



Model 202A

LOOP POWERED

Rate Totaliser

FEATURES

- Linear or Square Law Inputs
- Pulse Output
- High and Low Rate Alarm
- Fully Programmable
- Displays Rate, Total and Accumulated Total
- Powered by 4-20mA Loop
- Intrinsically Safe
- Wall, Pipe and Panel Mounting
- Polycarbonate, Aluminium or Stainless Steel Housings
- Watertight to IP67 (Nema 4X)
- ATEX, IECEx, CSA Approved
- CE Compliant



The 202A Loop Powered Rate Totaliser is designed to operate with any flowmeter which produces a 4-20mA output, including differential pressure devices, Magnetic or Vortex Flowmeters.



Field Mounting Rate Totaliser

PROVEN IN THOUSANDS OF FIELD INSTALLATIONS
THROUGHOUT THE WORLD.

The 202A is a high accuracy, intrinsically safe Rate Totaliser designed to operate with any flowmeter which produces 4-20mA. Having an IP67 weatherproof case, tactile keyboard and various mounting options, the 202A is perfect for the most arduous of installations.

Loop Powered

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

Watertight Field Mounting Enclosure

The 202A Rate Totaliser is housed in a rugged yet attractive IP67 (Nema 4X) rated polycarbonate, aluminium or stainless steel enclosure which are completely watertight.

All versions are suitable for wall, pipe mounting or direct flowmeter mounting (Turbine). The polycarbonate version can also be supplied as a panel mount arrangement. A (51mm) 2" pipe mounting bracket is also available.

Fully User Programmable

K-factor, decimal point positions, filter constants and time base are fully user programmable.

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

Contrec's unique magnet access strip allows the 202A to be re-configured in hazardous areas without opening the enclosure. A great benefit in reducing production shutdown periods and improving maintenance efficiency times.

Frequency to Current Conversion

The 202A loop powered Rate Totaliser makes an excellent Frequency to Current Converter, particularly for low frequency inputs from positive displacement or turbine flowmeters.

Because the 202A calculates the flow rate by measuring the time interval between input pulses, it is able to provide a very stable and accurate 4-20mA output for low frequency inputs.

High and Low Alarms

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.

Intrinsic Safety

The 202A is certified as intrinsically safe to European ATEX/IECEx standards, and CSA US/C standards for both the USA and Canada, see specification for details.



Polycarbonate Enclosure



Aluminium/Stainless Steel Enclosure

Rate Totaliser – Model 202A

SPECIFICATIONS

Display

Type: LCD display

Total: 7 digit 10mm (0.4") high LCD (continuously powered)

Accumulated Total: Displayed when the Accumulated Total button is pressed

Rate: 4 digit 8.5mm (0.33") high LCD (continuously powered)

Span: The units of measure (eg. gallons/sec) is programmable up to 999,999

Decimal Points: Decimal point positions are fully programmable for both rate and total

Time Base: Span can be programmed in units per second, minute, hour or day

Frequency Range: 0.01Hz to 10kHz

Signal Type: 4-20mA

Interference: CE compliance

Physical

Operating Temperature: -20 to +60°C, -4 to +140°F

Enclosures

Dimensions: (Polycarbonate Enclosure - Standard Case) – 98mm (3.9") high x 151mm (5.9") wide x 43mm (1.7") deep

Dimensions: (Aluminium / Stainless Steel Enclosures) 106mm (4.2") high x 161mm (6.3") wide x 47mm (1.9") deep

Protection: IP67 (Nema 4X) watertight

Cable Entry: By cable glands

Materials: Polycarbonate and ABS, aluminium and stainless steel

Mounting Options

Wall: Universal wall mount bracket

Pipe: A galvanised metal bracket enables the 202A to be attached to a 51mm (2") vertical or horizontal pipe

Panel: Two mounting brackets are provided and terminals are accessible on the rear of the enclosure. *Note: The panel mount version is not watertight.*

4-20mA Power Input

Resolution & Linearity: 0.05% of span

Accuracy: 0.05% of span at 25°C. 0.1% (typ) of span, full temperature range

Update Time: 0.5 sec

Connection: 2-wire

Voltage Drop: 2.5 volts maximum

Alarm / Pulse Outputs

Types: 2 x 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.

Switching Power: 200mA, 30Vdc maximum.

