

DSCA



High Performance DIN Isolated Analog Signal Conditioners

Description

Each Instrument-Class™ DSCA module provides a single channel of isolated analog input or output. Various input modules accept analog voltage or current signals from all types of field sensors and sources and filter, isolate, amplify, linearize, and convert these input signals to high-level analog outputs suitable for use in data acquisition, test and measurement, and control systems. Output modules accept high-level analog voltage signals from a system, then buffer, isolate, filter, and amplify before providing a current or voltage output to a field device.



► Features

- ±0.03% Accuracy
- Industry Standard Output of either 0 to 10V ±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 15V - 30VDC Supply Voltage Range
- 160dB CMR
- 85dB NMR at 60Hz, 80dB at 50Hz
- ±0.01% Linearity
- Easily Mounts on Standard DIN Rail
- Highest Performance-to-Cost Value
- Screw Terminals and Plug-in Terminal Blocks Simplify Wiring and Maintenance
- C-UL-US Listed
- CE and ATEX Compliant

► DSCA Selection Guide

ANALOG VOLTAGE INPUT MODULES, 3Hz BW Page 130

MODEL	INPUT RANGE	OUTPUT RANGE†
DSCA30-01	-10mV to +10mV	1
DSCA30-02	-50mV to +50mV	1
DSCA30-03	-100mV to +100mV	1
DSCA30-04	-10mV to +10mV	2, 3, 4
DSCA30-05	-50mV to +50mV	2, 3, 4
DSCA30-06	-100mV to +100mV	2, 3, 4
DSCA30-07	0 to +10mV	2, 3, 4
DSCA30-08	0 to +50mV	2, 3, 4
DSCA30-09	0 to +100mV	2, 3, 4
DSCA31-01	-1V to +1V	1
DSCA31-02	-5V to +5V	1
DSCA31-03	-10V to +10V	1
DSCA31-04	-1V to +1V	2, 3, 4
DSCA31-05	-5V to +5V	2, 3, 4
DSCA31-06	-10V to +10V	2, 3, 4
DSCA31-07	-20V to +20V	1
DSCA31-08	-20V to +20V	2, 3, 4
DSCA31-09	-40V to +40V	1
DSCA31-10	-40V to +40V	2, 3, 4
DSCA31-11	0 to +1V	2, 3, 4
DSCA31-12	0 to +5V	2, 3, 4
DSCA31-13	0 to +10V	2, 3, 4
DSCA31-14	0 to +20V	2, 3, 4
DSCA31-15	0 to +40V	2, 3, 4

ANALOG CURRENT INPUT MODULES Page 132

MODEL	INPUT RANGE	OUTPUT RANGE†
DSCA32-01	4mA to 20mA	2, 3, 4
DSCA32-02	0mA to 20mA	2, 3, 4
DSCA32-03	-20mA to 20mA	1
DSCA32-04	-20mA to 20mA	2, 3, 4

ISOLATED TRUE RMS INPUT MODULES Page 134

MODEL	INPUT RANGE (rms)	OUTPUT RANGE (dc)†
DSCA33-01	0 to 100mV	2, 3, 4, 5, 6
DSCA33-02	0 to 1V	2, 3, 4, 5, 6
DSCA33-03	0 to 10V	2, 3, 4, 5, 6
DSCA33-04	0 to 150V	2, 3, 4, 5, 6
DSCA33-05	0 to 300V	2, 3, 4, 5, 6
DSCA33-06	0 to 1A	2, 3, 4, 5, 6
DSCA33-07	0 to 5A	2, 3, 4, 5, 6

LINEARIZED 2- or 3-WIRE RTD INPUT MODULES Page 136

MODEL	INPUT RANGE	OUTPUT RANGE†
100Ω Pt **		
DSCA34-01	-100°C to +100°C (-148°F to +212°F)	2, 3, 4
DSCA34-02	0°C to +100°C (+32°F to +212°F)	2, 3, 4
DSCA34-03	0°C to +200°C (+32°F to +392°F)	2, 3, 4
DSCA34-04	0°C to +600°C (+32°F to +1112°F)	2, 3, 4
DSCA34-05	-50°C to +350°C (-58°F to +662°F)	2, 3, 4
120Ω Ni **		
DSCA34N-01	0°C to +300°C (+32°F to +572°F)	2, 3, 4

DSCA

► DSCA Selection Guide Continued
POTENTIOMETER INPUT MODULES Page 138

MODEL	INPUT RANGE	OUTPUT RANGE [†]
DSCA36-01	100Ω	2, 3, 4
DSCA36-02	500Ω	2, 3, 4
DSCA36-03	1kΩ	2, 3, 4
DSCA36-04	10kΩ	2, 3, 4

