

Battery- or Loop-Powered Totalizers Series 4300

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Featuring 5 digits of rate and 8 digits of total, the **INVALCO 4300** is a battery- or loop-powered indicator capable of accepting magnetic pickup, DC pulse or switch closure inputs from pulse producing flowmeters. The unit can be ordered with an optional 4-20mA output (Models 4300-3I and 4300-3O). The 4300 uses the 4-20mA loop to provide power when this output is used.

Features

- Accepts inputs from: magnetic pickups, contact closures, DC pulses (optically isolated) from pulse producing flowmeters
- Displays rate and total simultaneously
- 5 digit rate display, 8 digit totalizer display
- 4-20mA analog output option (8 updates/sec)
- Powered from internal battery, external DC supply or 4-20 mA output loop
- 20 Pt. linearization
- Isolated scaled pulse output
- Nonvolatile flash memory of setup data
- Extended battery life
- RS 485 modbus option



General Specifications

Power

Battery powered (Model 4300-3A)

- Supplied with 2 C size Lithium batteries.

Loop Powered (Models 4300-3I and 4300-3O)

- Voltage: 8.5 to 30 VDC
- Supplied with 2 C size lithium batteries
- Protection: Reverse Polarity Protection on Current Loop
- Loop Burden: 8.5V maximum

Note: Slow input pulse rates, large delay setting and internal math operations may delay the update rate of information.

Battery Life Expectancy

Expected Years of Operation for 4300 of various powering options at equipment duty cycles

Model	Run Time			
	Idle	2hrs/day	8hrs/day	24hrs/day
4300-3A	10 yrs	10 yrs	10 yrs	8.4 yrs
4300-3I	Indefinite operation when loop powered			
4300-3O	Indefinite operation when loop powered			

Notes: Battery shelf life is rated at 10 years by manufacturer. Life expectancy based on rated battery capacity at 20°C. The above table is shown with pulse output inactive. Use of pulse output shortens battery life.

Example: A pulse output of 0.06 sec. duration, once per second, would derate the battery life by 20%.

Display

Rate Display (selectable decimal)

- 5 Digits (99999), 0.35" High, Display updates once per second with model 4300-3A, 8X per second with 4300-3I or 4300-3O

Rate Descriptors

- /SEC, /MIN, /HR for model
- 4300-3I/MIN, /HR, /DAY for models
- 4300-3A and 4300-3O

Min. Input Frequency*

- 0.01 Hz to 10 Hz (selectable delay of 0.1 to 99.9 seconds)
- Selectable Rate Display Damping

Totalizer Display

- (Selectable decimal)
- 8 Digits (99999999), 0.2" High

Totalizer Descriptors

- Model 4300-3I: GAL, LIT, FT3, M3
- Model 4300-3A and 4300-3O: GAL, BBL, MCF, M3

Warning Displays

- Low battery warning

Pulse Output

The pulse output advances with the least significant digit of the totalizer or decimal multiples thereof (see Pulse scale divider).

Type

- Isolated photomos relay

Max. voltage (off state)

- 30 VDC

Current (on state)

- 100mA

Pulse Duration

- Selectable 0.5, 0.25, 0.125, 0.0625 sec.

Pulse Scale divider (Pulscale)

User selectable, ÷1, ÷10, ÷100 or OFF*

Note: *Select OFF for max. battery life.

