

OMRON

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型号 DST1-ID12SL-1

型号 DST1-MD16SL-1

型号 DST1-MRD08SL-1

型号 DST1-XD0808SL-1

安全 I/O (输入/输出) 终端

Chinese 使用说明书

感谢您此次购买本公司的产品。本使用说明书中描述了型号DST1安装、使用上所需的注意事项。

- DST1系列需由掌握电气知识的专门人员操作。
-请务必仔细阅读本说明书后正确使用。

另外请搭配操作手册一起阅读。

- DeviceNet Safety DST1系列用户手册(Man.No.SJLB-401)
-系统配置手册(Man.No.SJLB-301)
-DeviceNet 用户手册(Man.No.SCCC-308)

-请妥善保管以备随时参阅。

欧姆龙株式会社

2141729-1 B

EC符合性宣言

欧姆龙声明DST1系列符合以下EC指令要求。
EMC指令 2004/108/EC 机械指令 2006/42/EC

规格

Table with 2 columns: EN/IEC standards (EN ISO13849-1:2008 Cat.4 PL e, EN61000-6-2:2005, etc.) and corresponding standards (EN ISO13849-2:2003, EN61000-6-4:2007, etc.)

警告 如果不正确处理,则有可能对人身造成轻度或中度伤害。严重情况下,甚至会导致重伤和死亡。另外可能会导致重大物损。

Table with 2 columns: Warning symbols (no open flame, general prohibition) and their meanings (non-specific, general prohibition notice).

警告标识

Table with 2 columns: Warning icons and their descriptions (e.g., safety function damage, electrical shock, output failure).

Table with 2 columns: Control equipment (emergency stop, safety interlocks, sensors, relays) and necessary items (instructions, manuals).

安全上的要点

- 使用: 请勿使DST1系列坠落或受异常振动冲击。否则可能引起故障和误动作。
-安装·保管场所: 请勿将DST1系列安装在以下场所。
-在以下场所使用时,请采取遮盖措施。
-有静电等发生干扰的场所

- 安装: 将DST1系列放置于防护等级IP54(IEC/EN60529)以上的控制箱中使用。
-需要装入控制盘时,请使用DIN导轨(TH35-7.5:IEC60715)。
-为了利于通风、便于接线,DST1系列周边请保留出50mm以上的空间。

Table with 2 columns: Wire types (single, flexible) and dimensions (cross-section, AWG).

- 接线时,请务必在断电状态下进行。
-通信电缆和I/O(输入/输出)信号用电缆请远离高压线、电源线再接线。
-在安装连接器的時候,請小心以免夾到手指。

- 定期点检与维护: 更换产品时,请务必在断电状态下进行。
-废弃: DST1系列进行拆卸时,请注意安全以免受伤。

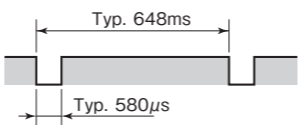
- 电源装置的选择: 请选择满足以下各项要求的DC电源装置。
-测试输出部规格: 测试输出部规格

1.规格

Table with 2 columns: Environment specifications (temperature, humidity, vibration) and EMC specifications.

Table with 2 columns: Safety input specifications (DC voltage, current, ON/OFF voltage).

Table with 2 columns: Safety output specifications (output type, current, ON voltage, leakage current).



安全输出设定为脉冲输出时,当安全输出启动,由于进行输出电路诊断,所以会输出以下脉冲信号。请确认连接设备的输入响应时间,避免出现由于OFF脉冲信号而引起的误动作。

Table with 2 columns: Safety output specifications (relay output), including relay type, current, and load capacity.

