Magnetic Flow Meter Manual

Version:102

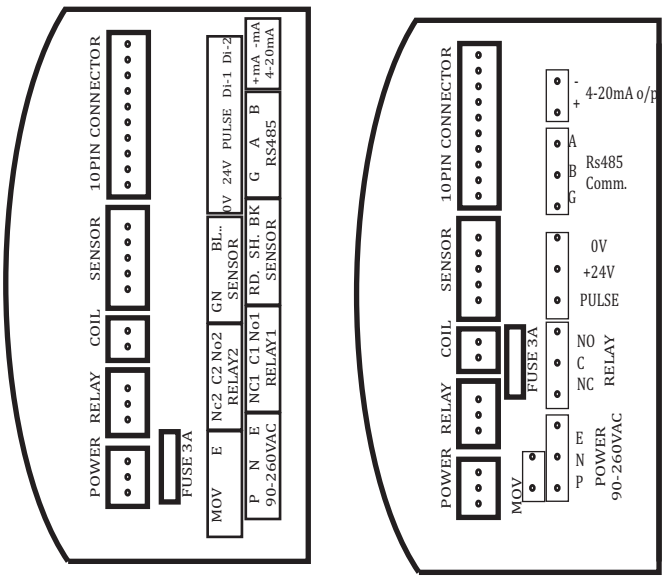
FEATURE:
Accuracy specification: 1.0 % (standard), 0.5% (optional)
Empty pipe detection.
Highly stable reading with fast response time.
Wide operating range.
Head mount display.
Faster update rate.
Low flow cut-off option.
Measures flow in both directions.
Graphics lcd with5 digit flow rate and 12 digit totalizer
Real time clock
Bar graph correspond to 0-100% flow rate
Unit selectable
Velocity display

Front screen

OPTIONAL FEATURES
4-20mAmp output.
Modbus over RS232/RS485.
Pulse/Freq output.
Remote Enable/Disable of totalizer.
Positive Negative Totalizer option.
Relay output for batching application.
Pulse Out put for totalizer
Totalizer calculation option:
Case1: totalizer increase/decrease as per positive totalizer /negative totalizer
Case2:totalizer increases for positive/negative totalizer
Case3:totalizer increases for positive flow only zero increments for negative flow.
GPRS /GSM connectivity facility

screen
Totalizer value (12digit)
Flow rate (5digit)
0-100% bar graph according to flow rate
tag no: for identification of instruments for customer end
real time clock

Key function
Down-decrements values
Up-increments values
Enter-for configuration data
Esc.-return from configuration menus
Tag no: for identification of instruments for customer end
Real time clock



Back terminal detail

Wire connection (Remote box, terminal box)
1:BL.:Blue Wire(Coil Wire)
2:GN.:Green Wire(Coil Wire)
3:BD.:Red wire(Sensor Wire)
4:SH.:Shield Wire(Sensor Wire)
5:BK.:black wire(Sensor Wire)

FOR CONFIGURATION DATA
press Enter Key
Password:0
CONFIG
UNIT: select specific unit
(LPM,LPH,LPS,
M3/SEC,M3/HR,
QF/SEC,QF/MN,QF/HR
GPS,GPH,GPM)
LOWCUT: zero flow value (10 LPM default)

FR-DIR: forward /reverse selectable

AVGCNT: average count for stability of flow rate(32 Default)
(001, 002, 004, 008, 016, 032, 064, 128)

TOTAL(Totalizer calculation option)(Default Case-3)
CASE 1(Totalizer increase in forward direction and Totalizer Decrease in Reverse direction)
CASE 2(Totalizer increase in both forward/reverse direction)
CASE 3(totalizer increments in only forward direction)(Default)

K-FCTR(FINAL K-FACTOR FOR Instruments)
(NOTE: For activation of this menu you have to go in **LOG SET UP** menu and set **k-factor display (KF DSP-YES)-yes**
OFFSET()
SPAN (Final k factor)

DI AMTR: internal id of flow meter
(25mm to 1000mm)

