

DSCA

DSCA36

Potentiometer Input Signal Conditioners

Description

Each DSCA36 potentiometer input module provides a single channel of potentiometer input which is filtered, isolated, amplified, and converted to a high-level voltage output (Figure 1). Signal filtering is accomplished with a fivepole filter which provides 85dB of normal-mode rejection at 60Hz and 80dB at 50Hz. 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.

Potentiometer excitation is provided from the module using a precision current source. Lead compensation is achieved by matching two current paths which cancels the effects of lead resistance. The excitation current is small (approx. 0.25mA) which minimizes self-heating of the sensor.

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 powerline 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

- Interfaces to Potentiometers up to $10k\Omega$
- 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
- 160dB CMR
- 85dB NMR at 60Hz, 80dB at 50Hz
- ±0.03% Accuracy
- ±0.01% Linearity
- · Easily Mounts on Standard DIN Rail
- C-UL-US Listed
- CE and ATEX Compliant



Figure 1: DSCA36 Block Diagram

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DATAFORTH[®]

High Performance Signal Conditioners

DSCA

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

Input Range Limits0Ω to 10kΩInput Protection240Vrms maxContinuous240Vrms maxTransient260µA; 1000, 5000, 1kΩ SensorLead Resistance Effect±0.01Ω/Ω; 1000, 5000, 1kΩ SensorLoad Resistance (I ₀₀₇)±0.01Ω/Ω; 10kΩ SensorOutput RangeSee Ordering InformationLoad Resistance (I ₀₀₇)Sensor ContinuousCurrent LimitContinuousTransientContinuousShort to GroundContinuousTransientStoVDC maxCMV, Ioput to Output, Input to Power1600D maxContinuous50VDC maxContinuous50VDC maxCMR (50Hz or 60Hz)±0.004Ω/°C; 1000, 5000, 1kΩ SensorAdjustability±0.014Ω/C; 1000, 5000, 1kΩ SensorInput Offset±0.004Ω/°C; 1000, 5000, 1kΩ SensorStability±0.014Ω/°C; 1000, 5000, 1kΩ SensorInput Offset±0.004Ω/°C; 1000, 5000, 1kΩ SensorStability±0.004Ω/°C; 1000, 5000, 1kΩ SensorInput Offset±0.004Ω/°C; 1000, 5000, 1kΩ SensorStability±0.004Ω/°C; 1000, 5000, 1kΩ SensorInput Offset±0.004Ω/°C; 1000, 5000, 1kΩ SensorStability±0.004Ω/°C; 1000, 5000, 1kΩ SensorInput Offset±0.004Ω/°C; 1000, 5000, 1kΩ SensorNRSdadbat 60Hz, 80dB at 50HzResponse Time, 90% Span3HzOpen input ResponseHNHNUpscaleNon-deterministicDownscalePower Supply25mA (I ₀₀₇)Voltage2.95° x 0.89° x 4.13°(h)(w)(d) <t< th=""><th>Module</th><th>DSCA36</th></t<>	Module	DSCA36
Continuous Transient240Vrms max ANSI/IEEE C37.90.1Sensor Excitation Current260µX; 100Q, 500Q, 1KQ Sensor 65µX; 10KQ sensor ±0.011//2; 100Q, 500Q, 1KQ Sensor ±0.012//2; 10KQ sensorLead Resistance Effect±0.011//2; 100Q, 500Q, 1KQ Sensor ±0.012//2; 10KQ sensorOutput Range Load Resistance (I_0ur)See Ordering Information 600Q max 8mA (V_our), 30mA(I_0ur)Output Protection Short to Ground TransientSee Ordering Information 600Q max 8mA (V_our), 30mA(I_0ur)CMV, Input to Output, Input to Power Continuous TransientSoutput Soutput 1500Vrms max ANSI/IEEE C37.90.1CMV, Output to Power Continuous50VDC max 160dBAccuracy(i) Adjustability Input Offset±0.03% ±0.01% ±0.01% ±0.01% ±0.01% ±0.01%'C (Iour) ±0.01%'C (Iour) ±60ppm/*C (V_our), ±20ppm/*C (I_our) ±60ppm/*C (V_our), ±20ppm/*C (I_our) ±60ppm/*C (I_our) ±0.001%/%Bandwidth, -3dB NMR Response Time, 90% Span Open Input Response +IN +EXC3Hz SodB at 60Hz, 80dB at 50Hz 20MB at 50Hz <b< td=""><td>Input Range Limits Input Protection</td><td>0Ω to $10k\Omega$</td></b<>	Input Range Limits Input Protection	0Ω to $10k\Omega$
