



# FOX

## OPERATION AND INSTALLATION GUIDE FOR FT100 SERIES 0.5" 6-DIGIT LCD 4 to 20mA LOOP POWERED PROCESS METER

Model No: FT120-101  
Serial NO: \_\_\_\_\_  
Input / Output: 4 to 20mA  
Special No: \_\_\_\_\_

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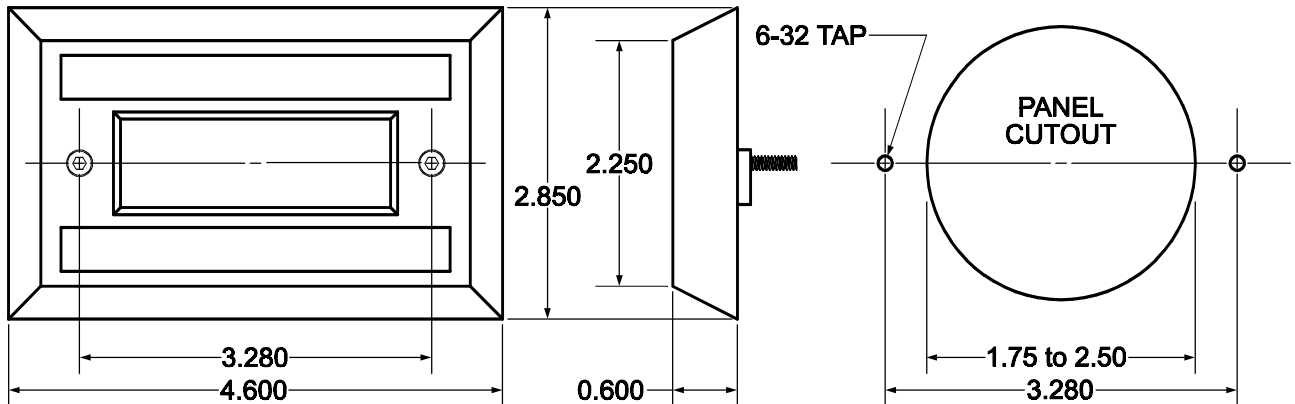
## FT100 DESCRIPTION / SPECIFICATIONS



- **Loop drop** - 3.9 volts max., short circuit protected.
- **Display** - 0.5" 6-digit, enhanced contrast, extended temperature range, high humidity sealed LCD.
- **Bezel** - black high impact ABS plastic, UL-VO94.
- **Gasket** - 1/16" thick closed cell neoprene, 1/2" wide adhesive back to meter.
- **Operating temperature range** - -25°C TO +80°C
- **Storage temperature range** - -20°C to +80°C
- **Mounting** - Meter installs from the front in 1/8 DIN or 1.75" to 2.5" round cutouts using a 9/32" allen wrench. By removing the front panel mounting hardware, the unit will screw directly onto most single gang electrical boxes.
- **Operating environment** - Tested to NEMA 4X standards. Will also tolerate exposure to most dilute acids and cleaning agents when properly installed.
- **Controls** - setup and calibration menus are accessed via two rear panel switches.
- **Connections** - All connections are via socketed screw terminal connectors.
- **Accuracy** - better than  $\pm 0.05\%$
- **A/D converter** - 24-bit: 1,000,000 counts of resolution.
- **Conversion rate** - 7.5 per second.
- **Display scaling** - No pots to adjust, apply 4mA, enter display value at 4mA (-99999 to 999999) then apply 20mA and enter display value at 20mA. Meter will calculate and apply display offset and scaling.
- **Outputs** - Two setpoints, 350 VAC/DC @ 130mA, independently programmable N/C or N/O via two rear panel switches.

