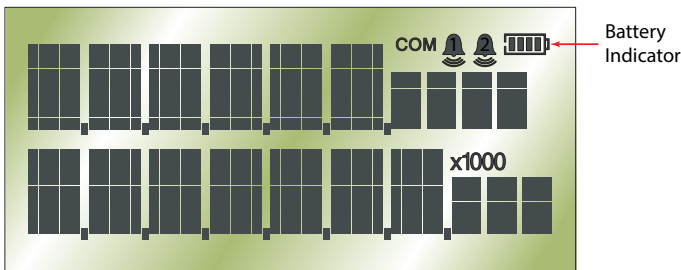


14. Screw on the enclosure cover.

Testing the Display Buttons



1. Press both of the bottom buttons at the same time. If these two buttons are working properly, the screen displays setup information.
2. Press both of the top buttons at the same time. If these two buttons are working properly, the screen displays a total reset.
3. Press the **MENU** button on the top left *twice* to reset the PCB to display battery full charge:
 - ◇ The first time you press **MENU**, the display shows "FLUID".
 - ◇ The second time you press **MENU**, the display shows "SAVING", then goes blank for a couple of seconds.
4. Screw the enclosure cover onto the enclosure bottom until it seats tightly. Do not tighten the enclosure set screw.
5. Wait at least 90 seconds after installing the enclosure cover, then place your finger on enclosure glass over the **TOTAL FLOW RESET** button. The battery charge indicator outline flashes off and on when button is activated, even if the parameter is disabled.



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