Transion260µ3; 1000, 5000, 1kΩ SensorLead Resistance Effect200µ3; 1000, 5000, 1kΩ SensorUtput Range±0.01Ω/Ω; 1000, 5000, 1kΩ SensorLoad Resistance (I _{0ur})±0.01Ω/Ω; 1000, 5000, 1kΩ SensorOutput RangeSee Ordering InformationLoad Resistance (I _{0ur})Sensor ±0.02Ω/Ω; 10kΩ SensorOutput ProtectionShort to GroundTransientContinuousCMV, Iuput to Output, Input to Power ContinuousSoUDC maxContinuousSOVDC maxCMK (50Hz or 60Hz)±0.014/2; 10kΩ SensorAccuracy(I)±0.03%Conformity±0.014/2; 10kΩ SensorAdjustability±0.004Ω/°C; 10kΩ SensorInput Offset±0.004Ω/°C; 10kΩ SensorGain±0.004Ω/°C; 10kΩ SensorOutput Offset±0.010/°C; 10kΩ SensorGain±0.004Ω/°C; 10kΩ SensorUtput Noise, 100kHz Bandwidth3HzBandwidth, -3dB3HzNMR85dB at 60Hz, 80dB at 50HzResponse Time, 90% SpanSpanOpen Input Response15 to 30VDC25mA (V _{our}), 55mA (I _{our})±0.001%/%Voltage25mA (V _{our}), 55mA (I _{our})Current2.95" x 0.89" x 4.13"Non-deterministic2.95" x 0.89" x 4.13"Power SupplyVoltage(h)(w)(d)2.95" x 0.89" x 4.13"MountingDIN EN 50022 -35x.75 or -35x.15 railEnvironmentalOperating Temperature RangeShot to Holoc-64ISM, Group 1RefPerformance A ±0.5% Span Error	Continuous Transient	240Vrms max ANSI/IEEE C37 90 1
Lead Resistance Effect50µA, 10kΩ Sensor ±0.010Q, 10Q, 5000, 10kΩ Sensor ±0.02µQ, 10kΩ Sensor ±0.02µQ, 10kΩ Sensor ±0.02µQ, 10kΩ Sensor ±0.02µQ, 10kΩ Sensor ±0.02µQ, 10kΩ Sensor 	Sensor Excitation Current	260μA; 100Ω, 500Ω, 1kΩ Sensor
Output Range Load Resistance (Iourn) Current Limit Output Protection Short to Ground TransientSee Ordering Information 6002 max 8mA (Vourn), 30mA(Iour)Current Limit Output Protection Short to Ground TransientContinuous ANSI/IEEE C37.90.1CMV. Input to Output, Input to Power Continuous TransientSouth Continuous 1500Vrms max 160dBCMV. Output to Power ContinuousSOVDC max 160dBCMV. Output to Power Continuous50VDC max 160dBAccuracy(1) Adjustability Input Offset±0.03% ±0.01% ±0.01% ±0.01%Output Offset Gain Output Noise, 100kHz Bandwidth±0.04Q/°C; 100Q, 500Q, 1kQ Sensor ±0.01Q/°C; 100Q, 500Q, 1kQ Sensor ±0.0001%/% workingPower Supply Voltage Current <td>Lead Resistance Effect</td> <td>55μΑ; 10kΩ Sensor ±0.01Ω/Ω; 100Ω, 500Ω, 1kΩ Sensor ±0.02Ω/Ω; 10kΩ Sensor</td>	Lead Resistance Effect	55μΑ; 10kΩ Sensor ±0.01Ω/Ω; 100Ω, 500Ω, 1kΩ Sensor ±0.02Ω/Ω; 10kΩ Sensor
Current Limit Output Protection Short to Ground Transient8mA (V_out), 30mA(l_out)Output Protection Short to Ground Transient8mA (V_out), 30mA(l_out)CMV, Input to Output, Input to Power Continuous Transient1500Vrms max ANSI/IEEE C37.90.1CMV, Output to Power Continuous50VDC maxCMK (50Hz or 60Hz)±0.03% 	Output Range	See Ordering Information 6000 max