\* 指开闭频率在300次/min时的值。

2.各部分的名称和外形尺寸

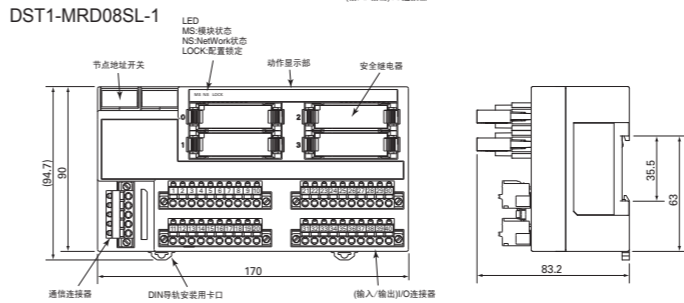
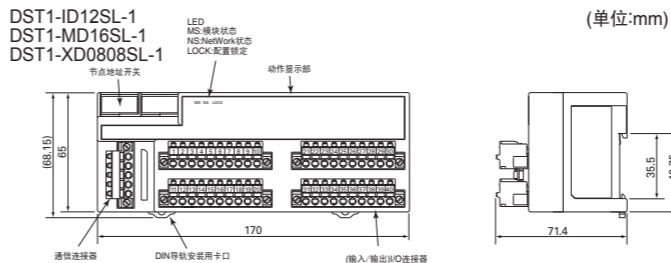


Table with 4 columns: LED name, color, status, and meaning (e.g., Green/On = Run status).

LED显示

Table with 4 columns: LED name, color, status, and meaning (e.g., Red/Flashing = Safety stop).

3.内部电路和端子排列

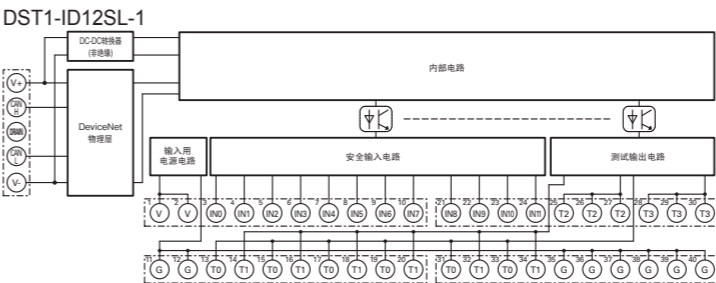


Table with 3 columns: Terminal No., Terminal Name, and Description (e.g., 1,2 V Input device).

DST1-MD16SL-1 / DST1-XD0808SL-1

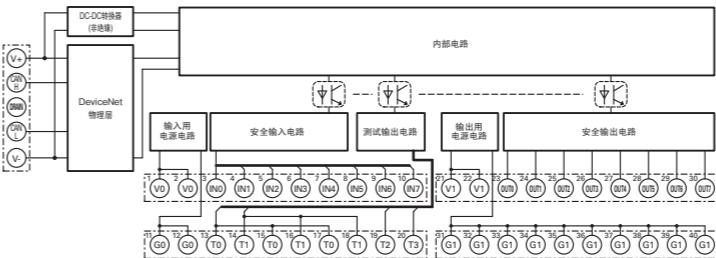


Table with 3 columns: Terminal No., Terminal Name, and Description for the MD16SL-1 model.

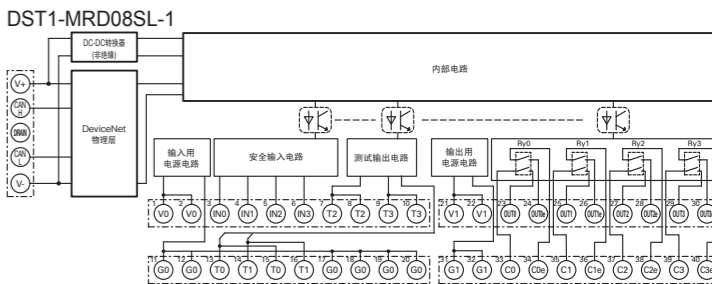
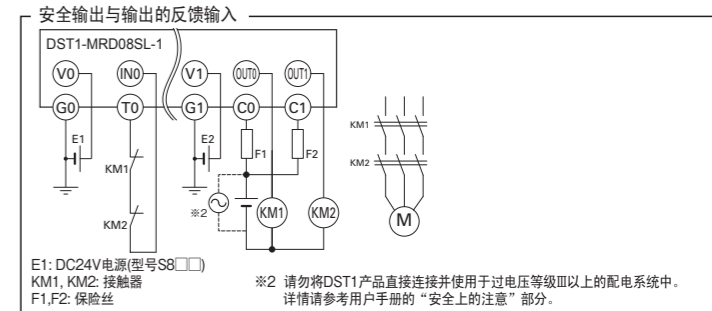
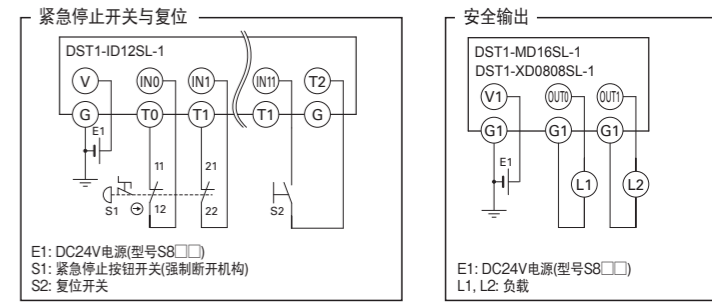


