

# Flow Indicator Totalizer

FIT 9223-8

## INTRODUCTION

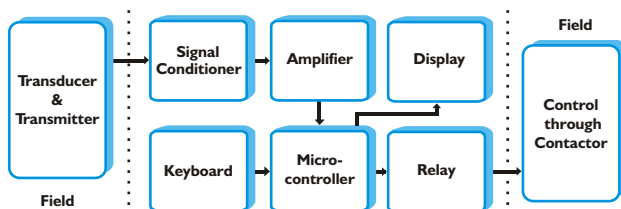


Flow Indicators / Controllers play an important part in any process industry. Quick and accurate measurement / control of flow improves the final

product quality, reliability and reduce rejection. Flow indication and totalisation is therefore one of the prime considerations in any process industry. The FIT 92 series is microcontroller based programmable flow indicator/totalizer designed for fast and accurate measurement/control. The instrument is designed using highly reliable electronic components. The process parameter is displayed in digits, which gives better resolution compared to analog indicator. The FIT 92 series accepts 4 - 20 mA as input. The instrument is immune to mechanical vibrations. Even the mounting position will not affect the measurement accuracy.

The LED display allows better messaging and can also display unit of measurement. Use of highly reliable electronic components with lowest temperature coefficient ensure long and trouble free service. The instrument is tested for its performance under various climatic conditions.

## PRINCIPLE OF OPERATION



The FIT 92 series is based on the principle of a high input impedance amplifier feeding a microcontroller followed by a relay and an inbuilt ADC. The signal from the transducer is fed to a signal conditioning amplifier, output of which is given to the 13 bit analog to digital convertor which is inbuilt the microcontroller. This microcontroller then switches the relay ON or OFF depending upon the process value with respect to the setpoint. Linearisation of the transducer signal is done by software. The microcontroller also drives the LED display, indicating the actual flow.

## APPLICATION

The FIT 92 series flow controllers can be used in monitoring and controlling continuous as well as batch flow processes in almost any industry.

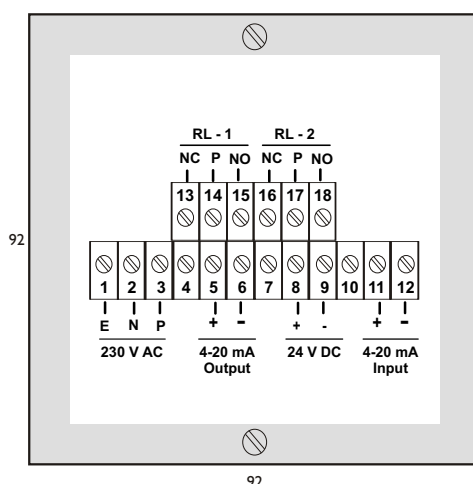
## FEATURES

- ✓ Linear or Square root extractor type input
- ✓ 8 digit totaliser
- ✓ Setpoint on flow or totaliser
- ✓ Proven trouble-free field performance
- ✓ Highly compact
- ✓ Dust and vermin proof enclosure with epoxy powder coating
- ✓ Fast response time
- ✓ Highly accurate
- ✓ Maximum MTBF and minimum MTTR
- ✓ Feather touch push button
- ✓ Wide supply variation and environmental band
- ✓ User friendly programming

