DSCP70 Configuration Guide

Power Supply Connection Module for DIN Rail Power Bus

Description

Each DSCP70 Power Supply Connection Module permits the delivery of power to DSCP6x modules through DIN rail mounted power-bus connectors. An external power supply, or supplies for redundant operation, are connected to the terminals of the DSCP70. The DSCP70 then routes the power to the DIN rail power-bus, provides protection against power supply reversal, provides LED status indication of correct power, inverted power connection and presence of AC, and provides over-voltage protection.

Specifications

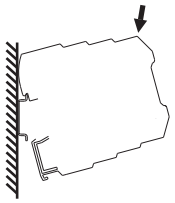
Typical at T_A=+25°C and +24VDC power

Module	DSCP70
Input	
Voltage	19.2 to 30VDC
Current Capacity	4A maximum per terminal
Protection	Each positive input must have an external fuse
Output	
Internal Voltage Drop	300mV
Current Capacity	One input = 1.6A parallel inputs 1 and 2 = 2A
Filter	Differential mode: 4.7mH and two 470nF per input
Power Consumption	5mA per input maximum
Environmental	
Operating Temp. Range	–20°C to +65°C
Storage Temp. Range	–40°C to +85°C
Relative Humidity	0 to 90%, Noncondensing
IP Protection	IP20
Emissions	EN61000-6-4
Immunity	EN61000-6-2
Mechanical Dimensions (w x h x d)	0.24" x 3.67" x 4.04" (6.2mm x 93.1mm x 102.5mm)
Housing	Terminal housing for mounting on 35mm DIN 46277
Connections	Spring cage clamp
Weight	1.6 ounces (46g)

Installation rules

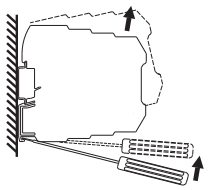
This module is designed for assembly on a DIN 46277 rail. Assembly in a vertical position is recommended to increase the module's ventilation. Be sure that no raceways or other objects that compromise aeration are positioned in the vicinity, and do not position the module above equipment that generates heat. We recommend positioning the module in the lower part of the control panel or container compartment.

Inserting module in DIN rail



1. Attach module in upper part of rail.
2. Press module downward.

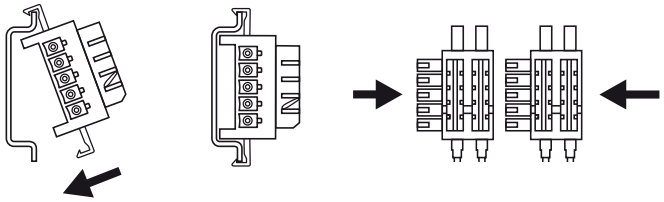
Extracting module from DIN rail



1. Apply leverage using a screwdriver (as shown in figure).
2. Rotate module upward.

Using the Power-Bus connector

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



NOTE:
The Power-Bus must be inserted with protruding terminals on the left (as shown in figure above); otherwise the modules are turned upside down.

Never connect power supply directly to the bus connector on the DIN rail. Never tap power from the bus connector either directly or by using module terminals.

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Fuse sizes

The following tables indicate fuse sizes necessary to protect the inputs, as determined by the number of modules the DSCP70 will power.

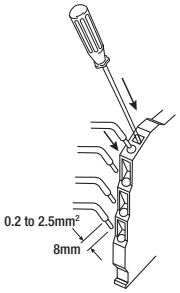
The table below shows the recommended size per type of fuse for battery-powered systems (21 to 30VDC) in which surge is not expected.

Number of modules	Rapid type	Average type	Delayed type
2	—	100mA	100mA
5	—	200mA	200mA
10	—	400mA	400mA
20	750mA	630mA	630mA
35	1250mA	1250mA	—
50	1600mA	1600mA	—
70	2500mA	—	—

The table below shows the recommended size for systems in which a surge is expected with 21 to 30VDC voltage.

Number of modules	Rapid type	Average type	Delayed type
2	—	—	300mA
5	—	—	300mA
10	—	—	300mA
20	—	600mA	500mA
35	1250mA	1A	—
50	1500mA	1250mA	—
70	2A	1600mA	—
100	2500mA	—	—

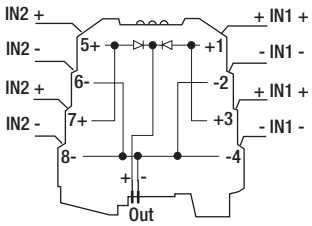
Electrical connections



The module is designed for spring cage clamp electrical connections.

1. Strip cables by 0.8mm.
2. Insert screwdriver in the square hole and press until the cable lock spring opens.
3. Insert cable in the round hole.
4. Remove screwdriver and ensure cable is tightly fastened in the terminal.

Internal wiring



Input

The module has two inputs (19.2 to 30VDC) with shared negative terminal.

Input 1
Terminal 1 and Terminal 3: +
Terminal 2 and Terminal 4: –

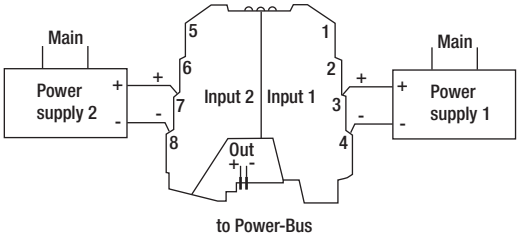
Input 2
Terminal 5 and Terminal 7: +
Terminal 6 and Terminal 8: –

Terminals 2, 4, 6, and 8 are connected together.

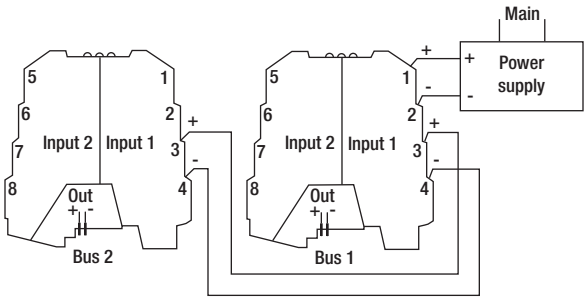
Output

The module provides a bus output equal to the input voltage minus the internal voltage drop. The negative terminal is shared by input terminals 2, 4, 6, and 8. The module does not permit tapping current from the bus to the input terminals.

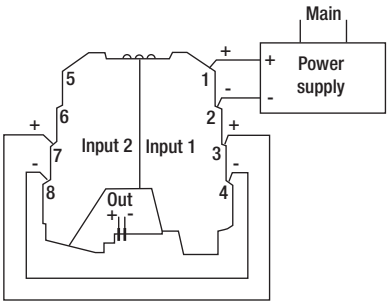
Example of connection with redundant power supply



Example of connection to more than one bus



Example of connection with inputs connected in parallel: 2 A output



LED indications on front of module

LED	Meaning
Green LED 1	When illuminated, this LED signals the presence of sufficient voltage for the first input. The illumination threshold is: 19.2V, ± 0.3V.
Green LED 2	When illuminated, this LED signals the presence of sufficient voltage for a second input. The illumination threshold is: 19.2V, ± 0.3V.
Red LED	When illuminated, this LED signals erroneous input polarity or alternating current. The illumination threshold is: 2V.

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