Table with 3 columns: Terminal No., Terminal Name, and Description for the MRD08SL-1 model.

4.接线范例



使用时的承诺事项

本产品是用于机械安全的Component商品,不同的使用方法有时可能无法满足要求的安全性。请遵守安全Component综合商品样本卷首所记载的“警告”内容。

- a) 在室外、存在潜在科学污染或者电气干扰等情况下使用...
b) 用于原子能控制设备、焚烧设备、铁路、航空、车辆设备...
c) 有可能危害到人身、财产安全的系统、机械、装置。

\* 上述仅列出一部分适用用途。使用前,请先仔细阅读本公司的最佳、综合商品样本、规格书等,最新版的商品样本、规格书中所记载的保证/免责事项。

技术咨询 网址: http://www.fa.omron.com.cn 咨询电话: 400-820-4535

欧姆龙自动化(中国)有限公司 上海市浦东新区银城中路200号 中银大厦2211室 (200120)
电话: 021-5037-2222 传真: 021-5037-2388



OMRON
TYPE DST1-ID12SL-1 TYPE DST1-MRD08SL-1
TYPE DST1-MD16SL-1 TYPE DST1-XD0808SL-1
Safety I/O Terminal

English INSTRUCTION MANUAL

Thank you for purchasing this OMRON product. This manual primarily describes precautions required in installing and operating the product.

- Only qualified person trained in professional electrical technique should be handle the DST1.
Before operating the DST1, read this manual through to acquire sufficient knowledge of the DST1.
To ensure safe and correct use of the DST1, also read the following manuals:
DeviceNet Safety DST1 Series Safety I/O Terminal OPERATION MANUAL (Cat.No.Z904)
DeviceNet Safety SYSTEM CONFIGURATION MANUAL (Cat.No.Z905)
DeviceNet OPERATION MANUAL (Cat.No.W267)

Keep this manual for future reference.

OMRON Corporation

EC Declaration of Conformity

OMRON declares that DST1 Series is in conformity with the requirements of the following EC Directives:
EMC Directive:2004/108/EC Machinery Directive:2006/42/EC

Standards

- DST1 Series is designed and manufactured in accordance with the following standards:
EN ISO13849-1:2008 Cat.4 PL e
EN61000-6-2:2005
IEC62061:2005 SIL3
IEC61508 parts 1-7:12.98-05.00 SIL3
EN954-1:1996 (ISO13849-1:1999) Cat.4
EN61131-2:2007
EN60204-1:2006
UL508
UL1604

Precaution for Safe Use

- Meanings of Signal Words
The following signal words are used in this manual.

WARNING Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.

- Meaning of Alert Symbols
The following alert symbols are used in this manual.

Indicates prohibited actions
Indicates mandatory actions

Alert Statements

Table with 2 columns: Controlling Devices, Requirements. Rows include Emergency stop switch, Door interlocking switch, Safety sensor, Relay with forcibly guided contacts, and Other devices.

Precautions for Safe Use

- Handle with care
Do not drop the DST1 to the ground or excessive vibration or mechanical shocks.
Installation and storage environment
Do not use or store the DST1 in any of the following locations.
Installation/ Mounting
Use the DST1 within an enclosure with IP54 protection or higher.
Installation/ Wiring
Use the following to wire external I/O devices to the DST1.

- Disconnect the DST1 from power supply when wiring.
Apply the specified voltage and current to the DST1 inputs.
Be sure to separate the communication cable and the I/O cable.
Be cautious not to have your fingers caught when attaching connectors.
Power Supply Selection
Use DC power supply satisfying requirements below.
Periodical Inspection and Maintenance
Disconnect the DST1 from power supply when replacing.
Disposal
Be cautious not to have you injured when dismantling the DST1.