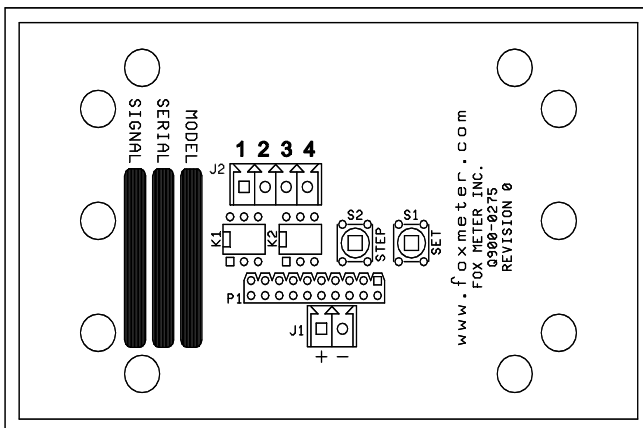


## FT100 SERIES PHYSICAL / MECHANICAL SPECIFICATIONS AND MOUNTING



- **Bezel material** - Black high impact ABS plastic (UL-V094).
- **Mounting** - Two 6-32 tapped holes in panel.
- **Gasket** - 1/16" thick low durometer closed cell neoprene foam gasket forms a water-tight seal between panel and meter.
- **Hardware provided** - All mounting hardware is attached to the meter.

## FT120-101 WIRING GUIDE



- **Input current** - 4 to 20mA.
- **Loop voltage drop** - 3.9VDC max.

### J1 WIRING

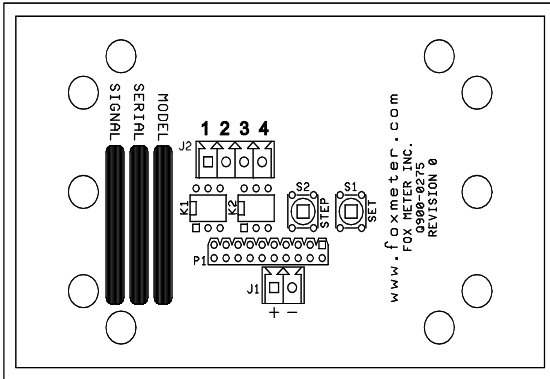
- **+** : 4-20mA current loop positive
- **-** : 4-20mA current loop negative
- **Setpoint max. voltage** - 350V AC/DC
- **Setpoint max. current** - 130mA
- **Power dissipation** - 500mW

### J2 WIRING

- **J2-1:** Setpoint 1 relay
- **J2-2:** Setpoint 1 relay
- **J2-3:** Setpoint 2 relay
- **J2-4:** Setpoint 2 relay



## FT120-101 PROGRAMMING INSTRUCTIONS



- To enter the setup menu, press the step pushbutton.
- To change the value of the displayed parameter, press the set pushbutton.
- To advance to the next parameter, press the step pushbutton.
- If a parameter involves setting multiple digits, such as a setpoint value, begin by pressing the set pushbutton. This will cause the least significant digit to flash. Continue to press and release the set pushbutton until the flashing digit is incremented to the desired value. Press the step pushbutton to advance to the next digit. Continue this procedure until all digits are set. **NOTE:** When entering multi-digit values, all blank digits must be set to 0.
- To save changes and return to normal operation, use the step pushbutton to step through the menu. Display will return to normal operating mode after final menu step.

## FT120-101 SETUP MENU STEPS

PARAMETER	DISPLAY	CHOICES	DESCRIPTION
DECIMAL POINT	dEC. Pt	NONE	ANNOUNCES NEXT STEP.
SET DECIMAL POINT		0.00000	5 DECIMAL PLACES
		0.0000	4 DECIMAL PLACES
		0.000	3 DECIMAL PLACES
		0.00	2 DECIMAL PLACES
		0.0	1 DECIMAL PLACE
		0	NO DECIMAL POINT
SETPOINT 1 POLARITY	S.P.1	nc no	SETPOINT 1 CONTACT NORMALLY CLOSED SETPOINT 1 CONTACT NORMALLY OPEN
SETPOINT 1 VALUE			ENTER 6 DIGIT VALUE FOR SETPOINT 1 TRIGGER POINT
SETPOINT 2 POLARITY	S.P.2	nc no	SETPOINT 2 CONTACT NORMALLY CLOSED SETPOINT 2 CONTACT NORMALLY OPEN
SETPOINT 2 VALUE			ENTER 6 DIGIT VALUE FOR SETPOINT 1 TRIGGER POINT

