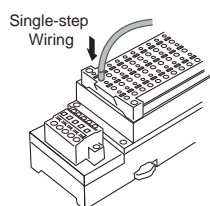


Screw-less Clamp Terminals with Transistors

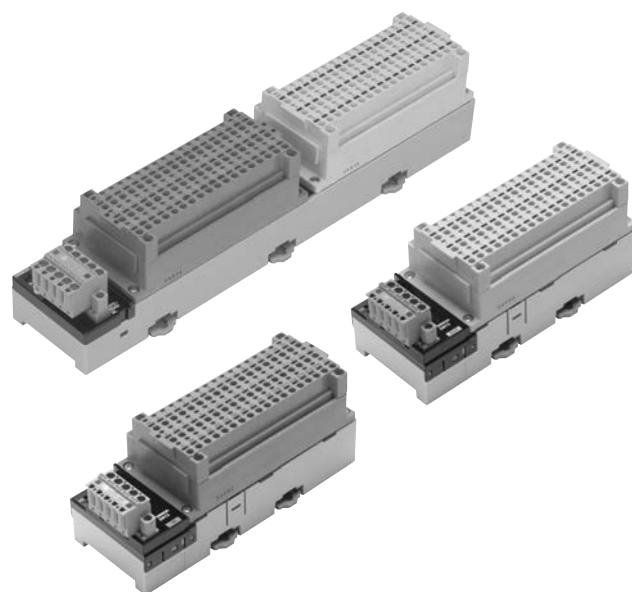
DRT2-□D16SL(H)(-1)/□D32SLH(-1)

Reduced Wiring and Labor on Factory Sites with Screw-less Terminal Wiring

- Screw-less structure eliminates tightening work.
- Detachable terminal blocks for easier maintenance.
- Single-step wiring by simply inserting pole terminals.



- Applicable wire sizes range from AWG24 to AWG16 (0.2 to 1.25 mm² dia.)



Smart Slave Functions

- | | | | |
|---|---|--|--|
| Operation time monitor | Contact operation counter | Unit conduction time monitor | Total ON time monitor |
| Unit comments | Connected device comments | Network power supply voltage monitor | I/O power supply monitor function |
| Communications error log function | Input filter (input or I/O only) | Power-ON inrush current protection (input or I/O only) | |
| Sensor power supply short-circuit detection (input or I/O only) | Disconnected sensor detection (input or I/O only) | External load short-circuit detection (output only) | Disconnection detection (output or I/O only) |
| Removable terminal block | Communications speed auto-detection | No need to wire Unit power supply | Last maintenance date |

Ordering Information

| Short/disconnection detection | Specifications | | | I/O connections | Rated internal circuit power supply voltage | Rated I/O power supply voltage | Model | | | | | |
|-------------------------------|----------------|---|--------------------------|-----------------|---|--------------------------------|----------------|-----------------|---|--------|----------------|----------------|
| Supported | Inputs | NPN (+ common) | 16 points | Clamp terminals | Supplied from communications connector. | 24 VDC | DRT2-ID16SLH | | | | | |
| | | PNP (- common) | | | | | DRT2-ID16SLH-1 | | | | | |
| | Outputs | NPN (- common) | | | | | DRT2-OD16SLH | | | | | |
| | | PNP (+ common) | | | | | DRT2-OD16SLH-1 | | | | | |
| Not supported | Inputs | NPN (+ common) | | | | | 32 points | Clamp terminals | Supplied from communications connector. | 24 VDC | DRT2-ID16SL | |
| | | PNP (- common) | | | | | | | | | DRT2-ID16SL-1 | |
| | Outputs | NPN (- common) | | | | | | | | | DRT2-OD16SL | |
| | | PNP (+ common) | | | | | | | | | DRT2-OD16SL-1 | |
| Supported | Inputs | NPN (+ common) | 16 inputs/ 16 outputs | Clamp terminals | Supplied from communications connector. | 24 VDC | | | | | DRT2-ID32SLH | |
| | | PNP (- common) | | | | | | | | | DRT2-ID32SLH-1 | |
| | | Outputs | | | | | | | | | NPN (- common) | DRT2-OD32SLH |
| | | | | | | | | | | | PNP (+ common) | DRT2-OD32SLH-1 |
| | I/O | NPN (input: + common, output: - common) | | | | | DRT2-MD32SLH | | | | | |
| | | PNP (input: - common, output: + common) | | | | | DRT2-MD32SLH-1 | | | | | |

