masibus

1006H Flow Indicator Totaliser

Input Type	Range
0 to 20 mA	0 to 30000
4 to 20 mA	
0 to 5 V	
1 to 5 V	
*Pulse Input	
Integrated/ Batch Total	0 to 999999

Table 1.1

SPECIFICATIONS

NUMBER OF INPUTS	1
ACCURACY	± 0.25% of full scale ± 1 Count , **0.45 % - for Integrated/ Batch Total
BURN OUT DETECTION	Available for 1 to 5VDC, 4 to 20 mA, 0 to 10 KHz.
INPUT RESISTANCE	• 250 Ohms Internal for current Input • 320K Ohms for Voltage Input
ALLOWABE SIGNAL SOURCE RESISTANCE	DC input voltage: 1KΩ or less. Effect from allowable signal source Resistance: 0.031 % / 100Ω or less
ALLOWABLE INPUT VOLTAGE	DC voltage: ±20V DC
NOISE REJECTION RATIO	**Common Mode: >** 100db **Normal mode: >** 40db
RESPONSE TIME	**Input to relay o/p:** < 1 second. **Input to Analog o/p:** < 1 second or less, 63 % (10 - 90%) (Time required for o/p to reach 63% of the maximum excursion when PV changes from 10% to 90%)

RESOLUTION	16 bit
POLARITY PROTECTION	Not provided
MEMORY BACKUP	EEPROM

Loop Power Supply Specification

LOOP POWER SUPPLY	24VDC ± 5% @ 50mA

Retransmission Output

NUMBER OF OUTPUTS	1
OUTPUT SIGNALS	4 to 20 mA DC
LOAD RESISTANCE	500Ω or less
OUTPUT ACCURACY	± 0.25% of full scale +1 count
RESOLUTION	12 bits (5uA)

Contact Input (Digital input)

NO OF INPUTS	1
USAGE	Input 1 : Start Batch /Stop Batch
INPUT TYPE	Non- voltage contact input or transistor open collector input
INPUT CONTACT CAPACITY	24VDC,10mA or more (for non – voltage contact input)
ON/ OFF DETERMINATION	• **For non-voltage contact input** ON = contact resistance of 1KΩ or less, OFF = contact resistance of 20KΩ or more • **For transistor contact input** ON = 2V or less OFF = leak current of 100µA or less
MINIMUM RETENTION TIME FOR STATUS DETECTION	About 1 Second

Relay Contact Outputs

NUMBER OF OUTPUTS	2 (Flow alarm relays/ Batch relays)
USAGE	Flow alarm / Batch relay
RELAY CONTACT TERMINAL	2(Common, NO)
RELAY CONTACT RATING	250VAC/5Amps

Communication Specification

PROTOCOL	Modbus RTU serial
STANDARD	EIA RS-485
MAX. COMMUNICATION DISTANCE	1200 mtrs. (For 9600 bps RS 485)
COMMUNICATION METHOD	2 wire half duplex (RS 485)
DATA FRAME	N, 8, 1
COMMUNICATION RATE	9600, 19200 bps
MAX. CONNECTABLE CONTROLLERS/ INDICATOR	32
ADDRESS RANGE	1 to 99

Display Unit Specification

PV DISPLAY/ INTEGRATED TOTAL DISPLAY	0.56" 6 digit 7-segment red LED display
PARAMETER DISPLAY	0.56" 6 digit 7-segment red LED display

Power Supply Specification

POWER SUPPLY	110 to 230 VAC, 50Hz ; 24VDC**(optional)**
POWER CONSUMPTION	<10Va
WITHSTANDING VOLTAGE	• Between primary terminal and secondary terminal : 1500VAC(For 1 min) • Between primary terminal and ground terminal : 500VDC(for 1 min) • Between ground terminal and Secondary terminal: 500V AC (for 1 minute). • (**Primary terminal:** Power supply, relay output) (**Secondary terminal:** Analog input/output signal terminals, contact input terminal)

Signal Isolation Specifications

ISOLATION RESISTANCE	Between power supply terminal and ground terminal: 500 VDC, 50MΩ
MEASURED INPUT TERMINAL	Isolated from other input/output terminals. Not isolated from 24Vdc supply (Transmitter power supply) and internal circuit.
24V DC SUPPLY FOR	Not isolated from the