## SPECIFICATIONS

|                           |                                                                           |                       |                                                                                                     |
|---------------------------|---------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------|
| Model                     | : FIT 9223-8                                                              | Setpoints             | : Two (Configurable on flow or totaliser)                                                           |
| Range                     | : Programmable from 0 to 99999                                            | Control action        | : ON / OFF                                                                                          |
| Decimal Position          | : Selectable                                                              | Set point Adjust      | : Using 4 keys membrane keypad                                                                      |
| Input                     | : 4 - 20 mA / 0-5 V DC                                                    | On / Off differential | : From 0.1 to 9.9                                                                                   |
| Input type                | : Linear / Square root selectable                                         | Relay Output          | : One set of potential free Relay changeover contact rated 5 Amp resistive at 230V AC per setpoint. |
| Indication                | : 5 digit 12.5 mm RED LED for flow<br>8 digit 10 mm RED LED for totalizer | Relay logic           | : User selectable High or Low Logic                                                                 |
| Indication accuracy       | : +/- 0.1 % of fullscale +/- 1 digit                                      | Relay ON indication   | : 3 mm Red LED                                                                                      |
| Time base                 | : Selectable bet'n secs, mins and hour                                    | Front fascia          | : ABS plastic                                                                                       |
| Power supply              | : 230 V AC, +/- 10 % , 50 Hz                                              | Mounting              | : Flush panel                                                                                       |
| Relative Humidity         | : Less than 90 % Non Condensing                                           | Enclosure             | : Mild steel CRCA sheet with powder coating                                                         |
| Ambient Temperature       | : 0 to 55 °C                                                              | Termination           | : Screwed type suitable for 2.5mm <sup>2</sup> wire                                                 |
| Accuracy deviation due to |                                                                           | Weight                | : 700 grams approximately                                                                           |
| a) Temperature change     | : +/- 0.002 % / °C, ref at 25 °C                                          | Optional :            |                                                                                                     |
| b) Supply Variation       | : +/- 0.001 % / V                                                         | A)Retransmission O/p  | : Isolated 4- 20 mA for retransmission                                                              |
| Recalibration (if reqd)   | : By software using keypads                                               | Resolution            | : 10 bit (0.016 mA step change)                                                                     |
| Programming               | : Using 4 keys membrane keypad.<br>Default password is 134                | Load resistance       | : Maximum 500 ohms                                                                                  |
| Power consumption         | : 6 VA                                                                    | B)Serial Interface    | : Isolated RS 485 (2wire)                                                                           |
|                           |                                                                           | Protocol              | : Modbus RTU                                                                                        |

## INSTALLATION



## ORDERING INFORMATION

### FIT 9223-8

|                                                               |                                                     |                                                                                 |                                                                                                        |                                                                                                                                                                   |
|---------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>X1</b>                                                     | <b>X2</b>                                           | <b>X3</b>                                                                       | <b>X4</b>                                                                                              |                                                                                                                                                                   |
| <b>Input</b><br>1 - 4 to 20 mA<br>2 - 0 to 5V DC<br>3 - Other | <b>Relay Output</b><br>1 - 1 C/O 5 Amp<br>2 - Other | <b>Power Supply</b><br>1 - 230 V AC<br>2 - 110 V AC<br>3 - 24 V DC<br>4 - Other | <b>Optional O/p</b><br>1 - NIL<br>2 - RS 232<br>3 - RS 485<br>4 - 4 - 20mA Retransmission<br>5 - Other | <b>Ordering eg. FIT 9223-8 - 1114</b><br>Input - 4- 20 mA (1)<br>Relay output - 1 C/O 5 Amp (1)<br>Power Supply - 230 V AC (1)<br>Optional O/p - 4 - 20mA O/p (4) |

### ALSO SELECT ESD ..

| BACK END                                                                                                                                    | SAME RANGE                                                                                                                                                                                                                                                                         | FRONT END                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>✓ Pt - 100</li> <li>✓ Thermocouples</li> <li>✓ Thermowells</li> <li>✓ Compensating Cables</li> </ul> | <ul style="list-style-type: none"> <li>✓ Dual Channel Indicators</li> <li>✓ Supersize Indicators</li> <li>✓ Loop Powered Indicators</li> <li>✓ Portable Indicators</li> <li>✓ Field Mounting Indicators</li> <li>✓ Flameproof Indicators</li> <li>✓ Auto Manual Station</li> </ul> | <ul style="list-style-type: none"> <li>✓ ON OFF Controllers</li> <li>✓ PI Controllers</li> <li>✓ Process Scanners</li> <li>✓ Automation Panels</li> </ul> |

"Price is what you pay. Value is what you get...."

Warren Buffett

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