Saturation Voltage: 0.8Vdc typical across the output in the "on" state

Isolation: Both outputs are separately opto-isolated

Pulse Duration (for pulse output):

- 1ms if output frequency > 50Hz,
- 10ms if output frequency is 5 to 50Hz,
- 100ms if output frequency is < 5Hz

Hazardous Area Approval

Type of Approval:

- ATEX Rating - II 2G Ex ia IIB T4 Gb
Cert No. BVS 15 ATEX E 106 X
- IECEx Rating - Ex ia IIB T4 Gb
Cert No. IECEx BVS 15.0099X
- CSA us/c Rating - Class 1, Group C & D
Cert No. 70061366

Intrinsically Safe Parameters

Maximum Ambient: 60°C (+140°F)

Maximum Input Parameters:

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

Maximum Output Parameters:

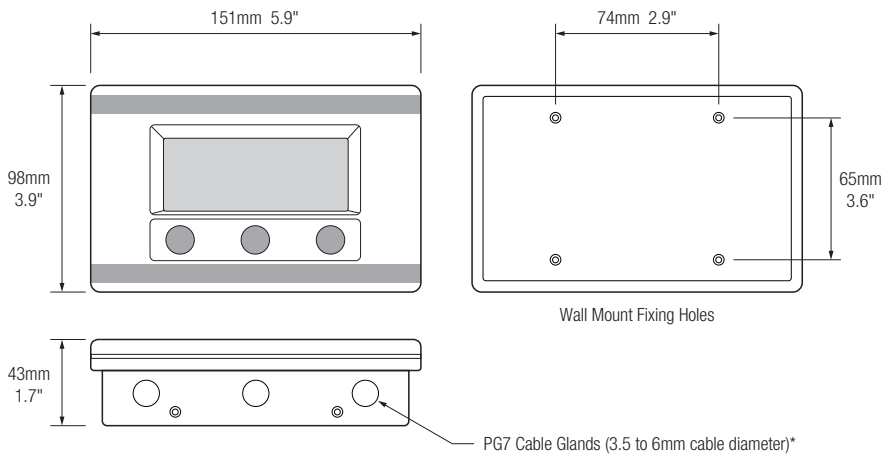
Relay/Pulse: $U_i = 28V$
 $I_i = 93mA$
 $P_i = 653mW$

Important: Specifications are subject to change without notice.



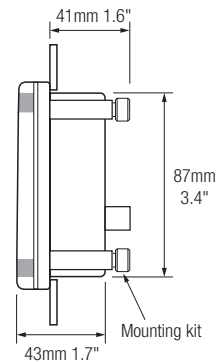
DIMENSIONS

Polycarbonate Enclosure (Standard Case)



