

## **RIO Tronics**

### **Technical Description**

RegistRead, PulsePoint, RotaRead meter pulse devices

These are retrofit devices for gas meters that enable digital pulse outputs of consumption data from the host meter, they attach to, via wire, to host logging products. Logging products are typically AMI/AMR products, energy management systems, building management systems, home energy monitors, on site displays, data loggers, and submetering systems.

Gas meters that are enabled include most all domestic utility grade diaphragm meters, commercial diaphragm meters, and ROOTS rotary meters of LMMA and B3 series.

Devices include a retrofit magnetic rotor that attaches to the meter's index drive or index dial, and customized Form A switching electronics that sense the passing magnetics. A 3 conductor cable connects to the host device.

Diaphragm meter devices attach on or behind the meter's index, fully under the index cover, protected from all weathering elements. Rotary meter devices attach under the index cover for LMMA series, and both inside and outside of the index cover for B3.

Wire tamper, FET type electronics, custom wire lengths and dual outputs are options.

### ***RegistRead & RotaRead***

#### **Specifications:**

**Temperature:** Operational from -40° to +240°F

**Moisture:** Operational to 100% humidity:  
Case is plated to protect from corrosion; all electronics are potted.

**Length:** 1.12" **Width:** .75" **Height:** .30" **Weight:** .6oz

**Maximum switching voltage D.C.:** + or - 30 volts

**Maximum switching current D.C.:** + or - 0.01 amps

**Maximum switching watts D.C.:** 0.30 watts

**Minimum voltage breakdown D.C.:** + or - 150 volts

**Contact resistance:** 0.5 ohms

**Open circuit resistance:** > 100,000,000 ohms

**Maximum rate contact closure:** 1000 pulses/sec- capable; typical actual is 3 sec max per contact closure with -2P diaphragm products,; 0.75 sec per contact for RMLL rotary products

**Maximum bounce time:** 0.2 ms max.

**Maximum distance from meter to host:** 5,000 foot, with 18 ga shielded wire for more than 25 feet

**Resistance:**100 ohms standard electric throughput resistance for interference suppression. Custom series and parallel values available.

**De-Bounce:** RIO Tronics recommends approx 250 – 500 msec . debounce at host recorder's front end input for all *RegistRead* and *RotaRead* products.

**Canadian approvals:** Industry Canada #AE0475 & #AE0606 for electric meters, #AG0347 for gas meters Custom switch circuits and resistor values available; 90 volt model available.

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## **Pulse Point Specifications**

Measurement Canada Approval: AG0515

**Form A digital switch, 2nd switch optional**

**2 contacts per revolution of the test dial**

**Duty Cycle: 20%on, 80%off**

**Pulse rate: Determined by meter, typical 3 seconds min/pulse**

**Optional: Transistor type FET output, with customized pulse length**

**Optional: Wire tamper detection circuits**

**Max. switch voltage: 180 V DC**

**Max. sw. rating: 8 W**

**100 ohm series resistance added to circuit**

**Breakdown voltage: 220 V DC**

**Operate time w/ bounce: 0.5ms**

**Operational Temperature: -40C - 130C**

Meter Compatibility Table-

**Options for all products:**

dual, separate outputs

FET type electronics

wire tamper sense

custom wire lead lengths

**RIO Tronics RegistRead**

Manuf	Size	RIO Tronics Model	Comments
American	175-250-400-630-100 0-3000-5000-10000	RD AMRC -2P	All diaphragms, direct read and circ read
Sensus	175-250-400	RD 44-2P	Direct Read
Actaris	175-250-400+675-100 0	RD SPRG-2P	Direct and Circ Read,incl A series
Lancaster	All domestic	RD 35 - 2P	Circ and direct read
ROOTS	Series Z	RD 35-2P	Circ and direct read
Sensus	750-1000-5000-10000	RD 41-2P	Circ read, requires MC818 index cover

Note: Most all types are available ;if not on list, can be developed from sample index

**RIO Tronics PulsePoint**

Manuf	Size	RIO Tronics Model	Comments
Sensus	175-250-400	PPIN2-2P	Circ read
Actaris	240-250-400	PPSA2-2P	Circ read and Direct read

## RIO Tronics RotaRead

### ROOTS Meters

ROOTS Type	TC or Non TC	RIO Tronics Model	Comments
LMMA -all sizes	TC	RMTC-25C	25 cu' resolution
LMMA all sizes	Non TC	RMCU-5N	5 cu' resolution
B3	TC	RMLL-C	50 cu' or 100 cu' resolution
B3	Non TC	RMLL-CU	5 cu' or 10 cu' resolution
Series Z			See RegistRead

### ROOTS Options:

- conduit fitting, 1/2" available for RMLL
- dual outputs
- FET type outputs
- custom wire lengths
- integrate Metscan type ROOTS B3