General Specifications

| | |
|---|--|
| Communications power supply voltage | 11 to 25 VDC (Supplied from the communications connector.) |
| Communications power supply current consumption | DRT2-ID16SL(-1) : 30 mA max. (24 VDC), 55 mA max. (11 VDC) DRT2-OD16SL(-1) : 35 mA max. (24 VDC), 65 mA max. (11 VDC) DRT2-ID16SLH(-1) : 35 mA max. (24 VDC), 65 mA max. (11 VDC) DRT2-OD16SLH(-1) : 35 mA max. (24 VDC), 70 mA max. (11 VDC) DRT2-ID32SL : 55 mA max. (24 VDC), 100 mA max. (11 VDC) DRT2-ID32SL-1 : 55 mA max. (24 VDC), 90 mA max. (11 VDC) DRT2-OD32SL : 50 mA max. (24 VDC), 80 mA max. (11 VDC) DRT2-OD32SL-1 : 50 mA max. (24 VDC), 75 mA max. (11 VDC) DRT2-MD32SL(-1) : 50 mA max. (24 VDC), 80 mA max. (11 VDC) DRT2-ID32SLH : 65 mA max. (24 VDC), 100 mA max. (11 VDC) DRT2-ID32SLH-1 : 65 mA max. (24 VDC), 105 mA max. (11 VDC) DRT2-OD32SLH : 55 mA max. (24 VDC), 80 mA max. (11 VDC) DRT2-OD32SLH-1 : 55 mA max. (24 VDC), 85 mA max. (11 VDC) DRT2-MD32SLH(-1) : 60 mA max. (24 VDC), 90 mA max. (11 VDC) |
| Noise immunity | Conforms to IEC61000-4-4, 2 kV (power line) |
| Vibration resistance | 10 to 60 Hz, 0.7-mm double amplitude, 60 to 150 Hz, 50 m/s ² for 80 min each in the X, Y, and Z directions |
| Shock resistance | 150m/s ² , 6 directions, 3 times each |
| Dielectric strength | 500 VAC (between isolated circuits) |
| Insulation resistance | 20 MΩ min. (between isolated circuits) |
| Ambient operating temperature | -10°C to 55°C |
| Ambient operating humidity | 25% to 85% (with no condensation) |
| Ambient operating atmosphere | No corrosive gases |
| Ambient storage temperature | -20°C to 65°C |
| Mounting method | DIN 35 mm-track mounting |
| Weight | 480 g max. |

I/O Specifications

● 16-point Inputs Terminals with Transistors (Input Specifications)

| Item | Model | DRT2-ID16SL | DRT2-ID16SL-1 | DRT2-ID16SLH | DRT2-ID16SLH-1 |
|--------------------------------|-------|--|---|---|---|
| Internal I/O common | | NPN | PNP | NPN | PNP |
| Input points | | 16 inputs | | | |
| I/O power supply voltage | | 20.4 to 26.4 VDC (24 VDC -15%/+10%) | | | |
| Input current | | 24 VDC: 6.0 mA max./point 17 VDC: 3.0 mA max./point | | | |
| Input resistance | | 4 kΩ | | | |
| ON delay time | | 1.5 ms max. | | | |
| OFF delay time | | 1.5 ms max. | | | |
| ON voltage | | 15 VDC min. (between each input terminal and V) | 15 VDC min. (between each input terminal and G) | 15 VDC min. (between each input terminal and V) | 15 VDC min. (between each input terminal and G) |
| OFF voltage | | 5 VDC max. (between each input terminal and V) | 5 VDC max. (between each input terminal and G) | 5 VDC max. (between each input terminal and V) | 5 VDC max. (between each input terminal and G) |
| ON current | | 3.0 mA max. | | | |
| OFF current | | 1.0 mA max. | | | |
| Number of circuits per common | | 16 per common | | | |
| Power short-circuit protection | | -- | | Operates at 50 mA/point min. | |
| Disconnection detection | | -- | | Operates at 0.3 mA/point max. | |
| Input power supply current | | 100 mA per point | | 50 mA per point | |

