RTP

Two Separate Ratemeters, Totalizers With Two Line LCD Display

Features

- Two pulse and three control inputs

- Displays: A Rate, A Total, B Rate, B Total, A+B Rate, A+B Total, A-B Rate, A-B Total, Grand Total

- Separate Scaling Factors For A & B Inputs

- Two relay outputs with LED Indication

- RS232/ RS485 port for serial communication and printing

- Security lockout

- 4-20 mA output (optional)

- NVRAM to retain data on power failure

- NEMA 4 / IP65 Front Panel

DESCRIPTION:

The RTP is a presettable Ratemeter and Totalizer from two pulse inputs. It can show rate and total at the same time on the 2 X 16 backlit LCD display. Both inputs can have up to 16 point linearizing k factors. The unit can be connected in a network for Data Acquisition.

SPECIFICATIONS:

INPUT POWER:	AC: 100 to 260 VAC; 6.5 VA
	DC: +24 VDC ; 250 mA max.
THRESHOLD:	High: 4-24 VDC; Low: < 1Vdc or open
INPUT A:	Count Input, 5 kHz max.
INPUT B:	Count Input, 5 kHz max.
INPUT C:	Control Input
INPUT D:	Control Input
INPUT E:	Control Input (Not Used with RS485
NOTE:	AC powered units have isolated inputs. DC units share -DC with input common.
OUTPUT POWER:	+20VDC @50 mA (unreg), +/- 15%
DISPLAY:	2 lines of 16 characters, backlit LCD (character size: 2.95mm x 5.55mm)
DISPLAY RESOLUTION:	6 Digit Total, 6 Digit Rate
BEZEL:	NEMA 4/IP65 rated membrane keypad
INDICATORS:	Two LED's to indicate control output status. (Red = Output A, Green = Output B)
MEMORY:	NVRAM retains data on power failure
TEMPERATURE:	Operating : 0 to 50 degrees C
	Storage : -40 to 90 degrees C
HUMIDITY:	10% to 90% (Non condensing)
SIZE:	Bezel: 103mm X 55 mm; Depth:97 mm
PANEL CUTOUT:	92 mm X 45 mm (1/8 DIN size cutout)
IMMUNITY TO ESD:	Level 3 per IEC1000-4-2
IMMUNITY TO TRANSIENTS:	Level 3 per IEC1000-4-4
RADIATED SUSCEPTIBILITY:	Level 3 per IEC1000-4-3
EMISSIONS:	EN55011 CISPR A

PULSE INPUTS

The RTP can accept two pulse inputs (A&B). It computes rate and total of A, B, A+B and A-B. For both inputs the user can define up to 16 points of "k" factors. This allows linearization of the displayed rate, which is useful in improving the accuracy of the flowmeter.

The rate is computed within 300 ms per input. To stabilize the rate display, the user can select normalizing factor, which allows weighted average to be shown. Moreover, for rate displays, a time delay of up to 25 seconds can also be selected.

CONTROL INPUTS

The RTP has three Control Inputs, i.e. Input C, Input D and Input E (Only C & D with RS485 option). Each input can be configured to start/stop each counter or reset each counter and Control Output. These inputs can also perform different control actions like printing on serial port, lock unit and freeze display.

RESET OPTIONS

The entire unit, i.e. all counters and control outputs, or Counter A, Counter B, Counter A+B, Counter A-B, Control O/P A and Control O/P B can be individually programmed to be reset on pressing the front panel RST key and also by a positive edge signal to any of the Control I/Ps C, D and E.

SERIAL COMMUNICATION

The serial strobed port can be used for serial printing of Total or Rate data with descriptors. The unit can also communicate with a master device through a Modbus-RTU protocol. The data given for each parameter is in IEEE float format comprising of 2 words. The unit can be connected in a network. Order Option 1 is RS-232 level format; Order Option 2 is RS-422/485 level format.

CONTROL OUTPUTS

The RTP has the following Control Outputs:
    RELAY / O.C.:   2 N.O. relays of 5 A and 250 V OR
                2 Open Collector Outputs;
                100 mA maximum.

ANALOG OUTPUT
Type: 4-20 mA output.
Accuracy: ± 50µA worst case.
This Analog O/P can be programmed to track any parameter. Reverse tracking O/P is also available.

PRESETS The unit supports five counters, i.e. Counter A, Counter B, Counter A+B, Counter A-B and Grand Total. The counters can either be reset to zero or disabled. Relays can be activated by any of the Total or Rate values. If a Total preset activates the relay, the user can select an output duration of 0.1 to 99.9 seconds with instant auto reset to "0". A 00.0 duration keeps the relay activated until externally reset. If both presets are assigned to same counter, with Relay A duration set to 00.0 and Preset A lower than Preset B,

Relay A pulls in at Preset A and drops out when Preset B (having a duration other than 00.0) pulls in. Counter recycles immediately, and Relay B stays activated for the selected duration.
If activated by rate, the relay pulls in at High Preset or above and remains on until rate falls below Low Preset.

