

RC51, 52 & 53

Rate Converters

Description

Flow Technology's RC51, RC52 and RC53 Rate Converters are designed to convert low-level signals from turbine flowmeters or other pulse sources into accurate digital and analog outputs which are suitable for transmission to remote readout or control instrumentation. They are compatible with magnetic pickoffs, modulated carrier (RF) pickoffs, or pulse source inputs.

RC51 Rate Converters are the basic unit of the rate converter series and produce a 0–10 VDC p-p pulse output of the same frequency as the input frequency, and a variety of analog outputs proportional to flow rate.

RC52 Rate Converters incorporate a user-defined scaling circuit, which allows a specified number of pulses to equal a selected unit of volume. They are particularly suited for service as an interface with counters for totalizing applications and low-frequency input programmable controllers.

RC53 Rate Converters are equipped with an adjustable high/low alarm function and are ideal for warning systems, two-stage shutdowns or similar applications.

All Series 50 Rate Converters are available in NEMA 4X weatherproof, Class I, Division 1, Group C & D or Group B explosion-proof enclosures, Zone 1 EExd or Zone 2 ExnA electrically safe enclosures.

Features

- Compatible with magnetic or modulated carrier (RF) turbine flowmeter pickoffs
- Powered by 115 VAC, 220 VAC or 22–32 VDC
- High reliability in harsh industrial environments
- Frequency, current and voltage outputs available
- Weatherproof or explosion-proof enclosures
- Modular electronics allow for easy reconfiguration or replacement
- Scaled pulse output option
- Limit alarms
- Easily installed directly on flowmeter or at a remote location



RC51, 52 & 53
Rate Converters

Specifications

Standard Input

Frequency Range	0–4 kHz
Amplitude	5–20 VDC p-p

Optional Inputs

Magnetic Pickoff	
<i>Frequency Range:</i>	5 Hz – 3.5 kHz
<i>Sensitivity:</i>	20 mV – 10 VDC p-p
<i>Input Impedance:</i>	3.3 K Ω
<i>Max. Distance From Pickoff:</i>	300 ft. (90 m)
Modulated Carrier Pickoff	1mH coil
<i>Frequency Range:</i>	5 Hz – 3.5 kHz
<i>Carrier Frequency:</i>	45 kHz @ approximately 8–15 VDC p-p (12 VDC p-p typical)
<i>Max. Distance From Pickoff:</i>	75 ft. (15 m)
Other RF Pickoff	330 μ H coil
<i>Frequency Range:</i>	5 Hz – 3.5 kHz
<i>Carrier Frequency:</i>	40 kHz @ approximately 8–15 VDC p-p adjustable (12 VDC p-p typical)
2-Wire 4 or 20 mA Pulse	
<i>Frequency Range:</i>	0–3 kHz
<i>Max. Distance From Pickoff:</i>	50 ft. (15 m)

Model Numbering System

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Basic

Model No.

RC51
RC52
RC53

Input Power

1 = 115 VAC
2 = 220 VAC
3 = 22-32 VDC
(standard)

Signal Inputs

A = Magnetic
B = Pulse (standard)
C = FT 1 mH RF
D = 330 mH RFμ
F = 2-Wire Pulse 4 or 20 mA

*Outputs

G000 = 4-20 mA, 0-10 VDC and 0-10 V pulse (unscaled)
H000 = 1-5 VDC, 0-10 VDC and 0-10 V pulse (unscaled)
I000 = 0-5 VDC and 0-10 V pulse (unscaled)
0000 = 0-10 VDC and 0-10 V pulse (unscaled)

Enclosures

1 = No Enclosure
4 = EExd IIC T5
5 = ExnA II T6
6 = IP65/NEMA 4X
7 = IP65/NEMA 4X with MS connectors
8 = Class I, Division 1, Group C & D
9 = Class I, Division 1, Group B

*0-10 V unscaled pulse output available only when pulse input is not used.

Specifications (cont'd)

Outputs

Standard

Analog: 0-10 VDC (all models)
Linearity: $\pm 0.1\%$ of F.S. over 20:1 range

Frequency: 0-10 VDC pulse, unscaled (all models)

Scaled Pulse: 0-10 VDC scaled pulse (RC52 only)

Alarms: 2 SPST relays (RC53 only)
selectable for high or low alarm
Relay 3 A @ 30 VDC or 120 VAC
Resistive 1/10 HP @ 120 VAC

Optional

One of the following may be selected with standard output:
Analog: 0-5 VDC
1-5 VDC
4-20 mA

Power

Standard

Options

22-32 VDC, 125 mA
110 VAC, $\pm 10\%$,
50/60 Hz, 6 watts
220 VAC, $\pm 10\%$,
50/60 Hz, 6 watts

Temperature

Operating

32° F to 158° F
(0° C to 70° C)

Storage

-40° F to 185° F
(-40° C to 85° C)

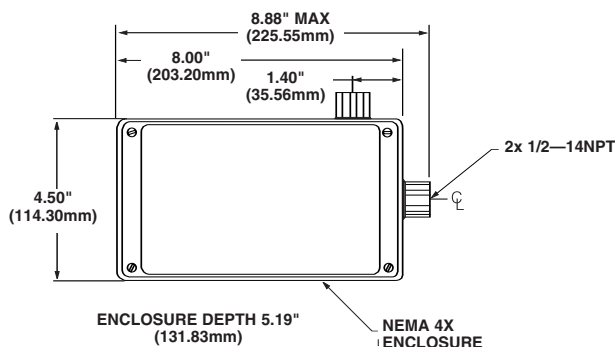
Enclosures

Standard

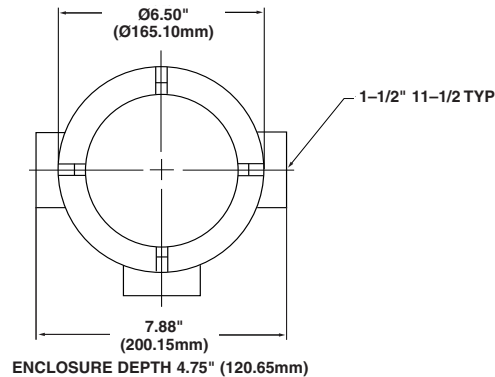
Options

IP65/NEMA 4X with conduit hubs
IP65/NEMA 4X with MS connectors
Class I, Division 1, Group C & D explosion-proof
Class I, Division 1, Group B explosion-proof
Zone 1 EExd IIC T5
Zone 2 ExnA II T6

Enclosure Options



**IP65/NEMA 4X
(STANDARD)**



GROUP C & D

Specifications are for reference only and are subject to change without notice.

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