● 32-point Inputs Terminals with Transistors (Input Specifications)

| Item | Model | DRT2-ID32SLH | DRT2-ID32SLH-1 |
|--------------------------------|-------|---|---|
| Internal I/O common | | NPN | PNP |
| Input points | | 32 inputs | |
| I/O power supply voltage | | 20.4 to 26.4 VDC (24 VDC -15%/+10%) | |
| Input current | | 6.0 mA/6.0 mA max. per point at 24 VDC 3.0 mA max. per point at 17 VDC | |
| Input resistance | | 4 kΩ | |
| ON delay time | | 1.5 ms max. | |
| OFF delay time | | 1.5 ms max. | |
| ON voltage | | 15 VDC min. (between each input terminal and V) | 15 VDC min. (between each input terminal and G) |
| OFF voltage | | 5 VDC max. (between each input terminal and V) | 5 VDC max. (between each input terminal and G) |
| ON current | | 3 mA min. | |
| OFF current | | 1.0 mA max. | |
| Number of circuits per common | | 16 per common | |
| Power short-circuit protection | | Operates at 50 mA/point min. | |
| Disconnection detection | | Operates at 0.3 mA/point max. | |

● 16-point Outputs Terminals with Transistors (Output Specifications)

| Item | Model | DRT2-OD16SL | DRT2-OD16SL-1 | DRT2-OD16SLH | DRT2-OD16SLH-1 |
|-----------------------------|-------|---|---------------|----------------------------|----------------|
| Internal I/O common | | NPN | PNP | NPN | PNP |
| I/O points | | 16 outputs | | | |
| I/O power supply voltage | | 20.4 to 26.4 VDC (24 VDC -15%/+10%) | | | |
| Output current | | 0.5 A per point, 4 A per common | | | |
| Residual voltage | | 1.2 V max. | | | |
| Leakage current | | 0.1 mA max. | | 0.1 mA max. (See Note: 1.) | |
| ON delay time | | 0.5 ms max. | | | |
| OFF delay time | | 1.5 ms max. | | | |
| Disconnection detection | | -- | | (See Note: 2.) | |
| Output power supply current | | 100 mA per point | | | |
| Output for errors | | According to hold/clear setting for errors (default: clear) | | | |

Note 1: To enable detection of external load disconnections, a current of 0.1 mA or less is output to the load even when the output is OFF. Make sure that the load will not operate for this current.

Note 2: Disconnection detection can be used when the load current is 3 mA or higher. If the load current is less than 3 mA, disconnections may be falsely detected.

● 32-point Outputs Terminals with Transistors (Output Specifications)

| Item | Model | DRT2-OD32SLH | DRT2-OD32SLH-1 |
|--------------------------|-------|---|----------------|
| Internal I/O common | | NPN | PNP |
| I/O points | | 32 outputs | |
| I/O power supply voltage | | 20.4 to 26.4 VDC (24 VDC -15%/+10%) | |
| Output current | | 0.5 A per point, 4 A per common | |
| Residual voltage | | 1.2 V max. | |
| Leakage current | | 0.1 mA max. (See Note: 1.) | |
| ON delay time | | 0.5 ms max. | |
| OFF delay time | | 1.5 ms max. | |
| Disconnection detection | | (See Note: 2.) | |
| Output for errors | | According to hold/clear setting for errors (default: clear) | |

Note 1: To enable detection of external load disconnections, a current of 0.1 mA or less is output to the load even when the output is OFF. Make sure that the load will not operate for this current.

Note 2: Disconnection detection can be used when the load current is 3 mA or higher. If the load current is less than 3 mA, disconnections may be falsely detected.

● 16-point Inputs/16-point Outputs Terminals with Transistors (Input Specifications)

| Item | Model | DRT2-MD32SLH | DRT2-MD32SLH-1 |
|--------------------------------|-------|--|---|
| Internal I/O common | | NPN | PNP |
| Input points | | 16 inputs | |
| I/O power supply voltage | | 20.4 to 26.4 VDC (24 VDC -15%/+10%) | |
| Input current | | 6.0 mA max. per point at 24 VDC 3.0 mA max. per point at 17 VDC | |
| Input resistance | | 4 kΩ | |
| ON delay time | | 1.5 ms max. | |
| OFF delay time | | 1.5 ms max. | |
| ON voltage | | 15 VDC min. (between each input terminal and V) | 15 VDC min. (between each input terminal and G) |
| OFF voltage | | 5 VDC max. (between each input terminal and V) | 5 VDC max. (between each input terminal and G) |
| ON current | | 3 mA min. | |
| OFF current | | 1.0 mA max. | |
| Number of circuits per common | | 16 per common | |
| Power short-circuit protection | | Operates at 50 mA/point min. | |
| Disconnection detection | | Operates at 0.3 mA/point max | |

● 16-point Inputs/16-point Outputs Terminals with Transistors (Output Specifications)