Additional Precautions According to UL1604

- This equipment is suitable for use in Class 1, Div. 2, Group A, B, C, D or Non-Hazardous Location Only.
WARNING - Explosion Hazard - Substitution of Components May Impair Suitability For Class 1, Div. 2.
WARNING - Explosion Hazard - Do not Disconnect Equipment Unless Power Has Been Switched Off Or The Area Is Known To Be Non-Hazardous.
This device is open-type and is required to be installed in an enclosure suitable for the environment and can only be accessed with the use of a tool or key.
Set equipment convient a l'utilisation dans des emplacements de Classe I, Division 2, Groupes A, B, C, D, ou ne convient qu'a l'utilisation dans des endroits non dangereux.

1. SPECIFICATIONS

Table with 2 columns: Item, Specifications. Rows include Communications power supply voltage, I/O power supply voltage, EMC, Operating Temperature, and Weight.

Table with 2 columns: Item, Specifications. Rows include Safety Input Specifications and Test Output Specifications.

Table with 2 columns: Item, Specifications. Rows include Safety Output Specifications and a timing diagram showing pulse width of 648ms and rise time of 580µs.

In case that a safety output is configured as "Safety pulse test", while this output is in an ON state, the signal sequence shown below is output continuously to enable diagnosis.
Safety Output(Relay) Specifications
Relay type G7SA-2A2B EN50205 Class A
Failure rate P level (See note) 5VDC, 1mA

2. NOMENCLATURE AND FUNCTION / DIMENSIONS

(Unit:mm)
DST1-ID12SL-1, DST1-MD16SL-1, DST1-XD0808SL-1

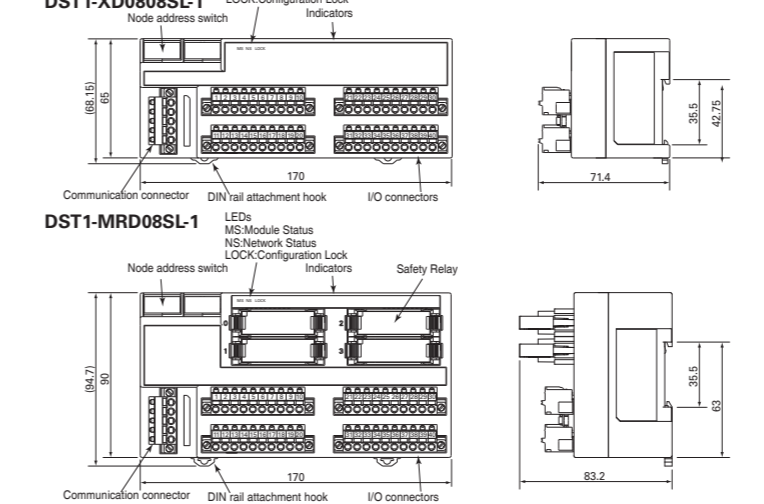


Table with 4 columns: LED name, Color, Status, Description. Rows describe MS (Green, Red, Green/Red) and NS (Green, Red, Yellow) indicators.

I/O Connectors
Use the following to wire to DST1.
Solid wire 0.2 to 2.5 mm², AWG 24 to 12
Stranded (Flexible) wire 0.34 to 1.5 mm², AWG 22 to 16

3. INTERNAL CIRCUITRY AND TERMINAL POSITION

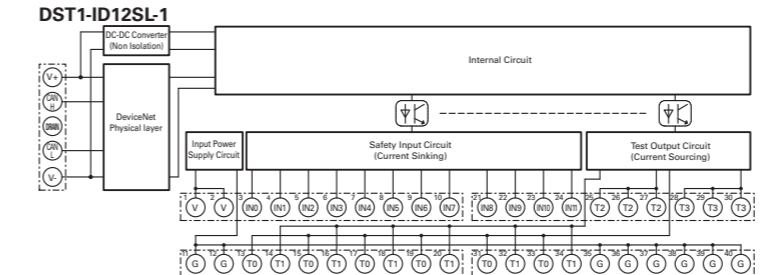


Table with 3 columns: Terminals, Names, Functions. Rows describe terminals 1,2 (V, G), 11,12 (G), 35 to 40 (G), and IN/OUT terminals.