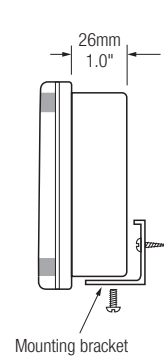
Panel Mount

OPTION 1

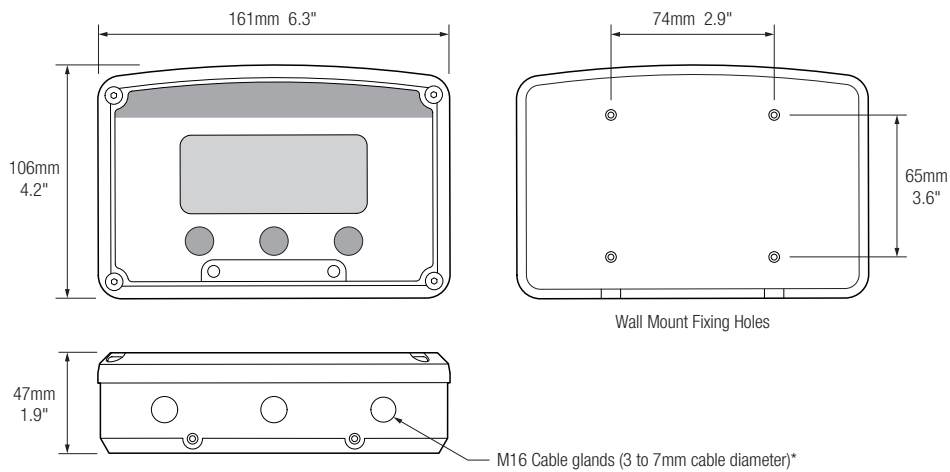


Wall Mount

OPTIONS 0 & 2

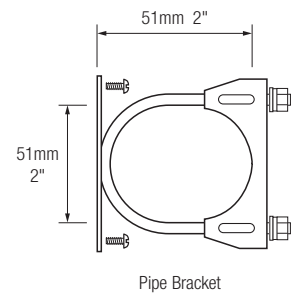


Aluminium / Stainless Enclosure



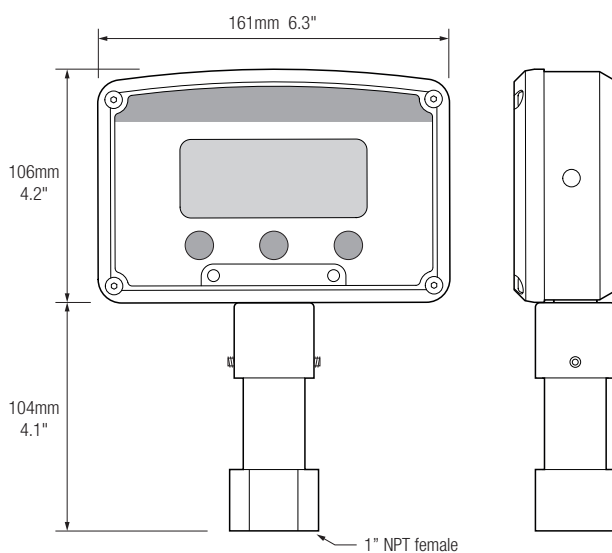
Pipe Mount Adapter

OPTION 6

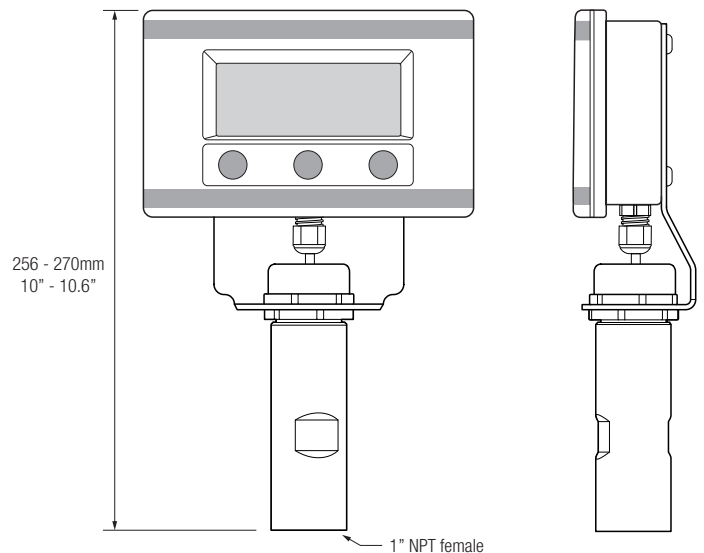


Turbine Mounting Options

Aluminium / Stainless Enclosure – OPTION 3



Polycarbonate Enclosure – OPTION 4



* NOTE: Number of cable entries may vary dependant on specific model

Rate Totaliser – Model 202A



TERMINAL DESCRIPTIONS

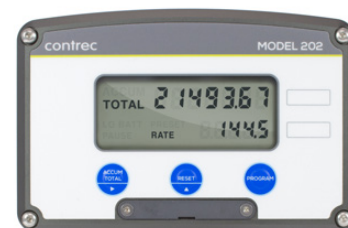
Inputs & Outputs	
Number	
3	4-20mA (-) Input
4	4-20mA (+) Input
5	Low Alarm (-)
6	Low Alarm (+)
7	High Alarm (-) or Pulse (-)
8	High Alarm (+) or Pulse (+)



Polycarbonate
Enclosure (standard)

PRODUCT CODES

Product Code, Mounting Types & Options			
202Ai	•		Rate Totaliser (intrinsically safe)
Enclosure Mounting	0		Wall mounting (no gland holes) *
	1		Panel mounting (cable glands not included)
	2		Wall mounting (standard glands) *
	3		Turbine mount stem for metal enclosure
	4		Turbine mounting for polycarbonate enclosure
	6		Galvanised pipe mounting
Output (standard)	0		Loop powered alarm/pulse outputs
Hazardous Approvals		C	CSA US & Canadian approval
		M	ATEX/IECEx approval
Standard Enclosure			Polycarbonate housing *
Anodised Aluminium Enclosure		.A	Aluminium housing **
Stainless Steel Enclosure		.S	Stainless steel housing **



Aluminium/Stainless
Steel Enclosure

Typical Part Number: 202Ai.20M.A

Notes: * Wall mounting bracket supplied

** Not available as panel mount

Instruments within the Contrec family:

100 Series – Accurate process instruments for field mounting applications

200 Series – Intrinsically safe, precise and reliable process instruments

400 Series – Rugged and dependable batch and flow control solutions

515 Series – Precise flow and batch control for more complex applications

TRAC 50 – Vehicle mount custody transfer approved registers

LoadPro® – Robust load controllers for petroleum and chemical applications



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