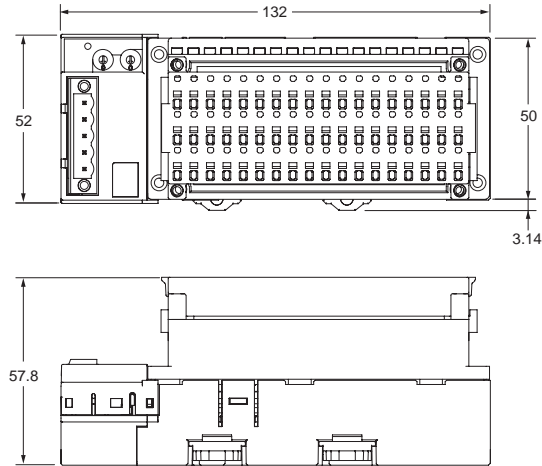
| Item | Model | DRT2-MD32SLH | DRT2-MD32SLH-1 |
|--------------------------|-------|---|----------------|
| Internal I/O common | | NPN | PNP |
| I/O points | | 16 outputs | |
| I/O power supply voltage | | 20.4 to 26.4 VDC (24 VDC -15%/+10%) | |
| Output current | | 0.5 A per point, 4 A per common | |
| Residual voltage | | 1.2 V max. | |
| Leakage current | | 0.1 mA max. (See Note: 1.) | |
| ON delay time | | 0.5 ms max. | |
| OFF delay time | | 1.5 ms max. | |
| Disconnection detection | | (See Note: 2.) | |
| Output for errors | | According to hold/clear setting for errors (default: clear) | |

Note 1: To enable detection of external load disconnections, a current of 0.1 mA or less is output to the load even when the output is OFF. Make sure that the load will not operate for this current.

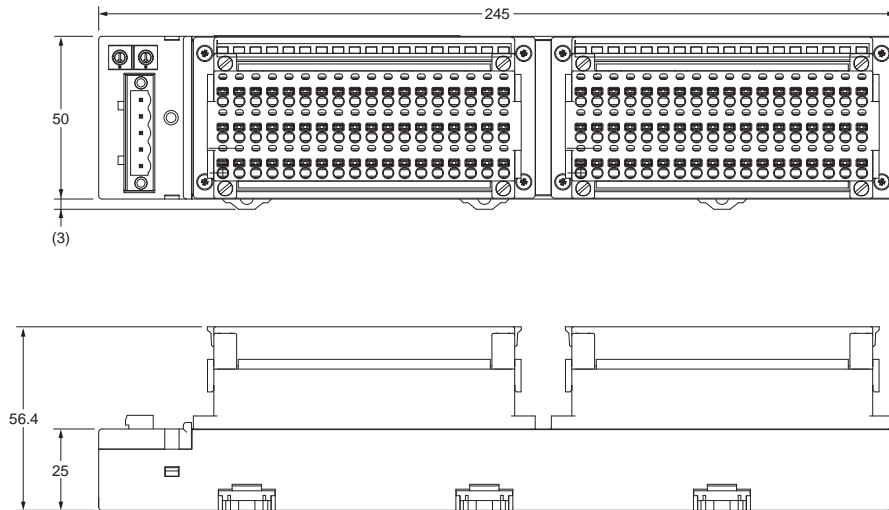
Note 2: Disconnection detection can be used when the load current is 3 mA or higher. If the load current is less than 3 mA, disconnections may be falsely detected.

Dimensions

DRT2-ID16SLH(-1)
 DRT2-OD16SLH(-1)
 DRT2-ID16SL(-1)
 DRT2-OD16SL(-1)

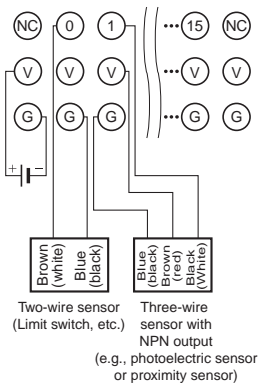


DRT2-ID32SLH(-1)
 DRT2-OD32SLH(-1)
 DRT2-MD32SLH(-1)

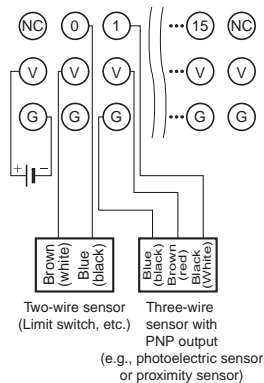


Wiring Diagrams

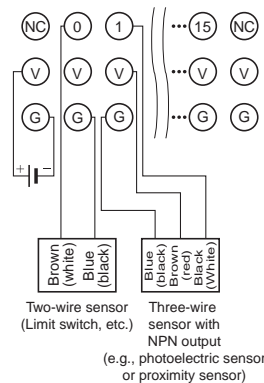
DRT2-ID16SL
 (NPN)