ContinuousContinuousTransientContinuousCMV, Input to Output, Input to Power Continuous1500V/ms maxCMV, Output to Power Continuous50VDC maxCMR (50Hz or 60Hz)160dBAccuracy(1)±0.03%Conformity±0.03%Adjustability±0.00, 5000, 1kQ SensorStability±0.00, 5000, 1kQ SensorInput Offset±0.004Q/°C; 100Q, 5000, 1kQ SensorOutput Offset±60pm/°COutput Noise, 100kHz Bandwidth3HzBandwidth, -3dB3HzNMR85dB at 60Hz, 80dB at 50HzResponse Time, 90% Span Open Input Response165msOpen Input ResponseUpscale+INUpscale-INLougeYoltage15 to 30VDCCurrent2.95" x 0.89" x 4.13"(h)(w)(d)DIN EN 50022 -35x7.5 or -35x15 railPover Supply 	Current Limit	8mA (V _{out}), 30mA(I _{out})
TransientANSI/IEE C37.90.1CMV, Input to Output, Input to Power Continuous1500Vrms maxTransient160dBCMV, Output to Power Continuous50VDC maxCMR (50Hz or 60Hz)±0.03% ±0.01%Accuracy(1)±0.03% ±0.01%Adjustability±0.004Q/°C; 100Q, 500Q, 1kQ Sensor ±0.01Q/°C; 10kQ Sensor ±0.004Q/°C; 10kQ Sensor ±0.001Q/°C; 10kQ Sensor ±0.001% SensitivityPower Supply Voltage Current Sensitivity Protection Reverse Polarity Transient3Hz Storage Temperature Range Carse A lisk (roup 1 Class A Ism, Group 1 Class A Ism, Group 1 Class A Ism, Group 1 Neromatice Performance A ±0.5% Span Error	Short to Ground	
Continuous15000/ms maxTransientANSI/IEEE C37.90.1CMV, Output to Power50VDC maxContinuous50VDC maxCMR (50Hz or 60Hz)±0.03%Accuracy ⁽¹⁾ ±0.03%Adjustability±5% Zero and SpanStability±0.004Ω/°C; 100Ω, 500Ω, 1kΩ SensorInput Offset±0.01Ω/°C; 10kΩ SensorOutput Offset±0.01Ω/°C; 10kΩ SensorOutput Offset±0.004Ω/°C; 10kΩ SensorOutput Noise, 100kHz Bandwidth3HzBandwidth, -3dB3HzNMR85dB at 60Hz, 80dB at 50HzResponse Time, 90% Span165msOpen Input Response165msOutput Voltage15 to 30VDCCurrent25mA (V _{our}), 55mA (I _{our})Sensitivity25mA (V _{our}), 55mA (I _{our})Protection2.95" x 0.89" x 4.13"Reverse PolarityContinuousTransient2.95" x 0.89" x 4.13"MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmentalOperating Temperature RangeAnsult Environmental-40°C to +80°COperating Temperature Range-40°C to +80°CStorage Temperature Range-40°C to +80°CRelative HumidityISM, Group 1EnvironmentalConductedImmunity EN61000-6-2ISM, Group 1RFPerformance A ±0.5% Span Error	CMV, Input to Output, Input to Power	ANSI/IEEE C37.90.1
CMV, Output to Power Continuous50VDC max 160dBAccuracy(1)±0.03% ±0.01%Adjustability±0.01% ±0.01%Adjustability±0.01% ±0.01%Input Offset±0.004Ω/°C; 100Ω, 500Ω, 1kΩ Sensor ±0.01Ω/°C; 10kΩ SensorOutput Offset±0.004Ω/°C; 100Ω, 500Ω, 1kΩ Sensor ±0.01Ω/°C; 10kΩ SensorOutput Offset±0.004Ω/°C; 100Ω, 500Ω, 1kΩ Sensor ±0.01Ω/°C; 10kΩ SensorGain±0.01Ω/°C; 100Ω, 500Ω, 1kΩ Sensor ±0.01Ω/°C; 10kΩ SensorOutput Offset±0.004Ω/°C; 100Ω, 500Ω, 1kΩ Sensor ±0.01Ω/°C; 10kΩ SensorBandwidth, -3dB3HzNMR85dB at 60Hz, 80dB at 50HzResponse Time, 90% Span Open Input ResponseUpscaleNon-deterministic +EXCUpscaleNon-deterministic ±0.0001%/%UpscaleVoltage Current Sensitivity Protection Reverse Polarity Transient15 to 30VDC 25mA (I _{our})MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmental Operating Temperature Range Storage Temperature Range Relative Humidity-40°C to +80°C -40°C to +80°C	Continuous Transient	ANSI/IEEE C37.90.1
