

# FIELD MOUNTED RATE TOTALIZER

## Model T375



## Versions Available

### DC Powered

The DC powered version will operate from an external power source between 9 and 28 volts and draws no more than 4mA. This enables the IT375 to be powered from AC main adapters and eliminates the need to run mains voltages in the field. Lithium batteries provide backup if the DC power is interrupted.

### Solid State Relay Outputs

Both the 4-20mA output version and the DC powered version are provided with two solid state relay outputs. The solid state relays provide high and low flow rate alarms or, alternatively, a pulse output and a low flow rate alarm.

The outputs can sink up to 200mA and can be used to power external relays, audible alarms or counters. The outputs are internally protected against voltage spikes caused by relays and coils.

Both outputs are separately isolated via opto-isolators. The switching points can be programmed during the set-up mode. If programmed for a pulse output, the pulse can be selected as either unscaled (raw pulse input) or scaled. The maximum pulse frequency is 500 mSec with a pulse width, which is automatically set as:

1mSec if output	>	50Hz
10mSec if output	=	5...50Hz
100mSec if output	<	5Hz

## Features:

- CENELEC, CSA<sub>USA/C</sub> Approved
- Displays Rate, Total and Accumulative Total
- Battery, Loop or DC Powered
- Intrinsically Safe
- Watertight (NEMA 4X)
- Wall, pipe, panel or flowmeter Mounting
- Fully Programmable
- 4-20mA Output
- High & Low Alarms
- CE Compliant

## Overview

The Model IT375 Field Mounted Rate Totalizer requires no external power and is designed to operate with turbine, positive displacement and paddlewheel flowmeters in applications such as irrigation systems and pipelines, and as a replacement for mechanical registers.

### Watertight field mounting enclosure

The IT375 Rate Totalizer is housed in a rugged yet attractive NEMA 4X rated polycarbonate enclosure, which is completely watertight.

This enables the instrument to be mounted directly on the flowmeter; panel mounted or wall mounted using a special universal bracket. A 2" pipe mounting bracket is also available.

### Fully User Programmable

K-Factor, decimal point positions, alarm & 4-20mA set-points, filter constants and time base are fully user programmable.

Rate and Totals can also be displayed in different engineering units such as gallons per minute and barrels.



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## SPECIFICATIONS:

### General

**Display-Total:** 7 digit 10mm (0.4") high LCD (continuously powered)NOTE: The Resettable Total is resettable from the front panel and the Accumulative Total is displayed when the ACCUM TOT key is pressed

**Display-Rate:** 5 digit 8.5mm (0.33") high LCD (continuously powered)

**K-Factor Range:** The pulses per unit of measure (e.g. Pulses/gallon) is programmable in the range 0.000001 to 999,999.

**Decimal Points:** Fully programmable for Rate and Total

**Time Base:** Rates can be displayed in units per second, minute, hour or day.

**Frequency Range:** 0.01Hz to 10kHz

**Signal Type:** Switch settable for sine wave (15mV P-P minimum), open collector, reed switch or pulse.

**Interference:** CE Compliance

### Physical

Operating Temp: -20 to 60°C

### Enclosure-

**Dimensions:** 98mm (3.9") high x 152mm (6.0") wide x 43mm (1.7") deep

**Protection:** NEMA 4X Watertight

**Cable Entry:** By cable glands

**Materials:** Polycarbonate and ABS

### Mounting Options

Wall, Pipe, Panel, Turbine Meter:

#### MODEL NUMBER DESIGNATION

The Model Number of the **IT375** describes the power & output options installed and the mounting options.

#### Model **IT375i . 4 4 L**

**Intrinsically Safe**

**Linearized**

#### Mounting Options:

0 = No holes drilled for cable entry

1 = Panel Mount

2 = Wall mount (standard)

4 = Turbine Adaptor

6 = 2" Pipe mount

#### Versions:

0 = Battery Powered Version

3 = DC powered with battery backup and alarm outputs

4 = Loop powered with 4-20mA output, alarm outputs and back up batteries

### Battery Powered Version

**Battery Type** 2 x Lithium battery packs

**Battery Life** 5 years

### Loop Powered 4-20mA Output Version

**Scale** The 4 and 20mA set-points are programmable

**Resolution & Linearity** 0.05% of span

**Accuracy** 0.05% of span at 25°C

**Update Time** 0.5s.

**Connection** 2-wire

**Voltage across Output** 28VDC maximum

**Voltage Drop** 9V maximum

**Memory Backup** Lithium Battery

### DC Powered/Alarm or Pulse Output Version

**Outputs:** 2 x solid state relay outputs suitable for driving solenoids or external relays. The outputs provide fully programmable high & low flow alarms or a pulse output & low alarm

**Pulse Output:** Scaled or unscaled pulse output, 500Hz maximum. Pulse width depends on output frequency and varies from 100mS to 1mS.

**Switching Power** 200mA, 30VDC maximum

**Saturation Voltage** 0.8V DC across outputs when in the "on" state

**Isolation** Both outputs are separately isolated

**DC Power Input** 9-28V @ 4mA maximum

**Memory Backup** Lithium Battery

### Hazardous Area Approval

#### Type of Approval

CENELEC	EEx ia IIB T4
CSA (us/c)	Class 1, Groups C & D
SAA	Ex ia IIB T6
Maximum Ambient	60°C

#### Max. Input Parameters

(For certified IS coil or other certified IS sensors which produce a pulse output)  
 $U_o = 10.0V$   $I_o = 9.0mA$   $AC(ext) = 60mFL(ext) = 1.5HLi = 0mH$   $U_i = 24V$   $I_i = 20mA$   $P_i = 320mW$   $C_i = 0.002mF$

Note: Devices such as reed switches, which can be classed as "Simple Apparatus" as defined in the CENELEC Standard EN50020, can be connected to the Model IT375 without additional certification.

#### Max. Output Parameters

4-20mA or Relays	$U_i = 28V$
	$I_i = 93mA$
	$P_i = 653mW$

*IMPORTANT: Specifications are subject to change without notice*