TRANSMITTER	measured input terminal & internal circuit, isolated from other input/output terminals.
RETRANSMISSION OUTPUT TERMINAL	Isolated from other input/output terminals and internal circuit.
CONTACT INPUT TERMINAL	Isolated from other input/output terminals and internal circuit.
RELAY CONTACT O/P TERMINAL (DIGITAL INPUT)	Isolated from other input /output terminals and internal circuit.
RS-485 COMMUNICATION TERMINAL	Isolated from other input/output terminals and internal circuit.
POWER SUPPLY TERMINAL	Isolated from other input / output terminals and internal circuit.
GROUND TERMINAL	Isolated from other input/ output terminals and internal circuit.

Environmental Specification

OPERATING TEMPERATURE	0 to 55°C
STORAGE TEMPERATURE	0 to 70°C
HUMIDITY	30 to 90% RH (Noncondensing)
WARM UP TIME	>10 Minute
EFFECT OF AMBIENT TEMPERATURE	For Voltage Input: ± 0.005% of FS/ °C or less For analog output: ± 0.010% of FS/ °C or less

Alarm Specification

| ALARM TYPES	Flow high limit, Flow low limit
BATCHING ALARM	Pre warn and set point
SETTING RANGES FOR PROCESS VALUE ALARMS	**Flow (PV) Alarms:** Min = Zero of individual I/P type Max = Span of individual I/P type

Display Specification

PV DISPLAY/ INTEGRATED TOTAL	6 digit red 7 segment display for flow rate/Integrated total
PARAMETER DISPLAY	Same 6 digit red 7 segment display flow rate/Integrated total
STATUS DISPLAY	Red LEDs (for alarm & Batch)

Other Specification

SQUARE ROOT EXTRACTION	Applicable
DIGITAL FILTER	Applicable
TIME BASE UNIT	Second, minute, hour, day
CONVERSION FACTOR	0.00 to 99.99
FIVE POINT LINEARIZATION	Applicable
LOW FLOW CUT OFF	Applicable

## MOUNTING DETAILS
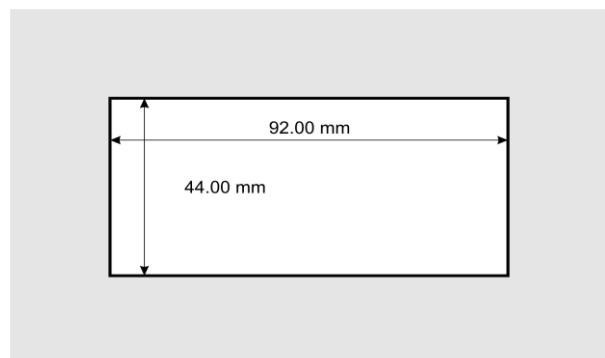
Panel Cutout Dimension

Bezel Size (in mm): 48(H) x 96(W) x 110(D)

FRONT PANEL DESCRIPTION

Name of Part	Function
SET OR SHIFT	1. It will allow user to enter in EDIT mode, when instrument is in RUN mode. 2. It will scroll menu and submenu When it is enabled. 3. It will save edited data.
START OR SHIFT	1. It will enter into the submenu, when main menu is enabled and shows submenu's value. 2. It will select the digit to modify, when value is edited. 3. It will start batch, if pressed, when IT & BT are being displayed
STOP OR INCREMENT	1. It will increment value of digit selected or constant selected. 2. It will stop batch, if pressed, when BT/IT are being displayed.

ESCAPE	It will escape to previous status, with reference to its current status.
	 Sequence of status:
	 IT MENU SUB-MENU
	     Parameter's Value
	     Escape sequence
	 When Esc key is pressed in Menu, the instrument will come in RUN

Mode. If user wants to go in EDIT mode, he will have to enter the correct password again.
It is Also use for show Either Flow Value or Integrated Total.

