

# DST1 Series

## Distributed Safety Terminals That Reduce Wiring.

- Lineup includes four models to accommodate various I/O types and number of I/O points.
- Monitor the safety system from Standard Controllers across the network.
- EN954-1 (Cat.4), ISO13849-1 (PLe), and IEC 61508 SIL3 certification.
- The DST1-XD0808SL-1 also supports logic operation functions for high-speed processing in applications requiring partial stopping of the safety system.



## Ordering Information

### List of Models

Name	No. of I/O points	Model
Safety I/O Terminals	Safety inputs: 12, test outputs: 4	DST1-ID12SL-1
	Safety inputs: 8, safety outputs (semiconductor): 8, test outputs: 4	DST1-MD16SL-1
		DST1-XD0808SL-1 *
	Safety inputs: 4, safety outputs (relay): 4, test outputs: 4	DST1-MRD08SL-1

**Note:** The standard DS1T Safety I/O Terminals are equipped with spring-cage terminal blocks, but screw terminal blocks are available if desired, e.g., to replace previous terminals. Refer to DeviceNet Safety Accessories.

\*Use the Network Configurator Ver. 2.0 or later to make DST1-XD0808SL-1 settings.

## Specifications

### Certified Standards

Certification body	Standard
TÜV Rheinland	EN ISO 13849-1 EN ISO 13849-2 IEC 61508 EN 62061 EN 61131-2 IEC 61326-3-1
UL	UL508 ISA12.12.01 (excluding the DST1-MRD08SL-1) UL1998 IEC 61508-3

### Specifications

Item	Model	DST1-ID12SL-1	DST1-MD16SL-1	DST1-MRD08SL-1	DST1-XD0808SL-1
Communications power supply voltage		11 to 25 VDC supplied via communications connector			
I/O power supply voltage		20.4 to 26.4 VDC (24 VDC -15%/+10%)			
Current consumption	Communications power supply	24 VDC 100 mA	24 VDC 110 mA	24 VDC 100 mA	24 VDC 110 mA
	I/O power supply *	24 VDC 70 mA	24 VDC 50 mA (Input) 130 mA (Output)	24 VDC 80 mA (Input) 130 mA (Output)	24 VDC 50 mA (Input) 130 mA (Output)
Overvoltage category		II			
Noise immunity		Conforms to IEC61131-2.			
Vibration resistance		10 to 57 Hz: 0.35-mm single amplitude, 57 to 150 Hz: 50 m/s <sup>2</sup>			
Shock resistance		150 m/s <sup>2</sup> , 11 ms		100 m/s <sup>2</sup> , 11 ms	150 m/s <sup>2</sup> , 11 ms
Mounting method		35-mm DIN Track			
Ambient operating temperature		-10 to 55°C			
Ambient operating humidity		10% to 95% (with no condensation)		10% to 85% (with no condensation)	10% to 95% (with no condensation)
Ambient storage temperature		-40 to 70°C			
Degree of protection		IP20			
Weight		420 g		600 g	420 g

\*Not including power consumption for external devices.

### Safety Input Specifications

(Common with the DST1 Series)

Input type	Sinking inputs (PNP)
ON voltage	11 VDC min.
OFF voltage	5 VDC max.
OFF current	1 mA max.
Input current	6 mA

### Safety Output Specifications (Semiconductor output)

(Common with the DST1-MD16SL-1/XD0808SL-1)

Output type	Sourcing outputs (PNP)
Rated output current	0.5 A max./output
ON residual voltage	1.2 V max.
Leakage current	0.1 mA max.

### Test Output Specifications

(Common with the DST1 Series)

Output type	Sourcing outputs (PNP)
Rated output current	0.7 A max./output
ON residual voltage	1.2 V max.
Leakage current	0.1 mA max.

