- Displays rate, time-in-process, ratio, sum, difference, or draw
- Optional relay outputs and/or 4-20 mA analog output
- Completely field programmable
- Full diagnostic functions
- Setpoint and start delay functions
- 3 programmable inputs
- 3 programmable transistor setpoint outputs
- Keypad lockout
- Optional explosion proof enclosure
- Optional NEMA 4X enclosure kit
- 115, 230 VAC (50-60 Hz) and 10-30 VDC power options

Description

The TR5000 is a full logic control process ratemeter that can display up to three separate values of rate and compare them to programmable setpoints. Rates A and B can be programmed by the user for speed or time in process. Rate C allows the user to display a relationship between rates A and B. This can be a Ratio (A/B), Sum (A+B), Difference (A-B), or Draw (A-B)/B. A ratio is typically used in blending and mixing applications. The sum and difference are commonly used when the operator needs to display the combined output of two separate but related processes. Draw is commonly used in web handling systems, such as plastic or wire, to indicate the thickness or stretch of the material being processed.
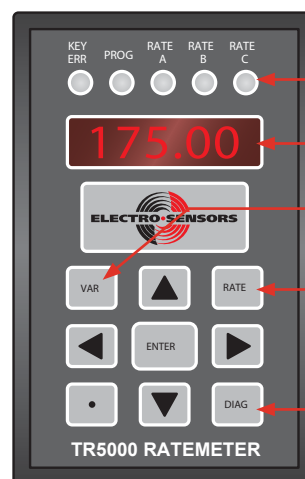
Options:

- 4-20 mA output can be programmed to represent three rates: A, B, or C. The 4-20 mA output can be scaled to reflect any area of the range, including operations requiring an inverse output

- Up to three programmable relay contact outputs, rated 250 VAC, 30 VDC at 5 Amps resistive load

Principle Of Operation

A shaft-mounted pulser disc or pulser wrap generates an alternating magnetic field that is picked up be the sensing head. The sensor transmits the speed as a digital pulse frequency to the TR5000 via a three conductor shielded cable. The TR5000 then compares this frequency signal to its programming and determines the appropriate setpoint output state and display value.

The TR5000 features three transistor outputs that can be set within any of the three rates A, B, or C. These outputs can be programmed to latch (requiring a manual reset), or stay active only when the setpoint condition is present.

Status LEDs give entry mode and operation status

Display window

Used to change or examine program

Used for selecting rate display

Used to test the TR5000

TR5000 RATEMETER

Product Specifications

Input Power	
Voltage	115 VAC, 6 VA @ 50/60 Hz, 1/16 Amp, requires external fuse
Optional Voltages	230 VAC, 10-30 VDC
Sensor Input	Switch Selectable
NPN Open-Collector	2,200 Ohm pull up to 12 VDC, 2.5 Volt trigger level
PNP Open-Collector	2,200 Ohm pull down, 2.5 Volt trigger level
Logic Level	2.5 Volt trigger level
Magnetic Pick-up	150 mV peak-to-peak minimum signal, 50 mV trigger level
Sensor Supply	12 VDC unregulated, 100 mA max
External Control I/O	
Standard Inputs	3 programmable switch inputs
Standard Setpoint Outputs	3 programmable, open collector transistors, 30 VDC, 150 mA max
Optional Setpoint Outputs	3 programmable N.O. contacts
Rating	250 VAC 5 A, 30 VDC 5 A Resistive
Optional Analog Output	1 programmable 4-20 mA or 0-10 VDC output, 12 bit DAC
Operational	
Accuracy	Display /Relays: 0.01% ± 1 Digit Analog: 0.1% of full scale
Response Time	Minimum 0.02 seconds
Control Range	Default 500 - 1, can be programmed from 9999 - 1
Modes of Operation	Time In Process, Ratio, Sum, Difference, Draw
Setpoint Presets	3 programmable as "over" or "under" of Rate A, B, or C
Display Update Time	0.5 seconds
Mechanical	
Enclosure	ABS Plastic 94V-0
Keypad	Polycarbonate Tactile Switch Pad, Chemical Resistant, and Splash Proof
Display	5-Digit, 0.3" Height, 7-Segment Displays, 5-Status LEDs
Operating Temperature	0° C to +50° C (+32° F to +122° F)
Dimensions	3.10" w x 4.85" h x 6.25" l
Panel Cutout	2.61" w x 4.31" h

Specifications subject to change without notice.

Ordering

Input Power	# of Relays	Analog Output	Part Number
115 VAC	-	-	800-072000
115 VAC	3	-	800-072200
115 VAC	-	4-20 mA	800-072400
115 VAC	3	4-20 mA	800-072600
115 VAC	-	0-10 V	800-072501
115 VAC	3	0-10 V	800-072701
230 VAC	-	-	800-072100
230 VAC	3	-	800-072300
230 VAC	-	4-20 mA	800-072500
230 VAC	3	4-20 mA	800-072700
230 VAC	-	0-10 V	800-072502
230 VAC	3	0-10 V	800-072702
10-30 VDC	-	-	800-072102
10-30 VDC	3	-	800-072302
10-30 VDC	-	4-20 mA	800-072503
10-30 VDC	3	4-20 mA	800-072703
10-30 VDC	-	0-10 V	800-072504
10-30 VDC	3	0-10 V	800-072704
Options			
Explosion Proof Enclosure			305-001400
NEMA 4X Enclosure Kit			725-003600
Faceplate Kit			725-000014

Customization

If one of our standard products does not meet your specifications, please call one of our applications specialists. Many of our products can be customized to fit specific needs.

Additional Information

For more information about the TR5000, please refer to the Installation and Operating Manual.
Email: sales@electro-sensors.com
Tel: (800)328-6170
Fax: (952)930-0130
We also have more information online at:
www.electro-sensors.com

5 YEAR WARRANTY