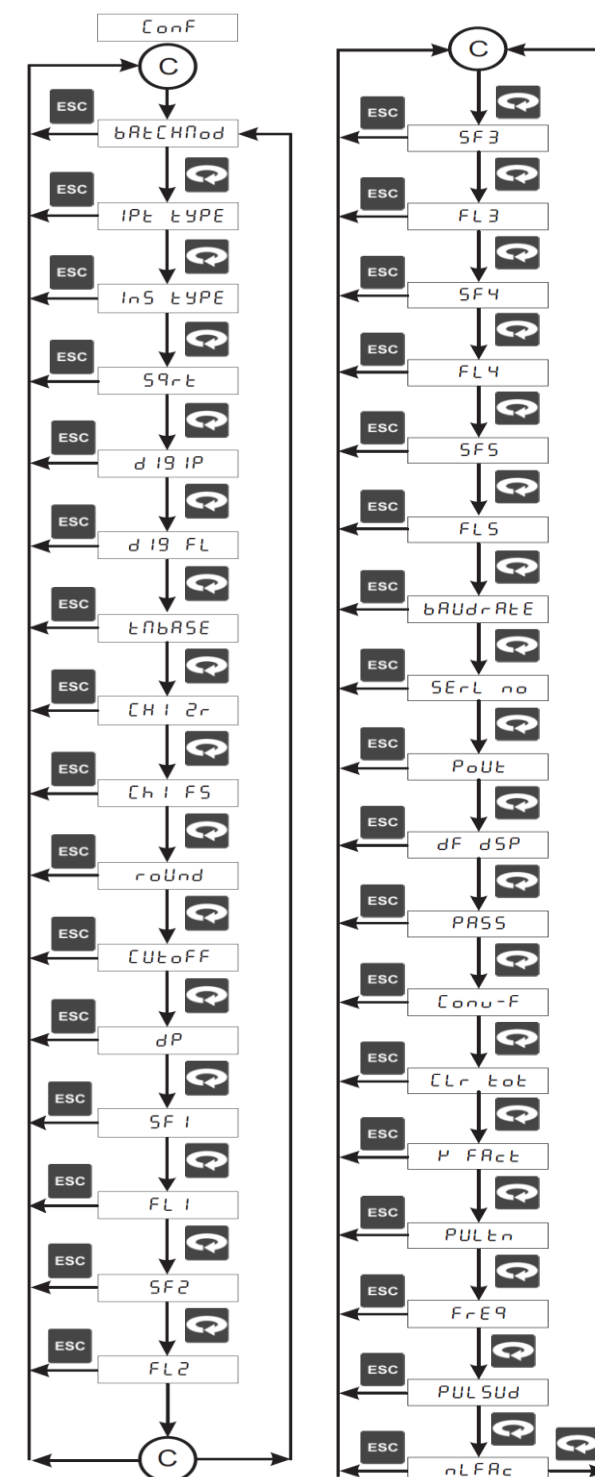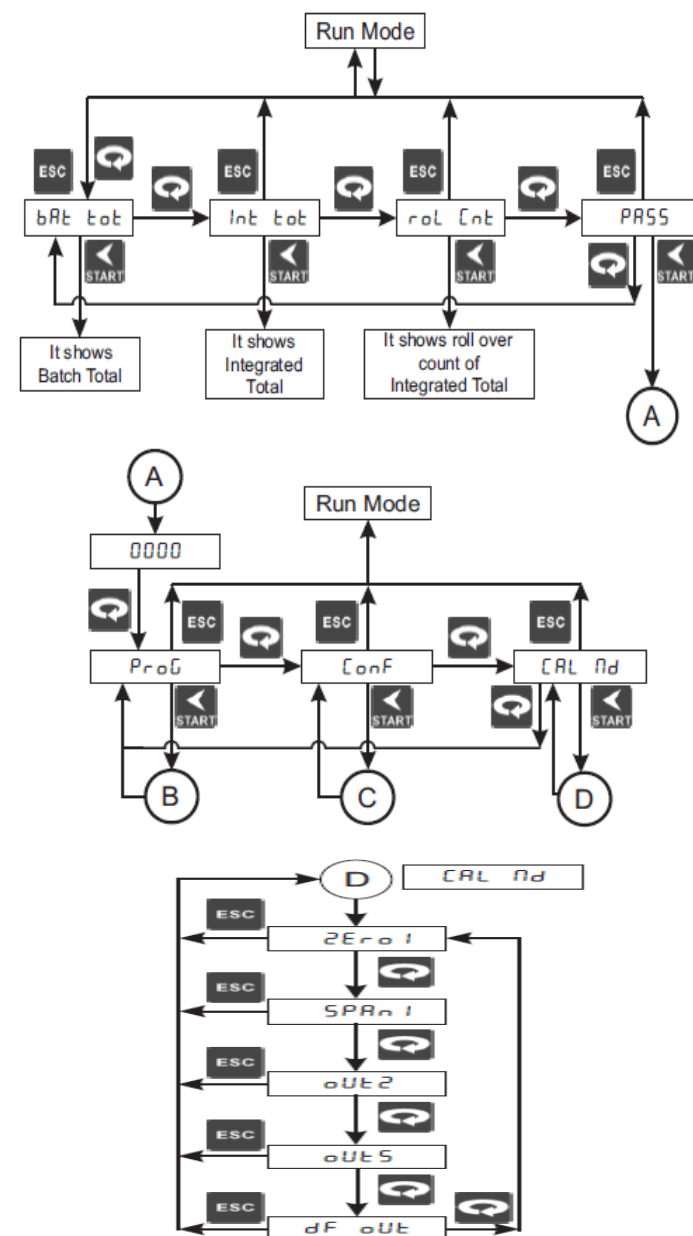|	
RL1, RL2	When Respective Relay LED Lits (In Red) OR When Channel is OPEN(Channel no. is corresponding to Relay no.)
Rx/Tx	When Communication on, two LEDs (In Red) blink.

