

DSCT32







Analog Current Input Transmitters

Description

Each DSCT32 current input transmitter provides a single channel of analog input which is filtered, isolated, amplified, and converted to a process current output (Figure 1). Signal filtering is accomplished with a five-pole filter, which provides 80dB per decade of normal-mode rejection above 100Hz. An anti-aliasing pole is located on the field side of the isolation barrier, and the other four are on the process loop side. After the initial field-side filtering, the input signal is chopped by a proprietary chopper circuit. Isolation is provided by transformer coupling, again using a proprietary technique to suppress transmission of common mode spikes or surges.

Special input and output circuits on the DSCT32 transmitters provide protection against accidental connection of power-line voltages up to 240VAC and against transient events as defined by ANSI/IEEE C37.90.1. Signal and loop power lines are secured to the module using screw terminals, which are in pluggable terminal blocks for ease of system assembly and reconfiguration.

The modules have excellent stability over time and do not require recalibration, however, zero and span settings are adjustable up to ±10% to accommodate situations where fine-tuning is desired. The adjustments are made using potentiometers located under the front panel label and are non-interactive for ease of use.

Features

- · Accepts Milliamp Level Signals
- Process Current Output
- 1500Vrms Transformer Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- Input and Output Protected to 240VAC Continuous
- Up to 60V Loop Voltage
- 105dB CMR
- ±0.03% Accuracy
- ±0.01% Linearity
- · Easily Mounts on Standard DIN Rail
- CSA C/US Certified
- CE Compliant

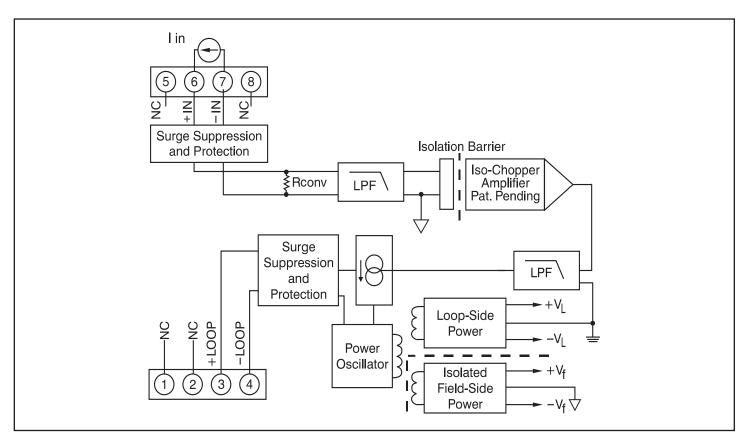


Figure 1: DSCT32 Blok Diagram



Specifications Typical* at T_A = +25°C and +24VDC loop voltage

=	
Module	DSCT32
Input Range Current Conversion Resistor Input Protection	0-20mA or 4-20mA 50.00Ω
Continuous Transient CMV, Input to Output	240Vrms max ANSI/IEEE C37.90.1
Continuous Transient CMR (50Hz or 60Hz) NMR (-3dB at 100Hz)	1500Vrms max ANSI/IEEE C37.90.1 105dB 80dB/decade Above 100Hz
Adjustability Accuracy ⁽¹⁾ Conformity Stability	±10% Zero and Span ±0.03% ±0.01%
Offset Gain Noise	±30ppm/°C ±90ppm/°C
Output, 100kHz Bandwidth, –3dB Response Time, 90% Span	3μArms 100Hz 5ms
Output Range Output Limits	4mA to 20mA
Under-range Over-range	2.8mA 29mA
Output Protection Reverse Polarity Over-voltage	Continuous 240Vrms Continuous
Transient Loop Supply Voltage	ANSI/IEEE C37.90.1 10.8V to 60V
Loop Supply Voltage Loop Supply Sensitivity Turn-On Delay	±0.0005% V 400ms
Mechanical Dimensions (h)(w)(d)	2.95" x 0.89" x 4.13" (75mm x 22.5mm x 105mm)
Mounting	DIN EN 50022 -35x7.5 or -35x15 rail
Environmental Operating Temperature Storage Temperature Relative Humidity Emissions, EN61000-6-4 Radiated, Conducted Immunity EN61000-6-2 RF	-40°C to +80°C -40°C to +80°C 0 to 95% Noncondensing ISM, Group 1 Class A ISM, Group 1 Performance A ±0.5% Span Error
ESD, EFT	Performance B

NOTES:

Ordering Information

Model	Input Range
DSCT32-01	4-20mA
DSCT32-02	0-20mA

^{*}Contact factory or your local Dataforth sales office for maximum values.

⁽¹⁾ Includes linearity, hysteresis and repeatability.