### Safety Output Specifications (Relay Output)

(DST1-MRD08SL-1)

Applicable relays	G7SA-2A2B, EN50205 Class A	
Failure rate P level * (Reference value)	5 VDC, 1 mA	
Rated load (resistive)	2 A at 240 VAC, 2 A at 30 VDC	
Durability	Mechanical	5,000,000 operations min. (at 7,200 operations/h)
	Electrical	100,000 operations min. (at 1,800 operations/h with a resistive load)

\*This value is equivalent to 300 operations/minute.

### CIP Safety on DeviceNet Communications

Safety Slave communications	Max. 4 connections (Max. 2 connections for the DST1-XD0808SL-1)
-----------------------------	---

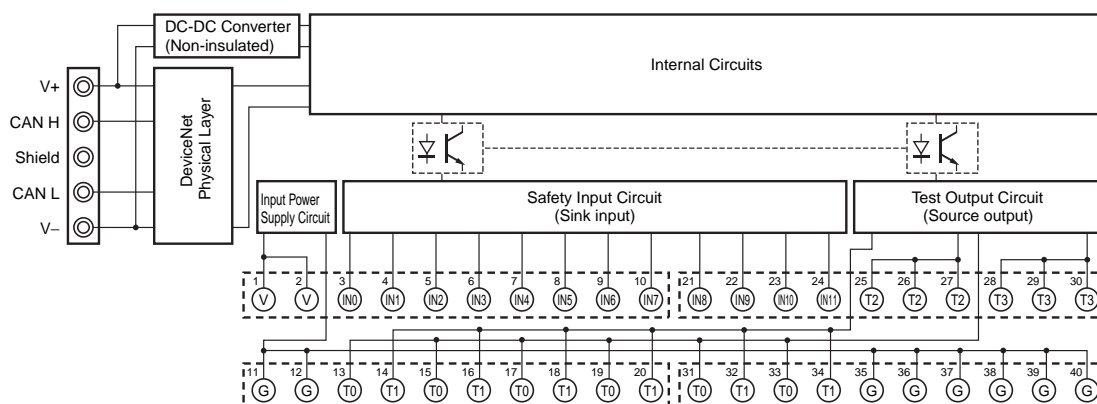
### DeviceNet Slave Communications

(Common with the DST1 Series)

Standard Slave communications	Max. 2 connections
-------------------------------	--------------------