THERMOCOUPLE INPUT MODULES Page 140

MODEL	TYPE [‡]	INPUT RANGE	OUTPUT RANGE [†]
DSCA37J-01	J	-100°C to +760°C (-148°F to +1400°F)	2, 3, 4
DSCA37K-02	K	-100°C to +1350°C (-148°F to +2462°F)	2, 3, 4
DSCA37T-03	T	-100°C to +400°C (-148°F to +752°F)	2, 3, 4
DSCA37E-04	E	0°C to +900°C (+32°F to +1652°F)	2, 3, 4
DSCA37R-05	R	0°C to +1750°C (+32°F to +3182°F)	2, 3, 4
DSCA37S-06	S	0°C to +1750°C (+32°F to +3182°F)	2, 3, 4
DSCA37B-07	B	0°C to +1800°C (+32°F to +3272°F)	2, 3, 4
DSCA37N-08	N	-100°C to +1300°C (-148°F to +2372°F)	2, 3, 4

STRAIN GAGE INPUT MODULES Page 142

MODEL	INPUT RANGE	EXCITATION VOLTAGE	SENS	OUTPUT RANGE [†]
DSCA38-01	-10mV to +10mV	+3.333V	3mV/V	1
DSCA38-02	-30mV to +30mV	+10.0V	3mV/V	1
DSCA38-03	-10mV to +10mV	+3.333V	3mV/V	1
DSCA38-04	-30mV to +30mV	+10.0V	3mV/V	1
DSCA38-05	-20mV to +20mV	+10.0V	2mV/V	1
DSCA38-06	-33.3mV to +33.3mV	+3.333V	10mV/V	1
DSCA38-07	-100mV to +100mV	+10.0V	10mV/V	1
DSCA38-08	-10mV to +10mV	+3.333V	3mV/V	2, 3, 4
DSCA38-09	-30mV to +30mV	+10.0V	3mV/V	2, 3, 4
DSCA38-10	-10mV to +10mV	+3.333V	3mV/V	2, 3, 4
DSCA38-11	-30mV to +30mV	+10.0V	3mV/V	2, 3, 4
DSCA38-12	-20mV to +20mV	+10.0V	2mV/V	2, 3, 4
DSCA38-13	-33.3mV to +33.3mV	+3.333V	10mV/V	2, 3, 4
DSCA38-14	-100mV to +100mV	+10.0V	10mV/V	2, 3, 4
DSCA38-15	0 to +10mV	+3.333V	3mV/V	2, 3, 4
DSCA38-16	0 to +30mV	+10.0V	3mV/V	2, 3, 4
DSCA38-17	0 to +10mV	+3.333V	3mV/V	2, 3, 4
DSCA38-18	0 to +30mV	+10.0V	3mV/V	2, 3, 4
DSCA38-19	0 to +20mV	+10.0V	2mV/V	2, 3, 4
DSCA38-20	0 to +33.3mV	+3.333V	10mV/V	2, 3, 4
DSCA38-21	0 to +100mV	+10.0V	10mV/V	2, 3, 4

CURRENT OUTPUT MODULES Page 144

MODEL	INPUT RANGE	OUTPUT RANGE
DSCA39-01	0V to +10V	4mA to 20mA
DSCA39-02	-10V to +10V	4mA to 20mA
DSCA39-03	0V to +10V	0mA to 20mA
DSCA39-04	-10V to +10V	0mA to 20mA
DSCA39-07	-10V to +10V	-20mA to +20mA

ANALOG VOLTAGE INPUT MODULES, 3kHz BW Page 146

MODEL	INPUT RANGE	OUTPUT RANGE [†]
DSCA40-01	-10mV to +10mV	1
DSCA40-02	-50mV to +50mV	1
DSCA40-03	-100mV to +100mV	1
DSCA40-04	-10mV to +10mV	2, 3, 4
DSCA40-05	-50mV to +50mV	2, 3, 4
DSCA40-06	-100mV to +100mV	2, 3, 4
DSCA40-07	0 to +10mV	2, 3, 4
DSCA40-08	0 to + 50mV	2, 3, 4
DSCA40-09	0 to +100mV	2, 3, 4
DSCA41-01	-1V to +1V	1
DSCA41-02	-5V to +5V	1
DSCA41-03	-10V to +10V	1
DSCA41-04	-1V to +1V	2, 3, 4
DSCA41-05	-5V to +5V	2, 3, 4
DSCA41-06	-10V to +10V	2, 3, 4
DSCA41-07	-20V to +20V	1
DSCA41-08	-20V to +20V	2, 3, 4
DSCA41-09	-40V to +40V	1
DSCA41-10	-40V to +40V	2, 3, 4
DSCA41-11	0 to +1V	2, 3, 4
DSCA41-12	0 to +5 V	2, 3, 4
DSCA41-13	0 to +10V	2, 3, 4
DSCA41-14	0 to +20V	2, 3, 4
DSCA41-15	0 to +40V	2, 3, 4

2-WIRE TRANSMITTER INTERFACE MODULES Page 148

MODEL	INPUT RANGE	OUTPUT RANGE [†]
DSCA42-01	4mA to 20mA	0V to +10V & 3, 4
DSCA42-02	4mA to 20mA	2V to +10V

