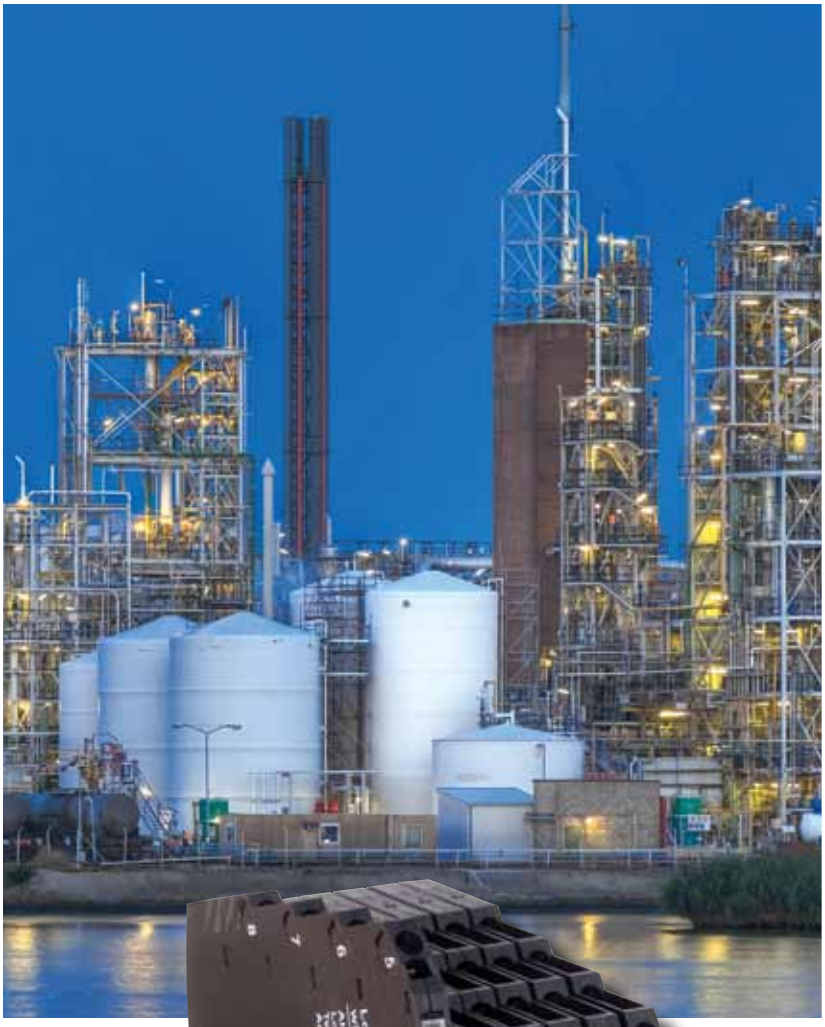
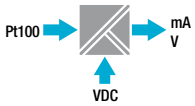
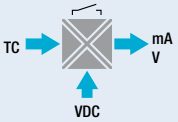
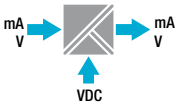
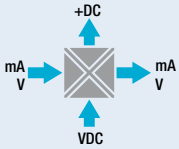
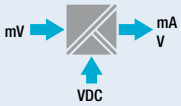
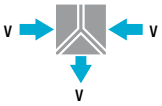
DATAFORTH®