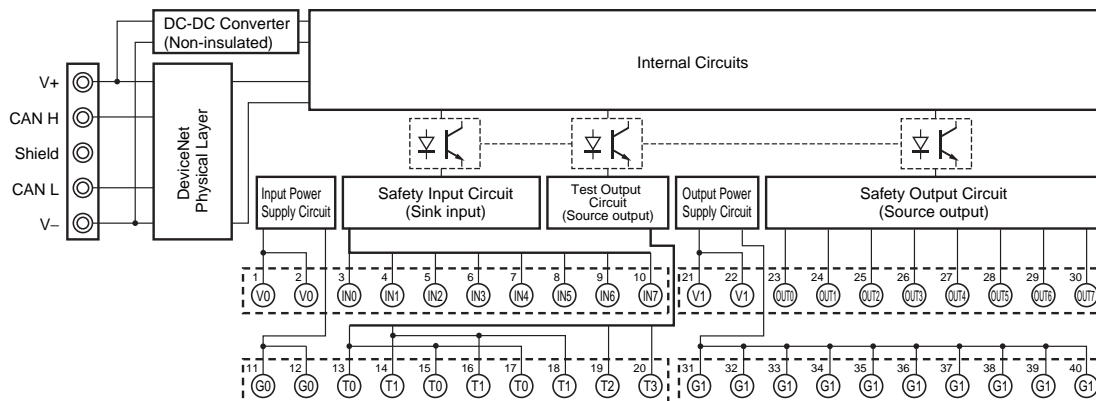
## Internal Circuit Configuration

DST1-ID12SL-1



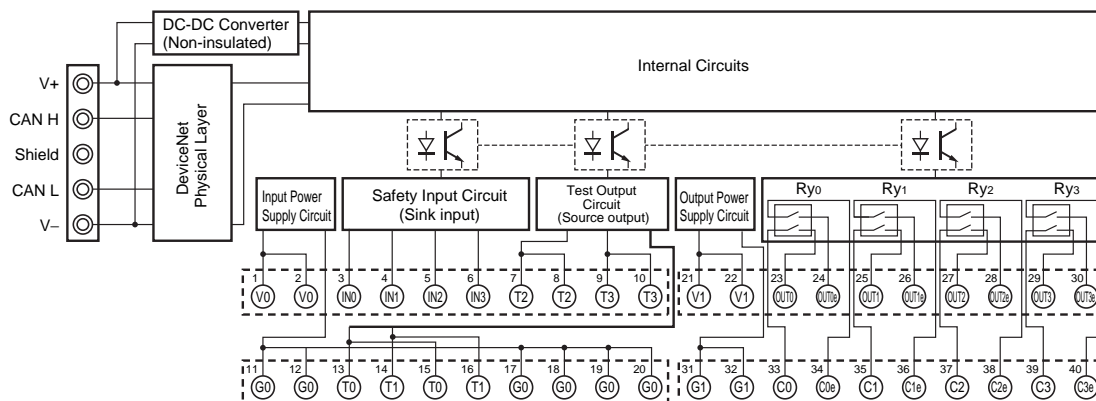
Terminal No.	Name	Function
1, 2	V	Power supply terminal (24 VDC) for input device and test output
11, 12	G	
35 to 40	G	Common terminal (Terminal No. 11, 12 and 35 to 40 are internally connected.)
3 to 10 21 to 24	IN0 to IN11	Safety input terminal
13 to 20 25 to 30 31 to 34	T0 to T3	Test output terminal

**DST1-MD16SL-1**  
**DST1-XD0808SL-1**



Terminal No.	Name	Function
1, 2	V0	Power supply terminal (24 VDC) for input device and test output
11, 12	G0	
3 to 10	IN0 to IN7	Safety input terminal
13 to 20	T0 to T3	Test output terminal
21, 22	V1	Power supply terminal (24 VDC) for output device
31, 32	G1	
23 to 30	OUT0 to OUT7	Safety output terminal
33 to 40	G1	Common terminal (Terminal Nos. 31 to 40 are internally connected.)

**DST1-MRD08SL-1**

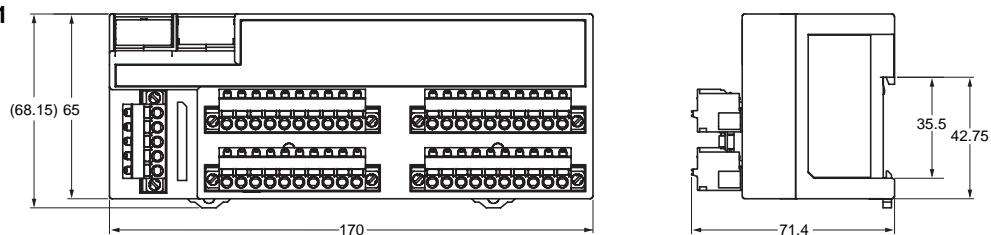


Terminal No.	Name	Function
1, 2	V0	Power supply terminal (24 VDC) for input device, test output, and monitoring the safety relay NC contact of the internal circuit
11, 12	G0	
17 to 20	G0	Common terminal (Terminal Nos. 11, 12 and 17 to 20 are internally connected.)
3 to 6	IN0 to IN3	Safety input terminal
7 to 10 13 to 16	T0 to T3	Test output terminal
21, 22	V1	Power supply terminal (24 VDC) for driving the safety relay of the internal circuit
31, 32	G1	
23 to 30 33 to 40	OUT0 to OUT3 C0 to C3 OUT0e to OUT3e C0e to C3e	Safety output terminal (The outputs of terminal No. 23/33 (OUT0) and 24/34 (OUT0e) are the same.) (The outputs of terminal No. 25/35 (OUT1) and 26/36 (OUT1e) are the same.) (The outputs of terminal No. 27/37 (OUT2) and 28/38 (OUT2e) are the same.) (The outputs of terminal No. 29/39 (OUT3) and 30/40 (OUT3e) are the same.)