Accuracy

0.01% Reading, ±1 count

Temperature Drift: 50 ppm/°C Worst Case

Environmental

Operating Temperature

-4°F (-20°C) to + 158°F (70°C)

Extended Temp: -22°F (-30°C) to + 158°F (70°C)

Humidity

0 - 90% Noncondensing

Enclosure style

Explosion Proof

- Class I, Division 1, Groups B, C & D
- Class II, Division 2, Groups E, F & G

Approvals

CSA/NRTL Explosion Proof Listed LR91109

Inputs

Magnetic Pickup Input

- Frequency Range: 0 to 3500 Hz
- Trigger Sensitivity: 10 mV p-p
- Over Voltage Protected: ± 30 VDC

Opto-Isolated DC Pulse Input

- High (logic 1): 4-30 VDC
- Low (logic 0): Less Than 1 VDC
- Minimum Current: .5 mA
- Hysteresis: 0.4 VDC
- Frequency Range: 0 to 5 kHz
- Min. Pulse Width: 0.1 msec

Contact Closure Input (contact closure to common)

- Internal Pullup Resistor: 100 KΩ to +3.6 VDC
- High (logic 1): Open or 4-30 VDC
- Low (logic 0): Less Than .5 VDC
- Internal Switch Debounce Filter: 0 to 40 Hz

Reset Input (contact closure to common)

- Internal Pullup Resistor: 100 KΩ to +3.6 VDC
- High (logic 1): Open or 4-30 VDC
- Low (logic 0): Less Than .5 VDC
- Minimum On: 25 msec

K-Factor

- Range: 0.001 to 99999999
- Decimal Point Locations: XXXX.XXXX to XXXXXXXX
- 20 Point Linearization
- This feature allows the user to enter 20 different frequencies with 20 different corresponding K-Factors to linearize non-linear signals.

Analog Output (models 4300-3I And 4300-3O)

Type

4-20 mA follows rate display, Two wire hookup

Accuracy

0.025% Full Scale at 20° C

Temperature Drift

50 ppm/°C Typical Reverse Polarity Protected

Update Rate

8 times/second

Data Storage

Setup Information

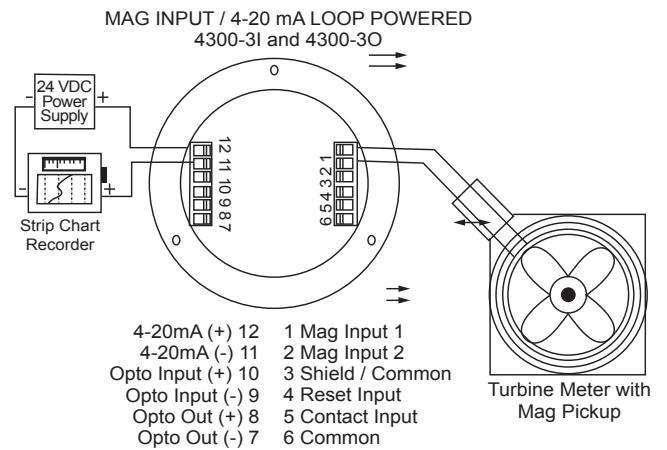
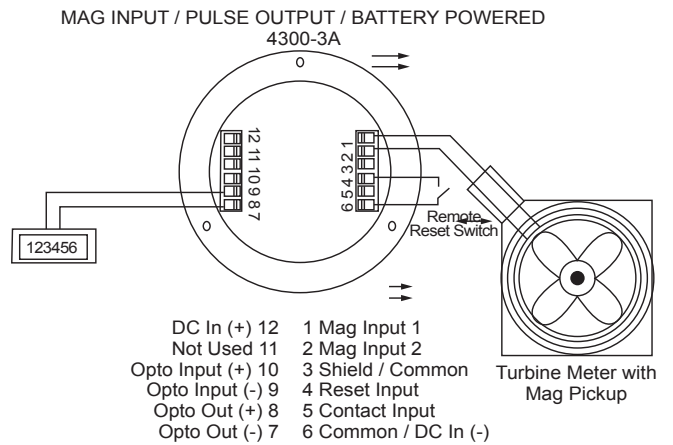
- Stored in flash memory

Totalizer

- Stored in battery backed RAM but can be saved to flash memory by operator for recall after battery change out.