DATAFORTH®

Compact signal converters
6.2mm ultra-slim case

	DSCP55	DSCP61	DSCP62	DSCP63	DSCP64
					
Function	**Pt100, Ni100/loop-powered converter**	**Pt100-to-DC current/voltage converter**	**Thermocouple-to-DC current/ voltage converter with relay output**	**DC voltage/current converter**	**DC voltage/current converter with transducer power supply**
Functional diagram					
General data					
Channels	1 input, 1 output	1 input, 1 output	1 input, 2 outputs	1 input, 1 output	1 input, 1 output
Accuracy (max)	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%
Thermal drift	<100ppm/°K	<100ppm/°K	<120ppm/°K	<120ppm/°K	<120ppm/°K
LED	• Internal fault • Dip-switch error • Connection error	• Internal fault • Dip-switch error • Connection error	• Internal fault • Dip-switch error • Connection error	• Internal fault • Input/output out of range	• Internal fault • Dip-switch error • Input/output out of range
Power supply	Loop powered (5 to 30VDC)	19.2 to 30VDC	19.2 to 30VDC	19.2 to 30VDC	19.2 to 30VDC
Isolation	——	1.5kV (50 or 60Hz,1 min)	1.5kV (50 or 60Hz,1 min)	1.5kV (50 or 60Hz,1 min)	1.5kV (50 or 60Hz,1 min)
Special functions	• RTD type/connection • Programmable fault and cut-off • Filter • Signal inversion	• Programmable fault and cut-off • Filter	• Programmable fault and cut-off • Filter • Settable rejection 50-60Hz	• Square root extraction • Standard tank linearization • Signal inversion • Programmable cut-off	• Square root extraction • Standard tank linearization • Signal inversion • Programmable cut-off • Transducer power supply 17 to 21V, current 25mA (max)
Input data					
Type	**Pt100** • EN 60751 • Range: –200°C to +650°C • Minimum span: 20°C • Connection technique: 2-, 3-, 4-wire **Ni100** • Range: –60°C to +250°C • Minimum span: 20°C • Connection: 2-, 3-, 4-wire	**Pt100** • EN 60751 • Range: –150°C to +650°C • Minimum span: 50°C • Power on transmitter: 900µA • Connection: 2-, 3-, 4-wire • Conductor resistance: 20Ω (max)	**Thermocouple** • Type: J, K, E, N, S, R, B, T (ITS-90 standard) • Minimum span: 100°C • Impedance: 10MΩ • Cold junction	**Voltage** • Range: 0 to 10, 2 to 10, 0 to 5, 1 to 5, 0 to 15, 0 to 30V • Impedance: 110kΩ (10V), 325kΩ (30V) **Current** • Range: 0 to 20, 4 to 20mA • Impedance: 35Ω	**Voltage** • Range: 0 to 10, 2 to 10, 0 to 5, 1 to 5V • Impedance: 110kΩ **Current** • Range: 0 to 20, 4 to 20mA • Impedance: 35Ω
Input (max)		32V (max)		30V or 50V (max)	32V (max)
Output data					
Type	**Current** • Range: 4 to 20, 20 to 4mA (2-wire) Load resistance: 1kΩ (nominal), 1.2kΩ (max) • Current: 30mA (max)	**Voltage** • Range: 0 to 10, 10 to 0, 0 to 5, 1 to 5V • Voltage: over-range 10.25 V, or 10.5V (max) • Load resistance: 2kΩ (min) **Current** • Range: 4 to 20, 20 to 4, 0 to 20, 20 to 0mA • Current: over-range 20.5mA, or 21mA (max) • Load resistance: 500Ω (max)	**Voltage** • Range: 0 to 10, 10 to 0, 0 to 5, 1 to 5V • Load resistance: 2kΩ (min) **Current** • Range: 4 to 20, 20 to 4, 0 to 20, 20 to 0mA • Load resistance: 500Ω (max)	**Voltage** • Range: 0 to 10, 2 to 10, 0 to 5, 1 to 5V • Load resistance: 2kΩ (min) **Current** • Range: 4 to 20, 20 to 4, 0 to 20, 20 to 0mA • Load resistance: 500Ω (max) • Current: 25mA (max)	**Voltage** • Range: 0 to 10, 2 to 10, 0 to 5, 1 to 5V •Load resistance: 2kΩ (min) **Current** • Range: 4 to 20, 20 to 4, 0 to 20, 20 to 0mA • Load resistance: 500Ω (max) • Current: 25mA (max)
Static relay auxiliary output			• Nominal voltage: 24V AC/DC • Current: 60mA • Overvoltage protection: 50V • Settable alarm trip/hysteresis		
Response time (10-90%)	<220ms (without filter) <620ms (with filter)	<50ms (without filter) <200ms (with filter)	<25ms (without filter) <55ms (with filter)	<35ms (without filter) <74ms (with filter)	<35ms (without filter) <74ms (with filter)
D/A conversion Resolution	1µA (>14-bits)	14-bit	14-bit	14-bit	14-bit