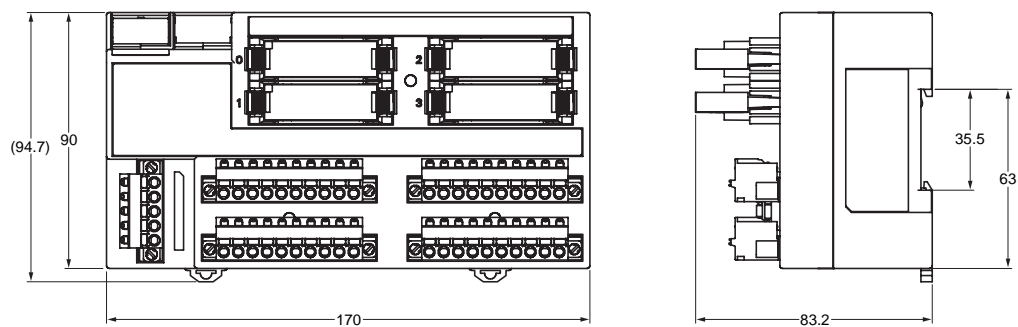
Refer to the *CIP Safety on DeviceNet DST1-series Safety I/O Terminals Operation Manual* (Cat. No. Z904) for wiring examples.

## Dimensions

DST1-ID12SL-1  
 DST1-MD16SL-1  
 DST1-XD0808SL-1



DST1-MRD08SL-1



## Safety Precautions

Refer to the "Safety Precautions for All CIP Safety on DeviceNet Systems" for precautions.  
 Be sure to read the following user's manual for other details required for correct use of the Safety I/O Terminals  
 Safety I/O Terminals User's Manual (Cat. No. Z904)

## Terms and Conditions Agreement

### Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

### Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

### Limitation on Liability; Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

### Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

### Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

### Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

### Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

### Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

2020.11

In the interest of product improvement, specifications are subject to change without notice.

**OMRON Corporation**  
Industrial Automation Company

<http://www.ia.omron.com/>

(c)Copyright OMRON Corporation 2020 All Right Reserved.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Controllers](#) category:*

*Click to view products by [Omron](#) manufacturer:*

Other Similar products are found below :

[61FGPN8DAC120](#) [CV500SLK21](#) [70177-1011](#) [F03-03 HAS C](#) [F03-31](#) [81550401](#) [FT1A-C12RA-W](#) [88981106](#) [H2CAC24A](#) [H2CRSAC110B](#)  
[R88A-CRGB003CR-E](#) [R88ARR080100S](#) [R88A-TK01K](#) [DCN1-1](#) [DRT2ID08C](#) [DTB4896VRE](#) [DTB9696CVE](#) [DTB9696LVE](#) [E53-AZ01](#)  
[E53E01](#) [E53E8C](#) [E5C4Q40J999FAC120](#) [E5CWLQ1TCAC100240](#) [E5GNQ03PFLKACDC24](#) [B300LKL21](#) [NSCXDC1V3](#) [NSH5-232CW-3M](#)  
[NT20SST122BV1](#) [NV-CN001](#) [OAS-160-N](#) [C40PEDRA](#) [K31S6](#) [K33-L1B](#) [K3MA-F](#) [100-240VAC](#) [K3TX-AD31A](#) [89750101](#) [L595020](#)  
[SRM1-C02](#) [SRS2-1](#) [FT1A-C14SA-S](#) [G32X-V2K](#) [26546803](#) [26546805](#) [PWRA440A](#) [CPM1AETL03CH](#) [CV500SLK11](#) [3G2A5BI081](#)  
[3G2A5IA122](#) [3G2A5LK010E](#) [3G2A5OA223](#)