DSCT

Isolated DIN Rail Mount 2-Wire Transmitters

Instrument Class® Performance

"Best of Breed" accuracy, linearity, stability and noise specifications. Outstanding protection and isolation performance for input, output and power connections. Capable of operating on the widest of loop supply power and over the broadest operating temperature range!

Description

Dataforth's DSCT series of loop powered 2-wire transmitters consists of seven family groups with a total of 48 transmitter models that interface to a wide variety of voltage, current, temperature and position measuring devices. As one of Dataforth's **Instrument Class®** products, the DSCT family provides superior specifications such as ±0.03% accuracy, five poles of filtering, 1500Vrms continuous isolation, low output noise, and much more.

The DSCT 2-wire transmitter conditions and sends analog signals from sensors located in the "field" to monitoring and control equipment, usually omputers, located thousands of feet away in central control areas. The DSCT accepts a wide range of inputs, including millivolt, volt, milliamp, thermocouple, RTD, potentiometer, and slide wire. It operates on power from a 2-wire signal loop and modulates the supply current to represent the input signal within a 4 to 20mA range.

Two-wire transmission loops are a very economical method for connecting sensors to distant control rooms. Since the DSCT operates from the signal loop current, no additional, expensive power and wiring are required. Only low cost, twisted pair wiring is needed.

Features

- ±0.03% Accuracy (Typical)
- ±0.01% Linearity
- 1500Vrms Transformer Isolation & 240Vrms Field-side Protection
- ANSI/IEEE C37.90.1 Transient Protection
- Wide Loop Supply Voltage, 10.8V to 60V
- 5-Pole Low-Pass Filtering
- Up to 160dB CMR
- 85dB NMR at 60Hz, 80dB at 50Hz
- Protected Against Reverse Connection of Loop Voltage
- –40°C to +80°C Operating Temperature
- Mounts on DIN Rail EN 50022, 35x7.5 or 35x15
- CSA C/US Certified (Class I, Division 2, Groups A, B, C, D)
- CE Compliant
- Manufactured per RoHS II Directive 2011/65/EU

DSCT Selection Guide

ANALOG VOLTAGE INPUT TRANSMITTERS Page 276

MODEL	INPUT RANGE	MODEL	INPUT RANGE
DSCT30-01	±10mV	DSCT31-01	±1V
DSCT30-02	±50mV	DSCT31-02	±5V
DSCT30-03	±100mV	DSCT31-03	±10V
DSCT30-04	0 - 10mV	DSCT31-04	0 - 1V
DSCT30-05	0 - 50mV	DSCT31-05	0 - 5V
DSCT30-06	0 - 100mV	DSCT31-06	0 - 10V
		DSCT31-07	±20V
		DSCT31-08	0 - 20V

ANALOG CURRENT INPUT TRANSMITTERS Page 278

MODEL	INPUT RANGE
DSCT32-01	4 to 20mA
DSCT32-02	0 to 20mA

LINEARIZED 2- OR 3-WIRE RTD INPUT TRANSMITTERS Page 280

MODEL	TYPE**	INPUT RANGE
DSCT34-01	100ΩPt	–100°C to +100°C (–148°F to +212°F)
DSCT34-02	100ΩPt	0°C to +100°C (+32°F to +212°F)
DSCT34-03	100ΩPt	0°C to +200°C (+32°F to +392°F)
DSCT34-04	100ΩPt	0°C to +600°C (+32°F to +1112°F)
DSCT34-05	100ΩPt	0°C to +400°C (+32°F to +752°F)
DSCT34N-01	120ΩNi	0°C to +300°C (+32°F to +572°F)

POTENTIOMETER INPUT TRANSMITTERS Page 282

MODEL	INPUT RANGE
DSCT36-01	0 to 100Ω
DSCT36-02	0 to 500Ω
DSCT36-03	0 to 1kΩ
DSCT36-04	0 to 10kΩ

THERMOCOUPLE INPUT TRANSMITTERS Page 284

MODEL	TYPE‡	INPUT RANGE
DSCT37J-01	J	–100°C to +760°C (–148°F to +1400°F)
DSCT37K-02	K	–100°C to +1350°C (–148°F to +2462°F)
DSCT37T-03	T	–100°C to +400°C (–148°F to +752°F)
DSCT37E-04	E	0°C to +900°C (+32°F to +1652°F)
DSCT37R-05	R	0°C to +1750°C (+32°F to +3182°F)
DSCT37S-06	S	0°C to +1750°C (+32°F to +3182°F)
DSCT37B-07	B	0°C to +1800°C (+32°F to +3272°F)
DSCT37N-08	N	–100°C to +1300°C (–148°F to +2372°F)

LINEARIZED THERMOCOUPLE INPUT TRANSMITTERS Page 286

MODEL	TYPE‡	INPUT RANGE
DSCT47J-01	J	0°C to +760°C (+32°F to +1400°F)
DSCT47J-02	J	–100°C to +300°C (–148°F to +572°F)
DSCT47J-03	J	0°C to +500°C (+32°F to +932°F)
DSCT47K-04	K	0°C to +1000°C (+32°F to +1832°F)
DSCT47K-05	K	0°C to +500°C (+32°F to +932°F)
DSCT47K-13	K	–100°C to +1350°C (–148°F to +2462°F)
DSCT47K-14	K	0°C to +1200°C (+32°F to +2192°F)
DSCT47T-06	T	–100°C to +400°C (–148°F to +752°F)
DSCT47T-07	T	0°C to +200°C (+32°F to +392°F)
DSCT47E-08	E	0°C to +1000°C (+32°F to +1832°F)
DSCT47R-09	R	+500°C to +1750°C (+932°F to +3182°F)
DSCT47S-10	S	+500°C to +1750°C (+932°F to +3182°F)
DSCT47B-11	B	+500°C to +1800°C (+932°F to +3272°F)
DSCT47N-15	N	–100°C to +1300°C (–148°F to +2372°F)

ACCESSORIES Page 289

MODEL	DESCRIPTION
SCMXRAIL1-XX	DIN EN50022-35x7.5 (slotted steel),length -XX meters
SCMXRAIL3-XX	DIN EN50022-35x15 (slotted steel),length -XX meters

POWER SUPPLIES Page 232

PWR-PS5R7W	Power Supply, 24V, 0.3A, 100-240VAC Input
PWR-PS5R15W	Power Supply, 24V, 0.65A, 100-240VAC Input

‡THERMOCOUPLE ALLOY COMBINATIONS

Standards: DIN IEC 584, ANSI MC96-1-82, JIS C 1602-1981

TYPE	MATERIAL
J	Iron vs. Copper-Nickel
K	Nickel-Chromium vs. Nickel-Aluminum
T	Copper vs. Copper-Nickel
E	Nickel-Chromium vs. Copper-Nickel
R	Platinum-13% Rhodium vs. Platinum
S	Platinum-10% Rhodium vs. Platinum
B	Platinum-30% Rhodium vs.Platinum-6%Rhodium
N	Nickel-14.2% Chromium-1.4% Silicon vs. Nickel-4.4% Silicon-0.1% Magnesium

****RTD STANDARDS**

TYPE	ALPHA COEFFICIENT	DIN	JIS
100Ω Pt	0.00385	DIN 43760	JIS C 1604-1989
120Ω Ni	0.00672		