

DSCA32









Description

Each DSCA32 current input module provides a single channel of analog input which is filtered, isolated, amplified, and converted to a high-level voltage output (Figure 1). Signal filtering is accomplished with a five-pole filter which is optimized for step response. An anti-aliasing pole is located on the field side of the isolation barrier, and the other four poles are on the system 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.

Module output is either voltage or current. For current output models a dedicated loop supply is provided at terminal 3 (+OUT) with loop return located at terminal 4 (-OUT). The system-side load may be either floating or grounded.

Special input circuits provide protection against accidental connection of power-line voltages up to 240VAC and against transient events as defined by ANSI/IEEE C37.90.1. Protection circuits are also present on the signal output and power input terminals to guard against transient events and power reversal. Signal and 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 $\pm 5\%$ 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
- Industry Standard Output of 0 to +10V, 0 to 20mA, or 4 to 20mA
- 1500Vrms Transformer Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- Input Protected to 240VAC Continuous
- True 3-Way Isolation
- Wide Range of Supply Voltage
- 105dB CMR
- 5 Poles of Filtering
- ±0.03% Accuracy
- ±0.01% Linearity
- · Easily Mounts on Standard DIN Rail
- C-UL-US Listed
- CE and ATEX Compliant

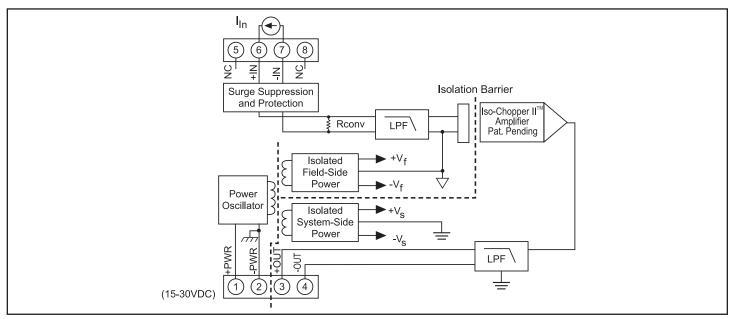


Figure 1: DSCA32 Blok Diagram

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

| - +25 C and +24 VDC supply voltage |
|---|
| DSCA32 |
| 0-20mA or 4-20mA <100Ω <100Ω 65kΩ 240Vrms max ANSI/IEEE C37.90.1 |
| See Ordering Information 600Ω max 8mA (V _{OUT}), 30mA (I _{OUT}) Continuous ANSI/IEEE C37.90.1 1500Vrms max ANSI/IEEE C37.90.1 50VDC max 105dB |
| ±0.03% Span ±0.01% Span ±5% Zero and Span ±6ppm/°C (V _{OUT}), ±20ppm/°C (I _{OUT}) ±40ppm/°C 300µVrms (V _{OUT}), 1µArms (I _{OUT}) |
| 100Hz 100dB per Decade above 100Hz 5ms |
| 15 to 30VDC 25mA (V _{OUT}), 55mA (I _{OUT}) ±0.0001% % Continuous ANSI/IEEE C37.90.1 |
| 2.95" x 0.89" x 4.13" (75mm x 22.5mm x 105mm) |
| DIN EN 50022 -35x7.5 or -35x15 rail |
| -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 Performance B |
| |

Ordering Information

| Model | Input Range | Output Range † |
|-------------------------------------|-------------------------------------|-------------------------|
| DSCA32-01 DSCA32-02 DSCA32-03 | 4mA to 20mA 0mA to 20mA ±20mA | 2, 3, 4 2, 3, 4 1 |
| D3CA32-03 | ±20IIIA | ı |

†Output Ranges Available

| Output Range | Part No. Suffix | Example |
|---------------|-----------------|------------|
| 110V to +10V | NONE | DSCA32-03 |
| 2. 0V to +10V | NONE | DSCA32-01 |
| 3. 4 to 20mA | C | DSCA32-01C |
| 4. 0 to 20mA | E | DSCA32-01E |

Installation Notes:

- 1.) This Equipment is Suitable for Use in Class I, Division 2, Groups A, B,C, D, or Non-Hazardous Locations Only.
- 2.) WARNING Explosion Hazard Substitution of Components May Impair Suitability for Class I, Division 2.
- 3.) WARNING Explosion Hazard Do Not Disconnect Equipment Unless Power Has Been Switched Off or The Area is Known to be Non-Hazardous.
- 4.) The Power to These Devices Shall Be Limited By an Over-Current Protection Device, UL Certified Fuse (JDYX/JDYX2) Rated 6A Max.

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

⁽¹⁾ Includes linearity, hysteresis and repeatability.