## FT120-101 CALIBRATION INSTRUCTIONS

- Apply 4mA to J1 observing proper polarity.
- To enter the calibration menu, press the SET and STEP pushbuttons simultaneously, release when the display indicates "CAL. 4".
- Press STEP to show current display value at 4mA, with the least significant digit flashing.
- Press and release the SET pushbutton until the flashing digit is incremented to the desired value. Press the STEP pushbutton to advance to the next digit. Continue this procedure until all digits are set. **NOTE:** When entering multi-digit values, all blank digits must be set to 0.
- Once all 6 digits have been set, press STEP. The display will indicate "Ent. 4" while the meter calibrates its 4mA reading.
- When the display changes to "CAL. 20", increase the input current at J1 from 4mA to 20mA.
- Press STEP to show current display value at 20mA, with the least significant digit flashing.
- Press and release the SET pushbutton until the flashing digit is incremented to the desired value. Press the STEP pushbutton to advance to the next digit. Continue this procedure until all digits are set. **NOTE:** When entering multi-digit values, all blank digits must be set to 0.
- Once all 6 digits have been set, press STEP. The display will indicate "Ent. 20" while the meter calibrates its 20mA reading.
- When calibration is complete, the meter will return to normal operation.



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## TERMS AND CONDITIONS

- Invoices are due **NET 30 DAYS** from the date of the invoice, pending credit approval. All shipments are F.O.B. Cortland, Illinois, U.S.A. Returns are allowed on standard product within 90 days of invoice date. Returns must pass factory inspection before being accepted and are subject to a 25% restocking charge.
- **FOX METER INC.** reserves the right to discontinue models, change specifications, price, or design of any of its products at any time without notice and without incurring any obligation whatsoever.
- Any costs incurred in the process of collecting past due invoices including, but not limited to, collection fee percentages and any legal fees will be added to the amount collected.

## WARRANTY

- **FOX METER INC.** warrants its products to be free from defective material or workmanship for a period of two years from date of purchase.
- **FOX METER INC.**, under this warranty, is limited to repairing the defective device when returned to the factory, shipping charges prepaid, within two full years from date of purchase.
- This warranty is transferrable to second and third parties and will remain in force for the two year term from date of original purchase from **FOX METER INC.**
- Units returned to **FOX METER INC.** that have been subject to abuse, misuse, damage or accident, or have been connected, installed or adjusted contrary to the instructions furnished by **FOX METER INC.**, or that have been repaired by unauthorized persons will not be covered by this warranty.
- The purchaser agrees to assume all liabilities for any damages and/or bodily injury which may result from the use or misuse of the product(s) manufactured by and/or purchased from **FOX METER INC.** by the purchaser, his employees, or agents.
- This warranty is in lieu of all other representations or warranties, expressed or implied and no agent or representative of **FOX METER INC.**, is authorized to assume any other obligation in connection with the sale and purchase of **FOX METER INC.**, products.
- The terms of this warranty will only be honored if the products or equipment for which warranty service have been requested have been paid for in full by the original purchaser within the agreed upon terms and conditions of sale.

### \* NOTE \*

- While **FOX METER INC.** provides application assistance on its products, personally and through our literature, it is the responsibility of the customer to determine the compatibility of the product in the application.

## FACTORY SERVICE AND REPAIR

- **FOX METER INC.** will service and repair its products free of charge for the period of two years, subject to the warranty conditions above.
- When returning any defective product to **FOX METER INC.**, please include any information that may pertain to the problem and please include the name of the individual for us to contact, along with your company name, address and phone number.

### RETURN REPAIRS TO:

**FOX METER INC.**  
302 W. Lincoln Hwy. Suite 2  
Cortland, IL 60112  
ATTN: Service Department