BACK PLATE CONNECTION DETAIL

TERMINAL DETAIL
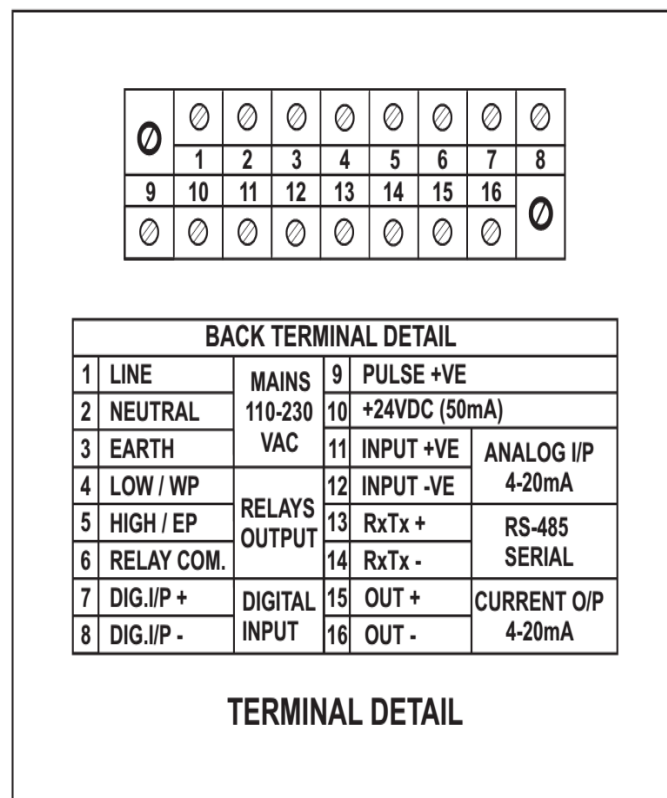
- **Batch total:**
  This is an eight digit totalized value, displayed as Batch total. As per the selected time base, Zero and Full-scale settings, this total is updated continuously, proportional to input. When New Batch Starts or Integration total is reset this value also gets initialized to 0.

- **Integration total:**
  This is an eight digit totalized value, displayed as integrated total. As per the selected time base, Zero and Full-scale settings, this total is updated continuously, proportional to input.

- **Low alarm and high alarm:**
  Value of Low alarm should be lower than that of high alarm. If user tries to set value of Low alarm **greater** than high alarm Value, error message will be displayed. Similarly, if user set value of High alarm **lower** than low alarm Value, error message will be displayed. Alarms value cannot be set greater than Full-scale Value (FS).

- **Set point and pre-warn:**
  Error message will be displayed if, set point value is lower than pre-warn and vice versa.

- **Alarm ON-OFF :**
  User can set alarm/relay availability. If particular relay is set as 'yes', that particular alarm indication will be present over the display card and relay action will come into effect.

PARAMETER FLOW DIAGRAM