

# Field Mounting Rate Totalizer

**Model 202Ai**

## Features

- Powered by 4-20mA loop
- Displays Rate, Total and Accumulated Total
- Linear or square law inputs
- High and low flow rate alarm
- Pulse output
- Intrinsically safe
- Watertight to IP67 (Nema 4X)
- Wall, pipe and panel mounting
- Fully programmable
-  Compliant



## Overview

The 202Ai Loop Powered Rate Totalizer is designed to operate with any flowmeter which produces a 4-20mA output, including differential pressure devices, magnetic or vortex flowmeters.

The 202Ai is powered entirely from the 4-20mA current loop and has a maximum of 2.5 volts drop across the input.

The Rate Totalizer is fully programmable with linear or square law input relationships, programmable span, cutoffs and conversion factors.

A non-volatile memory stores all set up parameters and totals without the need for internal batteries or external power.

High and low alarms are standard via optically isolated solid state relay outputs. Alternatively, the high alarm output can be programmed to provide a scaled pulse output proportional to the total.

## Watertight enclosure

The 202Ai Rate Totalizer is housed in a rugged, yet attractive, IP67 (Nema 4X) polycarbonate enclosure which is completely watertight.

A wall mounting bracket is supplied as standard, while a 2" pipe mounting bracket is available as an option.

Alternatively, the Model 202Ai can be supplied as a panel mount instrument.

## Intrinsically safe

The Model 202Ai is certified as intrinsically safe to European CENELEC standards, and CSA<sub>US/C</sub> standards for both the USA and Canada.

## General

<b>Display</b>	LCD which is continuously powered.
<b>Resettable Total</b>	7 digits with 10mm (0.4") high digits. Resettable from front panel.
<b>Accumulated Total</b>	Displayed when the Accumulated Total button is pressed.
<b>Rate Span</b>	4 digits with 8.5mm (0.33") high digits. The units of measure per timebase (eg. gallons/sec) is programmable up to 999,999.
<b>Decimal Points</b>	Decimal point positions are fully programmable for both rate and total.
<b>Timebase</b>	Span can be programmed in units per second, minute, hour or day.
<b>Signal Type</b>	4-20mA.

## 4-20mA Input

<b>Resolution and Linearity</b>	0.05% of span.
<b>Accuracy</b>	0.05% of span @ 25°C. 0.1% (typ) of span, full temperature range.
<b>Update Time</b>	0.5 seconds.
<b>Connection</b>	Two wire.
<b>Voltage Drop</b>	2.5 volts maximum.

## Alarm/Pulse Outputs

<b>Type</b>	Two solid state relay outputs suitable for driving DC solenoids or external relays. The outputs provide high and low flow alarms; or pulse output and low flow alarm.
<b>Switching Power</b>	200mA. 30VDC maximum.
<b>Saturation Voltage</b>	0.8VDC typical across the output in the "on" state.
<b>Isolation</b>	Both outputs are separately opto-isolated.
<b>Pulse Duration (for pulse output)</b>	a. 1ms if output frequency > 50Hz b. 10ms if output frequency is 5...50Hz c. 100ms if output frequency is < 5Hz.

## Physical

<b>Temperature</b>	Operating temperature: -20°C to 60°C.
<b>Dimensions</b>	98mm (3.9") high x 152mm (6.0") wide x 43mm (1.7") deep (cable glands not included).
<b>Protection</b>	Sealed to Nema 4X or IP67 standards.
<b>Cable Entry</b>	By cable glands.
<b>Wall Mounting</b>	Universal mounting bracket supplied as standard.
<b>Pipe Mounting</b>	A galvanized metal bracket is available which enables the Model 202Ai to be attached to a 2" vertical or horizontal pipe.
<b>Panel Mounting</b>	Supplied with mounting brackets. Terminals accessible from rear.  Note that the panel mount version is not watertight.

## Terminal Description

Terminals Common to all Models	
No.	
3	4-20mA (-) Input
4	4-20mA (+) Input
5	Low Alarm (-)
6	Low Alarm (+)
7	High Alarm (-) or Pulse (-)
8	High Alarm (+) or Pulse (+)

## Intrinsically Safe Parameters

<b>Type of Approval</b>	
CENELEC	Ex ia IIB T4.
CSA <sub>US/C</sub>	Class 1, Groups C and D.
<b>4-20mA Input</b>	U <sub>i</sub> = 28V maximum L <sub>i</sub> = 93mA maximum P <sub>i</sub> = 653mV maximum
<b>Relay/Pulse Outputs</b>	U <sub>i</sub> = 28V L <sub>i</sub> = 93mA P <sub>i</sub> = 653mV

Important: Specifications are subject to change without notice.

## Ordering Information

When specifying, please indicate model(s) required using the following method.

