

Description

The SRT Square Root Transmitter accepts direct input from a differential pressure (d/p) transmitter. It provides a 4-20mA output that is proportional to actual flow rate by computing the square root of the differential pressure input, and producing a linear flow output signal.

The SRT will drive other process instruments such as Moore Industries' LIT Linear Integrating Totalizer. The LIT accepts the SRT's current output and produces a scalable pulse string signal for readout of flow on a totalizing counter. The SRT will also drive Moore Industries' 2-wire ITX Integrating Totalizer. This combination provides economical visual indication of the SRT's output in engineering units (gallons, barrels, etc.) on the ITX's full 8-digit LCD.



Easy-to-install surface-mount and high-density plug-in card housings allow easy and economical mounting in a control room or in a field-mounted enclosure.

Ordering Specifications

To order, use the bold face data from the Ordering Specifications section of the Specification table on page 2. For assistance, refer to the model number example located at the bottom of the table.

Features

- **Direct differential pressure input.** The SRT accepts input directly from all common differential pressure transmitters.
- **High accuracy and resolution.** Because the SRT uses a continuous square root computer, instead of a biased diode technique, it delivers exceptional accuracy and resolution.
- **RFI/EMI protection.** When ordered with the -RF option, the SRT's standard housing provides 50V/m protection to the harmful effects of radio frequency and electromagnetic interference.
- **Powers a 2-wire transmitter.** When equipped with the -TX option, the SRT will supply power to a d/p transmitter, which eliminates the need for an additional power supply

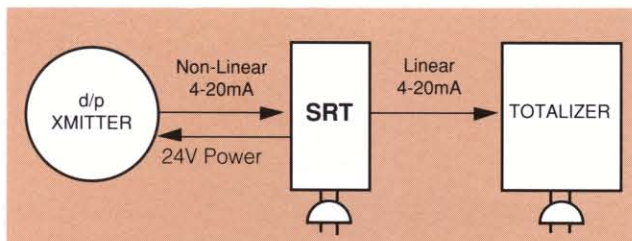


Figure 1. With the -TX option, the SRT powers a 2-wire transmitter while performing its square root function.

Certifications



CSA General Locations; Explosion-proof, Class I, Division I, Groups C, D (EX housing only)

City of Los Angeles, General Locations

SRT

4-Wire Square Root Transmitter

Specifications

Characteristics

Performance Calibration Capability:
Within $\pm 0.25\%$ of span
(linearity and repeatability)
from 1% to 100% of span

Frequency Response:
15Hz (3 dB point)

Isolation: Voltage output
units have input negative
side common to output
negative side. Current
output models have output
negative side elevated
above input negative side.
Power input isolation is
maintained on both ac
and dc powered units

Performance (continued)

Line Voltage Effect: ac
or dc: $\pm 0.005\%/1\%$ line
voltage change

Ripple: 10mV peak-to-
peak at maximum span
and maximum load
resistance

Load Effect: $\pm 0.01\%$ of
span from 0 to maximum
load resistance (current
output)

Ambient Temperature Range: -28°C to $+82^{\circ}\text{C}$
(-20°F to $+180^{\circ}\text{F}$)

Effect: $\pm 0.018\%/^{\circ}\text{C}$
($\pm 0.01\%/^{\circ}\text{F}$) over above
range

Adjustments Type: External multiturn
potentiometers

Zero: With minimum
input, adjusts output to
0%, $\pm 10\%$ of selected
output spans

Input Zero: Compensates
for input live zero offset for
specified zero percent
input

Span: With full scale
input, adjusts output to
100%, $\pm 20\%$ of selected
output span

Weight 908 grams (2 pounds)

Ordering Specifications

Unit	Input	Output	Power	Options	Housing
SRT	Current: 1-5MA into 200 ohms nominal 4-20MA into 50 ohms nominal 10-50MA into 20 ohms nominal Voltage (into 500 kilohms): 0-5V 1-5V 0-10V SC Field- selectable voltage input, any of above inputs (not available with EUR housing)	Current: 1-5MA into 0-4800 ohms 4-20MA into 0-1200 ohms 10-50MA into 0-480 ohms Voltage: 0-5V into 20 kilohms min. 1-5V into 20 kilohms min. 0-10V into 40 kilohms min. SC Field- selectable voltage output, any of above outputs (not available with EUR housing)	24DC ($\pm 10\%$) 45DC ($\pm 10\%$, 45DC not available with EUR housing) 117AC 220AC 240AC ($\pm 10\%$, 5 Watts nominal; not available with PC or EUR housing)	-RF RFI/EMI protection rates 30V/m - ABC = $\pm 0.25\%$ F.S. (not available on EUR or PC housing; for PC housing, order -RF protection on SMR or RMR rack) -TX Two-wire transmitter excitation 35Vdc @ 25mA output to 2-wire field transmitter (4-20mA only)	STD Standard housing with U-back bracket for surface mounting AB Standard housing with angle brackets for surface mounting DCM Standard housing with DIN clip for mounting on a G-type rail PC Plug-in card for mounting in an RMR or SMR multi-unit rack EUR Euro-style plug-in card for mounting in an RMR-EU rack EX Unit comes installed in explosion-proof enclosure with 2 conduit hubs (3- and 4-hub versions also available) OT Unit comes installed in oil- tight enclosure (NEMA 12) WT Unit comes installed in watertight enclosure (NEMA 4)

To order, specify: Unit / Input / Output / Power / Options [Housing]

Model number example: SRT / 4-20MA / 4-20MA / 24DC / -TX [STD]

Installation

For unit dimensions and terminal designations,
see the AB (#13.02), STD (#13.44), EX (#13.10),
and PC (#13.28) housing sheets.



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