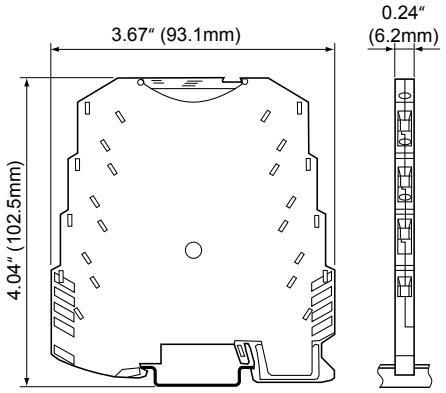
DSCP65	DSCP70
	
DC low voltage converter	**Power supply connection module for DIN rail power bus**
	
1 input, 1 output	2 inputs, 1 output
±0.1%	
<120ppm/°K	
• Internal fault • Input over-range	• Input 1 correct input V • Input 2 correct input V • Reversed inputs or AC
19.2 to 30VDC	
1.5kV (50 or 60Hz,1 min)	
• Programmable fault and cut-off • Filter • Settable rejection 50-60Hz	• Differential mode filter • Integrated protection against overvoltages • Connection with redundant power supplies
Voltage Programmable ranges: from ±25 to ±2000mV	**Power supply** • Provides connection of single or redundant external power supplies • Positive inputs need protection by an external fuse of recommmended sizing
50V (max)	
Voltage • Range: 0 to 10, 2 to 10, 0 to 5, 1 to 5V • Load resistance: 2kΩ (min) **Current** • Range: 4 to 20, 20 to 4, 0 to 20, 20 to 0mA • Load resistance: 500Ω (max) • Protection: 25mA	**Power supply** Max voltage drop: 300mV
<23ms (without filter) <51ms (with filter)	
14-bit	

General technical data

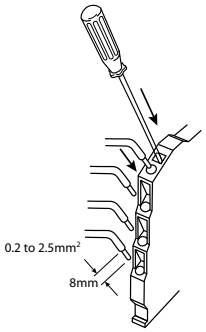
Power supply range*	19.2 to 30VDC
Bridge voltage supply	Bus connectors (Power-Bus) can be snapped onto 35mm DIN rail guide according to EN 60715
Wire section	0.2 to 2.5mm^2
Wire stripping	0.3 in (8mm)
Hot swapping	Yes
Max current consumption	21 to 25mA (24VDC)
Consumption without load at 25°C	7.5mA
Max power consumption	500mW
A/D conversion	14-bit
Rejection	50 or 60Hz (programmable)
Settings	Dip-switch
Filter	Settable
Dimensions	3.67 x 0.24 x 4.04 in (93.1 x 6.2 x 102.5mm)
Isolation	1.5kV (50 or 60Hz, 1 min)
Isolation technique	Digital (optocoupler)
Processing	Floating point 32-bit
Color	Black
Case material	PBT
Weight	1.6 oz (45g)
Operating temperature	–20°C to +65°C
Storage temperature	–40°C to +85°C
Humidity	10 to 90% noncondensing
Connection	Clamp terminals and/or bus
Protection degree	IP20

* Except for DSCP55 and DSCP70

Dimensions

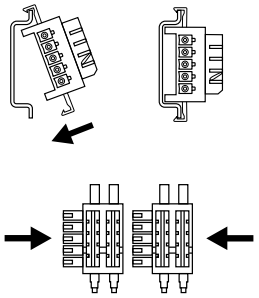


Cage clamp connection



Connection sequence requires stripping of cables, opening block spring with a screwdriver, and inserting the cable into the hole.