CMR (50Hz or 60Hz)160dBAccuracy(1)±0.03%Conformity±0.01%Adjustability±5% Zero and SpanStabilityInput OffsetInput Offset±0.004Ω/°C; 100Ω, 500Ω, 1kΩ SensorOutput Offset±0.001Ω/°C; 10kΩ SensorGain±0.01Ω/°C; 10kΩ SensorOutput Noise, 100kHz Bandwidth±60ppm/°CBandwidth, -3dB3HzNMR85dB at 60Hz, 80dB at 50HzResponse Time, 90% Span3HzOpen Input Response165ms+INUpscale-INLupscaleVoltage25mA (V _{our}), 55mA (I _{our})±0.001%/%25mA (V _{our}), 55mA (I _{our})ProtectionContinuousReverse PolarityContinuousTransient2.95" x 0.89" x 4.13"(h)(w)(d)DIN EN 50022 -35x7.5 or -35x15 railEnvironmentalOperating Temperature RangeAdicated, ConductedISM, Group 1Rediated, ConductedISM, Group 1RefPerformance A ±0.5% Span Error	CMV, Output to Power Continuous	50VDC max
Accuracy(1) $\pm 0.03\%$ $\pm 0.01\%$ Adjustability $\pm 5\%$ Zero and SpanStabilityInput OffsetInput Offset $\pm 0.004\Omega/^{\circ}C; 100\Omega, 500\Omega, 1k\Omega Sensor\pm 0.01\Omega'^{\circ}C; 10k\Omega SensorOutput Offset\pm 0.004\Omega/^{\circ}C; 100\Omega, 500\Omega, 1k\Omega Sensor\pm 0.01\Omega'^{\circ}C; 10k\Omega SensorGain\pm 0.014\Omega'^{\circ}C; 10k\Omega SensorOutput Noise, 100kHz Bandwidth\pm 60ppm/^{\circ}C250\muVrms (V_{out}), \pm 20ppm/^{\circ}C (Iout)Bandwidth, -3dBNMR3Hz85dB at 60Hz, 80dB at 50Hz165msPoen Input Response165ms+INUpscaleNon-deterministic1N+EXCDownscalePower SupplyVoltage15 to 30VDC25mA (V_{out}), 55mA (I_{out})\pm 0.0001\%/\%ProtectionReverse PolarityTransient2.95" \times 0.89" \times 4.13"(75mm \times 22.5mm \times 105mm)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmentalOperating Temperature RangeRelative Humidity-40^{\circ}C to +80^{\circ}C-40^{\circ}C to +8$	CMR (50Hz or 60Hz)	160dB
Adjustability Stability±5% Zero and SpanStability Input Offset±0.004Ω/°C; 100Ω, 500Ω, 1kΩ Sensor ±0.01Ω/°C; 10kΩ Sensor ±0.01Ω/°C; 10kΩ Sensor ±0.01Ω/°C; 10kΩ Sensor ±60ppm/°C 250µVrms (V _{our}), ±20ppm/°C (I _{our})Bandwidth, -3dB NMR3Hz 85dB at 60Hz, 80dB at 50Hz 165msBandwidth, -3dB NMR3Hz 85dB at 60Hz, 80dB at 50Hz 165msPoen Input Response +IN +EXCUpscale Non-deterministic DownscalePower Supply Voltage Current Sensitivity Protection Reverse Polarity Transient15 to 30VDC 25mA (I _{our}), 55mA (I _{our}) ±0.001%/%Mechanical Dimensions (h)(w)(d)2.95" x 0.89" x 4.13" (75mm x 22.5mm x 105mm)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmental Operating Temperature Range Relative Humidity-40°C to +80°C 0 to 95% Noncondensing ISM, Group 1 Class A Immunity EN61000-6-2RFPerformance A ±0.5% Span Error	Accuracy ⁽¹⁾ Conformity	±0.03% ±0.01%
Input Offset±0.004Ω/°C; 100Ω, 500Ω, 1kΩ SensorOutput Offset±0.01Ω/°C; 10kΩ SensorGain±0.01Ω/°C; 10kΩ SensorOutput Noise, 100kHz Bandwidth±60ppm/°CBandwidth, -3dB3HzNMR85dB at 60Hz, 80dB at 50HzResponse Time, 90% Span05msOpen Input Response165msVoltageUpscale-INUpscaleNon-deterministic+EXCDownscalePower Supply15 to 30VDCVoltage25mA (V _{out}), 55mA (I _{out})genesitivityContinuousProtection2.95" x 0.89" x 4.13"Reverse Polarity TransientContinuousMountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmental Operating Temperature Range Relative Humidity-40°C to +80°C 0 to 95% NoncondensingIsmissions EN61000-6-4 Radiated, Conducted RFISM, Group 1 	Adjustability Stability	±5% Zero and Span
Output Offset Gain Output Noise, 100kHz Bandwidth $\pm 6ppm/^{\circ}C (V_{out}), \pm 20ppm/^{\circ}C (I_{out})$ Bandwidth, -3dB NMR $3Hz$ 	Input Offset	±0.004Ω/°C; 100Ω, 500Ω, 1kΩ Sensor +0.010/°C: 10kΩ Sensor