GENERAL PURPOSE INPUT MODULES, DC EXCITATION Page 150

MODEL	INPUT RANGE	OUTPUT RANGE [†]
DSCA43-01	-1V to +1V	1
DSCA43-02	-2V to +2V	1
DSCA43-03	-3V to +3V	1
DSCA43-04	-4V to +4V	1
DSCA43-05	-5V to +5V	1
DSCA43-06	-6V to +6V	1
DSCA43-07	-7V to +7V	1
DSCA43-08	-8V to +8V	1
DSCA43-09	-9V to +9V	1
DSCA43-10	-10V to +10V	1
DSCA43-11	-1V to +1V	2, 3, 4
DSCA43-12	-2V to +2V	2, 3, 4
DSCA43-13	-3V to +3V	2, 3, 4
DSCA43-14	-4V to +4V	2, 3, 4
DSCA43-15	-5V to +5V	2, 3, 4
DSCA43-16	-6V to +6V	2, 3, 4
DSCA43-17	-7V to +7V	2, 3, 4
DSCA43-18	-8V to +8V	2, 3, 4
DSCA43-19	-9V to +9V	2, 3, 4
DSCA43-20	-10V to +10V	2, 3, 4

FREQUENCY INPUT MODULES Page 152

MODEL	INPUT RANGE	OUTPUT RANGE†
DSCA45-01	0 to 500Hz	2, 3, 4
DSCA45-02	0 to 1kHz	2, 3, 4
DSCA45-03	0 to 2.5kHz	2, 3, 4
DSCA45-04	0 to 5kHz	2, 3, 4
DSCA45-05	0 to 10kHz	2, 3, 4
DSCA45-06	0 to 25kHz	2, 3, 4
DSCA45-07	0 to 50kHz	2, 3, 4
DSCA45-08	0 to 100kHz	2, 3, 4

LINEARIZED THERMOCOUPLE INPUT MODULES (0 TO +10V OUTPUT) Page 154

MODEL	TYPE‡	INPUT RANGE	OUTPUT RANGE†
DSCA47J-01	J	0°C to +760°C (+32°F to +1400°F)	2, 3, 4
DSCA47J-02	J	-100°C to +300°C (-148°F to +572°F)	2, 3, 4
DSCA47J-03	J	0°C to +500°C (+32°F to +932°F)	2, 3, 4
DSCA47K-04	K	0°C to +1000°C (+32°F to +1832°F)	2, 3, 4
DSCA47K-05	K	0°C to +500°C (+32°F to +932°F)	2, 3, 4
DSCA47K-13	K	-100°C to +1350°C (-148°F to +2462°F)	2, 3, 4
DSCA47K-14	K	0°C to +1200°C (+32°F to +2192°F)	2, 3, 4
DSCA47T-06	T	-100°C to +400°C (-148°F to +752°F)	2, 3, 4
DSCA47T-07	T	0°C to +200°C (+32°F to +392°F)	2, 3, 4
DSCA47E-08	E	0°C to +1000°C (+32°F to +1832°F)	2, 3, 4
DSCA47R-09	R	+500°C to +1750°C (+932°F to +3182°F)	2, 3, 4
DSCA47S-10	S	+500°C to +1750°C (+932°F to +3182°F)	2, 3, 4
DSCA47B-11	B	+500°C to +1800°C (+932°F to +3272°F)	2, 3, 4
DSCA47N-15	N	-100°C to +1300°C (-148°F to +2372°F)	2, 3, 4

VOLTAGE OUTPUT MODULES Page 156

MODEL	INPUT RANGE	OUTPUT RANGE
DSCA49-04	0V to +10V	-10V to +10V
DSCA49-05	-10V to +10V	-10V to +10V
DSCA49-06	-10V to +10V	0V to +10V

ACCESSORIES Page 158

PWR-PS5RA	Power Supply, 24V, 0.3A, 100-240VAC Input
PWR-PS5RB	Power Supply, 24V, 0.6A, 100-240VAC Input
PWR-PS5RC	Power Supply, 24V, 1.3A, 100-240VAC Input
PWR-PS5RD	Power Supply, 24V, 2.1A, 100-240VAC Input
PWR-PS5RE	Power Supply, 24V, 4.2A, 100-240VAC Input
SCMXRAIL1-XX	DIN EN 50022-35 x 7.5 (slotted steel), length -xx, in meters
SCMXRAIL3-XX	DIN EN 50022-35 x 15 (slotted steel), length -xx, in meters

†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		

†OUTPUT RANGES AVAILABLE

Output Range	Part No. Suffix	Example
1. -10V to +10V	None	DSCA30-01
2. 0V to +10V	None	DSCA30-04
3. 4 to 20mA	C	DSCA30-01C
4. 0 to 20mA	E	DSCA30-04E
5. 0 to +5V	A	DSCA33-01A
6. 0 to 1mA	B	DSCA33-01B

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.