Decoding Part Number	
Model	Description
4300-3A	Battery Powered Rate per Day, Hour or Minute
4300-3I	Loop Powered with 4-20 mA Output Rate per Hour, Minute or Second
4300-3O	Loop Powered with 4-20 mA Output Rate per Day, Hour or Minute
4300-3M	RS-485 Modbus Option

Typical Wiring

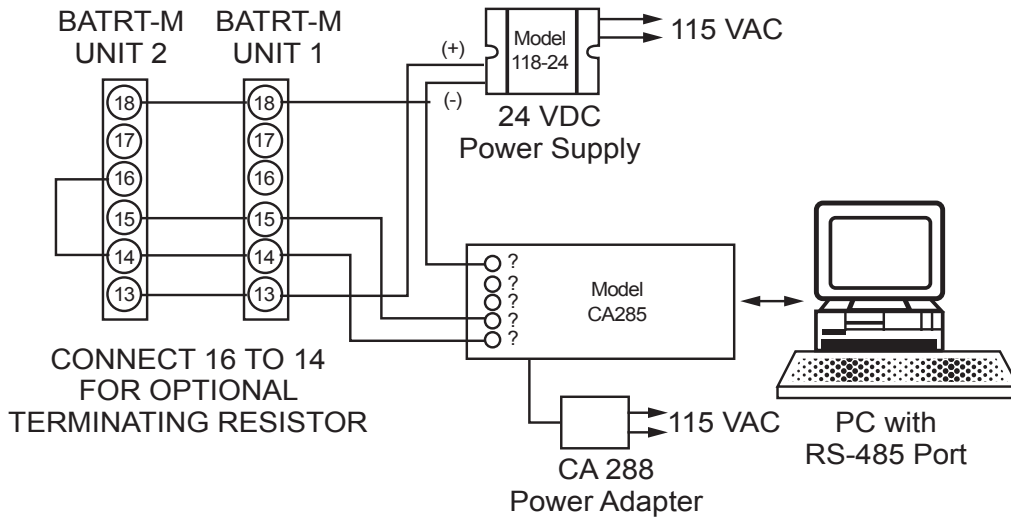


Notes:

1. Sustained contact closure will shorten battery life.
2. The 4300 uses the 4-20 mA loop power as its primary power source when this option is used. The battery is still required for standby battery operation.

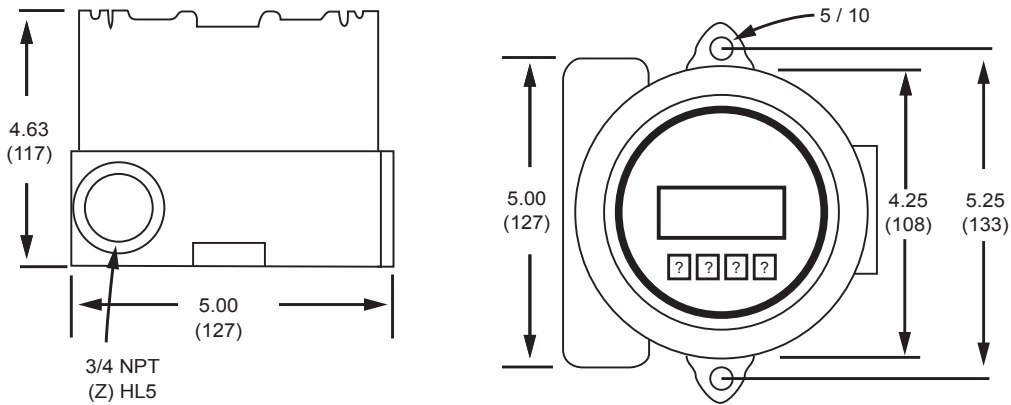
General Specifications RS-485 Modbus and Data Logger Option

The optional RS-485 card utilizes Modbus RTU protocol to access a variety of process parameters. The Data Logger stores the totalizer to flash memory once every 24 hours at the time you set. Requires external DC power.



Dimensions

To access terminals, unscrew cover and loosen 2 panel screws. Terminals are on bottom side of PC Board.



The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.