LOCKOUT The unit program and presets can be protected with a lock code to prevent unauthorized front panel changes. This code can be assigned with a maximum of 4 digits and is user selectable. It can be entered through front panel LOCK key or by configuring any of the Control I/Ps to "Lock unit". Alternate entry of the lock code or pulses to that I/P will lock or unlock the unit.
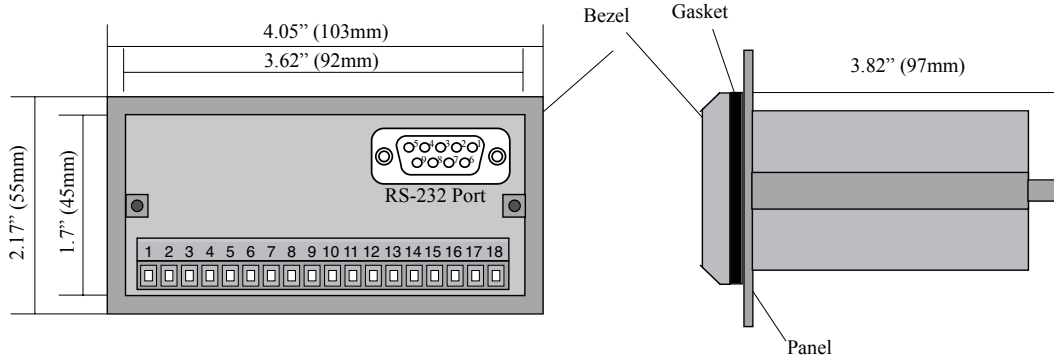
Terminal Designations:

AC Power	DC Power
1 • AC1 100 TO 260 VAC	1 • + DC INPUT (24VDC ± 10%)
2 • AC2 100 TO 260 VAC	2 • – DC INPUT (24VDC ± 10%)
3 • RELAY A (N.O.)	3 • RELAY A (N.O.)
4 • COMMON	4 • COMMON
5 • RELAY A (N.C.)	5 • RELAY A (N.C.)
6 • RELAY B (N.O.)	6 • RELAY B (N.O.)
7 • COMMON	7 • COMMON
8 • RELAY B (N.C.)	8 • RELAY B (N.C.)
9 • (+) 20VDC OUT (50mA)	9 • (+) 20VDC OUT (50mA)
10 • (–) 20VDC OUT (50mA)	10 • (–) 20VDC OUT (50mA)
11 • ANALOG O/P (+)	11 • ANALOG O/P (+)
12 • ANALOG O/P (–)	12 • ANALOG O/P (–)
13 • CTRL I/P E	13 • CTRL I/P E
14 • CTRL I/P D	14 • CTRL I/P D
15 • CTRL I/P C	15 • CTRL I/P C
16 • PULSE I/P B	16 • PULSE I/P B
17 • PULSE I/P A	17 • PULSE I/P A
18 • INPUT GND	18 • INPUT GND

Communication Port Terminal Designations:
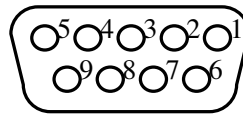
RS-232 Port: (DB9 Female)	RS-485 Port: (DB9 Female)
6 - NC	1 - TX+
7 - CMOS TXD	2 - TXD
8 - TX	3 - RXD
9 - RX	4 - RX+
	5 - GND

Ordering Information

Example:	RTP	A	3	1

Series:
  RTP= Pulse Input Ratemeter/Totalizer
Operating Voltage:
  A= 110 VAC ± 15%
  B= 220 VAC ± 15%
  *C= 24 VDC
Input:
  3= Standard, 4-30 VDC simultaneous inputs
Options:
  1= RS-232, 3 Control Inputs (not available with RS-485)
  *2= RS-485, 2 Control Inputs (not available with RS-232)
  A= 4-20 mA Out (Can be ordered with options 1 or 2)
* Special Order
Accessories
NEMA4 wall mount enclosure available see LCN4X & MS821
XHV 7/4 Explosion Proof Housing available, see XHV7/4
Serial printer available, see P1000, P295
Ethernet Port Server available, see IEPS
RS-422/485 to RS-232 Communication Adaptor available, see CA285

KEYPAD FUNCTIONS

KEY	Run Mode	Program Mode
PROG	Enter The Programming Mode	Toggles between menus
← VIEW	VIEW key scrolls through the selected viewing parameters	Left key shifts digits in number entry/characters in message mode
↑ PRE A	PRE A key allows Preset A to be changed if unit is not locked	Up key increments digits/ characters
CLR PRE B	PRE B key allows Preset B to be changed if unit is not locked	CLR key clears the numeric field
ENT LOCK	Lock Key allows the entry of a lock code to lock/unlock the unit	ENT key saves changes and steps to next menu
RST	RST Key resets counters (with/without confirmation	Unit comes out of programming at any level

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