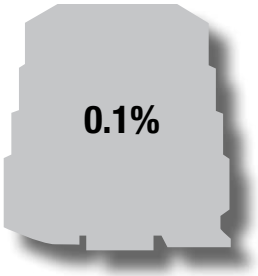
Power-Bus



Each expandable Power-Bus connector allows insertion of two modules. Insert Power-Bus connectors into DIN rail by attaching to upperside and rotating downward.

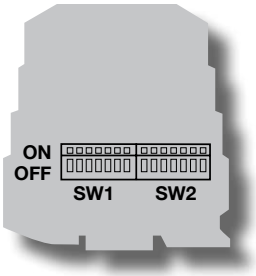
Feature/highlights

Accuracy



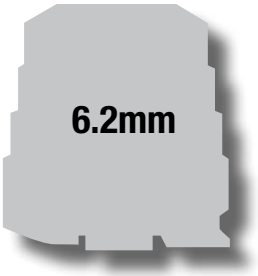
- 0.1% precision class
- Resolution 14-bit

Configuration



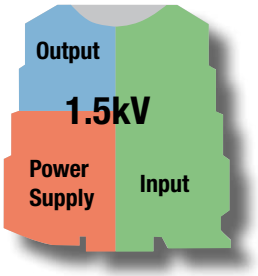
- Setup via Dip-switches

Dimensions



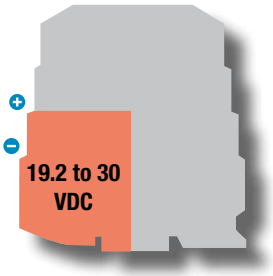
- Small dimensions
- 6.2mm width

Isolation



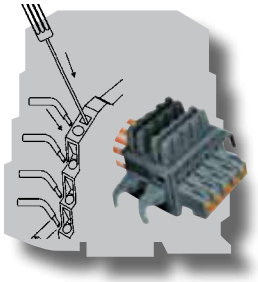
- Digital optocoupler
- 3-way isolation 1.5kVAC (50 or 60Hz, 1 min)
- Digital decoupling of input signal
- Protection circuit against output overcurrent

Power supply



- Connect to the spring cage terminal block or use expandable Power-Bus connectors and DSCP70

Connections



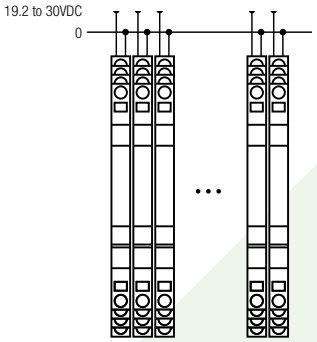
- Cage clamp connectors
- Expandable Power-Bus connector on DIN rail guide

Power supply techniques

The DSCP6x series of signal conditioners can be powered in three different ways. First, the 24VDC power supply can be connected directly to each signal conditioner. Second, power can be connected to one signal conditioner and, using the expandable Power-Bus connector, be distributed to a maximum of 16 adjacent modules. Third, using the DSCP70 Power Supply Connection Module and the expandable Power-Bus connector, power is distributed to a maximum of 75 modules. See diagrams to the right.

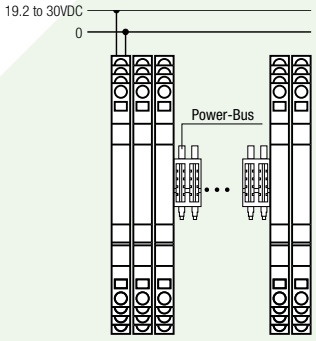
Conventional supply

Power supply on spring cage terminals

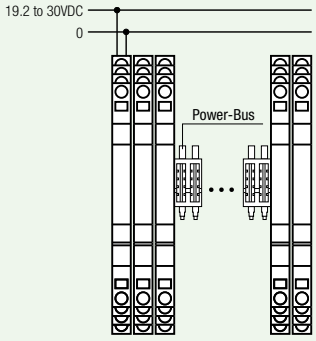


Expandable Power-Bus system

Distributed supply with two-slot Power-Bus connector (up to 16 modules)



Distributed supply with DSCP70 module and Power-Bus system (up to 75 modules)



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