O/P SETUP (4-20MA OUTPUT CONFIGURATION)
This mode use to configure data for out put 4-20mA
OP-20MA
O/P-1
ZERO (set zero for 4 mA)
SPAN (Set Span for 20mA)
FAIL (set high/low for fail safe mode)

RTU SETUP: communication mode
BAUD: baud rate of instruments(2400,4800,9600,19200)
NODE: node id for instruments

LOG SETUP: this mode for k-factor display option mode
KF DSP(off/on)select ON to display K-Factor

SYS SETUP: system setup mode.
Configuration mode for Time, Date, Tag No
DATE(DD/MM/YY) select date month and year
TIME(HH/MM)select hour and minute

HOW TO RESET TOTALIZER
LOG SETUP:
RESET TOTALIZER
Press enter key will reset totalizer

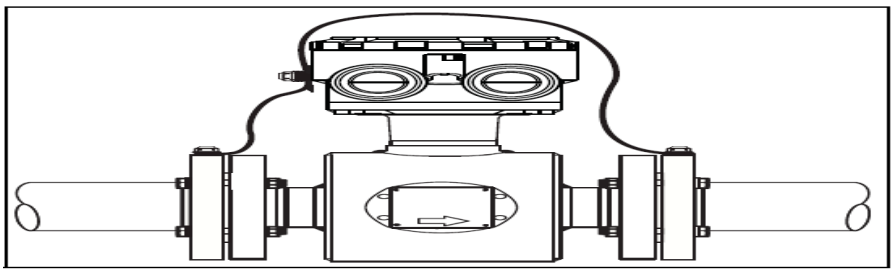
HOW TO CHANGE PASSWORD
Power off Instrument
Press down key and power on instrument simultaneously
Change P/W
Old Password:****(set old password)
Press Enter Key
New P/W****(set new password)
Press Enter Key

MODBUS DETAILS
40001 : Signed Flow Rate (LS Word)(integer)
40002 : Signed Flow Rate (MS Byte) (in case of 5 digit) (consider only 2 LSBits)(integer)
(consider 18 bit singed flow from 40001 and40002)

40003 : Lowest one byte of totalizer (4 P.BCD)
40004 : High two bytes of totalizer (4 P.BCD)
40005 :Highest two bytes of totalizer (2 P.BCD)
(Above Totalizer will be valid only if Total is displayed on Main Screen)

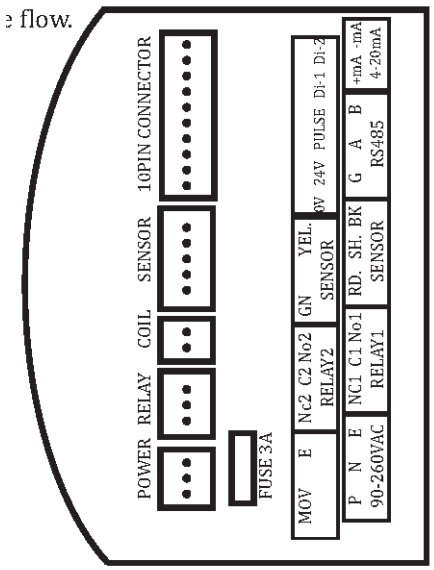
40006: %age of Flow Rate
40007: (bits-6th 7th) Flow Rate Status 00=Normal, 01=Under, 10=Over, 11=Open(6 and 7)

NOTE: proper Farthing must be require

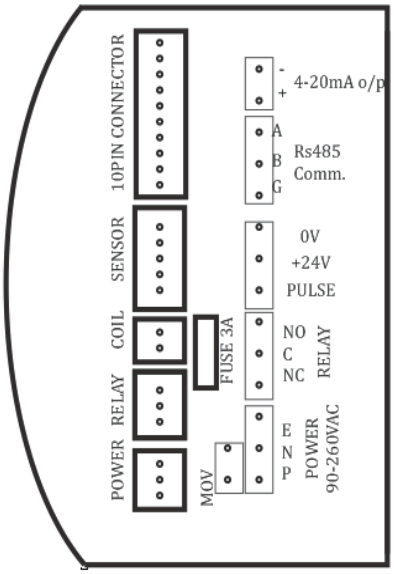


Guidelines:

- Do not install the flow meter near electric motor, transformers or heavy electrical power machine that may cause induction interferences.
- Select area to accommodate necessary servicing of the unit.
- Prevent flow meter from direct sunlight and temperature <50 degree.
- Connect the instruments as per the wiring diagrams given below.