Gain Output Noise, 100kHz Bandwidth $\pm 60ppm/°C$ $250\muVrms (V_{out}), 1µArms (I_{out})Bandwidth, -3dBNMR3Hz85dB at 60Hz, 80dB at 50Hz85dB at 60Hz, 80dB at 50HzResponse Time, 90% SpanOpen Input Response+IN-IN+EXCUpscaleNon-deterministicDownscalePower SupplyVoltageCurrentSensitivityProtectionReverse PolarityTransient15 to 30VDC25mA (V_{out}), 55mA (I_{out})\pm 0.0001\%/\%Mechanical Dimensions(h)(w)(d)2.95" x 0.89" x 4.13"(75mm x 22.5mm x 105mm)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmentalOperating Temperature RangeStorage Temperature RangeRelative Humidity-40°C to +80°C-40°C to +80°C0 to 95% NoncondensingISM, Group 1Class AImmunity EN61000-6-2RF$	Output Offset	± 6 ppm/°C (V _{out}), ± 20 ppm/°C (I _{out})
Bandwidth, -3dB NMR3HzNMR Response Time, 90% Span Open Input Response +IN +IN85dB at 60Hz, 80dB at 50HzOpen Input Response +IN +EXCUpscale Non-deterministic DownscalePower Supply Voltage Current Sensitivity Protection Reverse Polarity Transient15 to 30VDC 25mA (V _{out}), 55mA (I _{out}) ±0.0001%/%Mechanical Dimensions (h)(w)(d)2.95" x 0.89" x 4.13" (75mm x 22.5mm x 105mm)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmental Operating Temperature Range Storage Temperature Range Relative Humidity-40°C to +80°C -40°C to +80°C 0 to 95% Noncondensing ISM, Group 1 Class A Immunity EN61000-6-2 RF	Output Noise, 100kHz Bandwidth	±60ppm/°C 250μVrms (V _{ουτ}), 1μArms (I _{ουτ})
NMIRBSDB at 60H2, 80B at 50H2Response Time, 90% Span165msOpen Input ResponseUpscale+INUpscale-INNon-deterministic+EXCDownscalePower Supply15 to 30VDCVoltage15 to 30VDCCurrent25mA (V _{out}), 55mA (I _{out})Sensitivity±0.0001%/%ProtectionContinuousReverse PolarityContinuousTransient2.95" x 0.89" x 4.13"MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmentalOperating Temperature RangeOperating Temperature Range-40°C to +80°CStorage Temperature Range-40°C to +80°CRelative Humidity0 to 95% NoncondensingEmissions EN61000-6-4ISM, Group 1RFPerformance A ±0.5% Span Error	Bandwidth, –3dB	
Open Input ResponseUpscale+INNon-deterministic-INDownscaleNon-deterministicDownscalePower Supply15 to 30VDCVoltage25mA (V _{OUT}), 55mA (I _{OUT})Current25mA (V _{OUT}), 55mA (I _{OUT})Sensitivity±0.001%/%ProtectionContinuousReverse PolarityContinuousTransient2.95" x 0.89" x 4.13"Mechanical Dimensions2.95" x 0.89" x 4.13"(h)(w)(d)(75mm x 22.5mm x 105mm)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmentalOperating Temperature RangeOperating Temperature Range-40°C to +80°CStorage Temperature Range-40°C to +80°CStorage Temperature Range-40°C to +80°CRelative Humidity0 to 95% NoncondensingEmissions EN61000-6-4ISM, Group 1RFPerformance A ±0.5% Span Error	Response Time, 90% Span	165ms
-IN +EXCNon-deterministic DownscalePower Supply Voltage 	Open Input Response +IN	Upscale
Power Supply Voltage Current Sensitivity 	-IN +EXC	Non-deterministic Downscale
