Two Separate Ratemeters, Totalizers
With Two Line LCD Display

Features

- Two pulse and three control inputs
- 16 Point Linearization
- 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)

DESCRIPTION:
The 918-RTP is a presettable Ratemeter and Totalizer from two pulse inputs. It can show 6 digits of rate and 6 digits of total at the same time on the 2 X 16 backlit LCD display. 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: <1 Vdc 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, backlight 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

- NVRAM to retain data on power failure
- NEMA 4/IP65 Front Panel

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 918-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 918-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 918-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.

DIMENSIONS:

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KEYPAD FUNCTIONS

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<td></td>
<td>to be changed if unit is not locked</td>
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</tr>
<tr>
<td></td>
<td>Lock Key allows the entry</td>
<td>ENT key saves changes and steps to next menu</td>
</tr>
<tr>
<td></td>
<td>of a lock code to lock/unlock the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>unit</td>
<td>Unit comes out of programming at any level</td>
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<td>RST Key resets counters</td>
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<td></td>
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TERMINAL DESIGNATIONS:

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

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

COMMUNICATION PORT TERMINAL DESIGNATIONS:

**RS-232 Port:** (DB9 Female)
6. NC
7. CMOS TXD
8. TX
9. RX

**RS-485 Port:** (DB9 Female)
1. TX+
2. TXD
3. RXD
4. RX+
5. GND

TYPICAL WIRING HOOKUPS:

**Input A**
- AC1 100 TO 260 VAC
- AC2 100 TO 260 VAC
- RELAY A (N.O.)
- COMMON
- RELAY A (N.C.)
- RELAY B (N.O.)
- COMMON
- RELAY B (N.C.)
- (+) 20VDC OUT (50mA)
- (−) 20VDC OUT (50mA)
- ANALOG O/P (+)
- ANALOG O/P (−)
- CTRL I/P E
- CTRL I/P D
- CTRL I/P C
- PULSE I/P B
- PULSE I/P A
- INPUT GND

**Input B**
- AC1 100 TO 260 VAC
- AC2 100 TO 260 VAC
- RELAY A (N.O.)
- COMMON
- RELAY A (N.C.)
- RELAY B (N.O.)
- COMMON
- RELAY B (N.C.)
- (+) 20VDC OUT (50mA)
- (−) 20VDC OUT (50mA)
- ANALOG O/P (+)
- ANALOG O/P (−)
- CTRL I/P E
- CTRL I/P D
- CTRL I/P C
- PULSE I/P B
- PULSE I/P A
- INPUT GND

**RELAY OUTPUTS**

**AC Supply**
- MOV recommended for inductive loads
- Neutral
- 3 N.O.
- 4 Common
- Output A
- Output B
- DC Supply

**ORDERING INFORMATION**

**Example:** 918-RTP A 3 1

**Series:** 918-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/Modbus-RTU, 2 Control Inputs (not available with RS-232)
A = 4-20 mA Out (Can be ordered with options 1 or 2)

**Accessories**
NEMA 4X 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 Adapter available, see CA285.