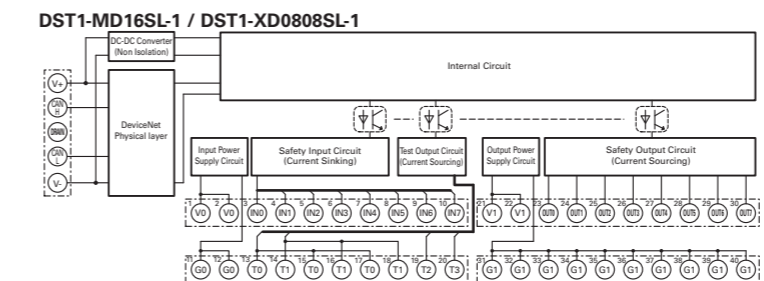


Table with 3 columns: Terminals, Names, Functions. Rows describe terminals 1,2 (V0, G0), 3 to 10 (I/O), 13 to 20 (T0-T3), 21,22 (V1, G1), 23 to 30 (OUT0-OUT7), and 33 to 40 (G1).

DST1-MRD08SL-1

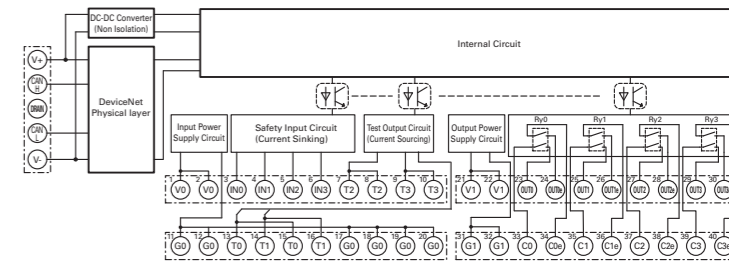
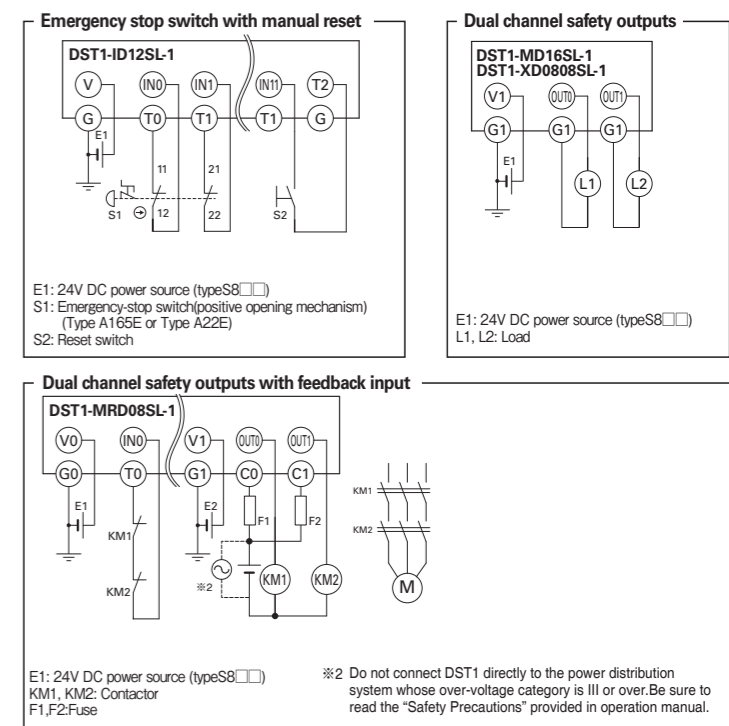


Table with 3 columns: Terminals, Names, Functions. Rows describe terminals 1,2 (V0, G0), 11,12 (G0), 17 to 20 (G0), 3 to 6 (I/O), 7 to 10,13 to 16 (T0-T3), 21,22 (V1, G1), and 23 to 30 (OUT0-OUT3).

4. APPLICATION EXAMPLE



Suitability for Use

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS.

See also Product catalog for Warranty and Limitation of Liability.

OMRON Industrial Automation Company

OMRON Corporation
Shiokoji Horikawa, Shimogyo-ku, Kyoto, 600-8530 JAPAN
Regional Headquarters: OMRON EUROPE B.V., OMRON (CHINA) CO., LTD., OMRON ASIAPACIFIC PTE.LTD.