Voltage15 to 30/DCCurrent25mA (V _{ουτ}), 55mA (I _{ουτ})Sensitivity±0.0001%/%ProtectionContinuousReverse PolarityContinuousTransientANSI/IEEE C37.90.1Mechanical Dimensions2.95" x 0.89" x 4.13"(h)(w)(d)(75mm x 22.5mm x 105mm)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmentalOperating Temperature RangeOperating Temperature Range-40°C to +80°CStorage Temperature Range-40°C to +80°CRelative Humidity0 to 95% NoncondensingEmissions EN61000-6-4ISM, Group 1RefISM, Group 1Performance A ±0.5% Span Error	Power Supply	
Sensitivity±0.0001%/%ProtectionContinuousReverse PolarityContinuousTransientANSI/IEEE C37.90.1Mechanical Dimensions2.95" x 0.89" x 4.13"(h)(w)(d)(75mm x 22.5mm x 105mm)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmentalOperating Temperature RangeOperating Temperature Range-40°C to +80°CStorage Temperature Range-40°C to +80°CRelative Humidity0 to 95% NoncondensingEmissions EN61000-6-4ISM, Group 1Radiated, ConductedClass AImmunity EN61000-6-2ISM, Group 1RFPerformance A ±0.5% Span Error	Current	$25 \text{mA} (V_{\text{out}}), 55 \text{mA} (I_{\text{out}})$
Reverse Polarity TransientContinuous ANSI/IEEE C37.90.1Mechanical Dimensions (h)(w)(d)2.95" x 0.89" x 4.13" (75mm x 22.5mm x 105mm)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmental Operating Temperature Range Storage Temperature Range 	Sensitivity Protection	±0.0001%/%
Mechanical Dimensions (h)(w)(d)2.95" x 0.89" x 4.13" (75mm x 22.5mm x 105mm)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmental Operating Temperature Range 	Reverse Polarity Transient	Continuous ANSI/IEEE C37.90.1
(I)(w)(d)(I)(w)(d)MountingDIN EN 50022 -35x7.5 or -35x15 railEnvironmental Operating Temperature Range Storage Temperature Range Relative Humidity-40°C to +80°C -40°C to +80°C 0 to 95% NoncondensingEmissions EN61000-6-4 Radiated, ConductedISM, Group 1 	Mechanical Dimensions	2.95" x 0.89" x 4.13" (75mm x 22 5mm x 105mm)
EnvironmentalOperating Temperature RangeStorage Temperature RangeRelative HumidityEmissions EN61000-6-4Radiated, ConductedImmunity EN61000-6-2RFPerformance A ±0.5%	Mounting	DIN EN 50022 -35x7.5 or -35x15 rail
Operating temperature Range-40°C to +80°CStorage Temperature Range-40°C to +80°CRelative Humidity0 to 95% NoncondensingEmissions EN61000-6-4ISM, Group 1Radiated, ConductedClass AImmunity EN61000-6-2ISM, Group 1RFPerformance A ±0.5% Span Error	Environmental	
Relative Humidity0 to 95% NoncondensingEmissions EN61000-6-4ISM, Group 1Radiated, ConductedClass AImmunity EN61000-6-2ISM, Group 1RFPerformance A ±0.5% Span Error	Storage Temperature Range	-40°C to +80°C
Radiated, ConductedClass AImmunity EN61000-6-2ISM, Group 1RFPerformance A ±0.5% Span Error	Relative Humidity Emissions EN61000-6-4	0 to 95% Noncondensing ISM, Group 1
RF Performance A ±0.5% Span Error	Radiated, Conducted	Class A ISM Group 1
ECD EET Defermence D	RF ECD EET	Performance A ±0.5% Span Error

NOTES :

*Contact factory or your local Dataforth sales office for maximum values. (1) Includes conformity, hysteresis and repeatability.

Ordering Information

Model	Input Range	Output Range [†]
DSCA36-01	0 to 100Ω	2, 3, 4
DSCA36-02	0 to 500Ω	2, 3, 4
DSCA36-03	0 to 1kΩ	2, 3, 4
DSCA36-04	0 to 10kΩ	2, 3, 4

[†]Output Ranges Available

Output Range	Part No. Suffix	Example
110V to +10V	NONE	NA
2. 0V to +10V	NONE	DSCA36-01
3. 4 to 20mA	С	DSCA36-01C
4. 0 to 20mA	E	DSCA36-01E

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.