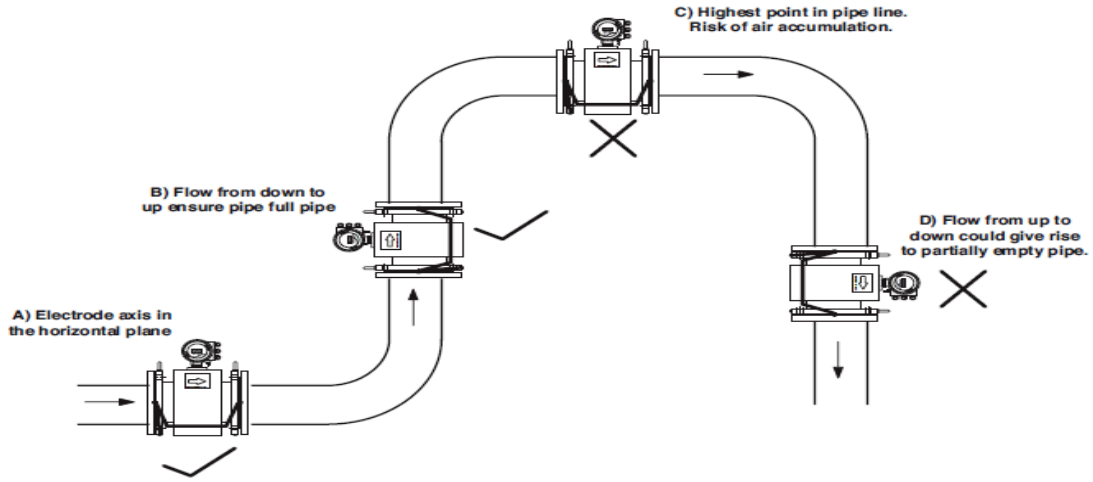
Back terminal detail



- To ensure specification accuracy over widely varying process conditions, install the sensor a minimum of **ten straight pipe diameters upstream and five pipe diameters downstream** from the electrode plane.
- Electrode should be **horizontal** to the ground.
- Meter must be **grounded** properly.
- Pipes should be filled with all time.
- All field wiring must have insulation suitable for at least 90-260VAC VAC.
- Ensure a circuit breaker with a rating of 6A or a switch, marked as disconnect switch, is in close proximity to the instrument and within easy reach of the operator. The switch is required to disconnect the instrument from the mains supply.
- The power should be connected through a 3 conductor mains cable suitable and approved for the country where the instrument is going to be used. The recommended conductor size for power supply and relay output is 14 gages with at least 250 VAC insulation.
- The recommended cable for 4-20 mA output and pulse output is the Belden 8760, shielded/twisted pair, 18 AWG (0.75 mm2) cable or equivalent.
- Fuse is rated as 3.0A, 250 VAC (slow blow).
- Care should be taken to ensure that no moisture or dust enters the housing.

Installation:

Install the flow meter vertically or at an incline with flow from down to up as this ensures that the pipe is always full.



For horizontal installations, the electrode axis should always be in the horizontal plane. The flow meter should be installed such that the forward flow is always in the direction pointed by the arrow that is placed on the sensor body. Use of suitable gaskets can prevent leakage from near the flanges. However, gaskets should be perfectly aligned with the holes. Improperly aligned gaskets can cause considerable errors in the measurement.

Reducers and expanders should be used as shown when there is a difference in the size of the pipeline and the flow meter.