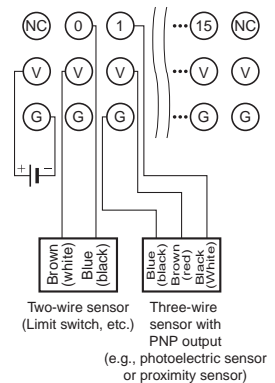
DRT2-ID16SL-1
 (PNP)



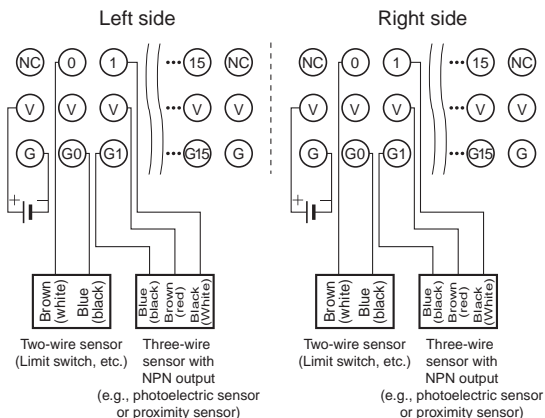
DRT2-ID16SLH
 (NPN)



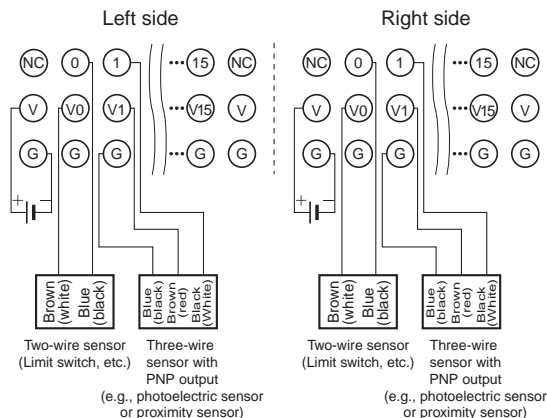
DRT2-ID16SLH-1
 (PNP)



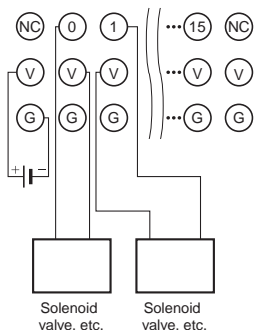
DRT2-ID32SLH (NPN)



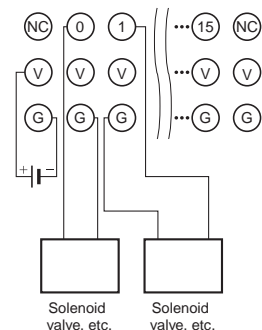
DRT2-ID32SLH-1 (PNP)



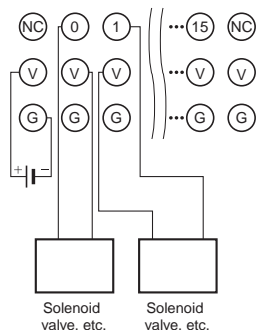
DRT2-OD16SL (NPN)



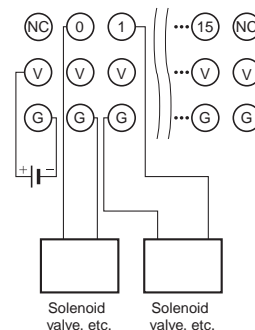
DRT2-OD16SL-1 (PNP)



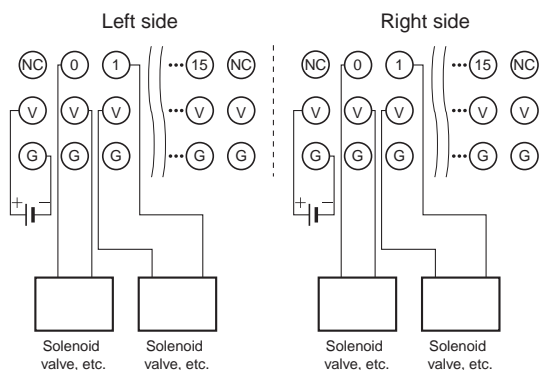
DRT2-OD16SLH (NPN)



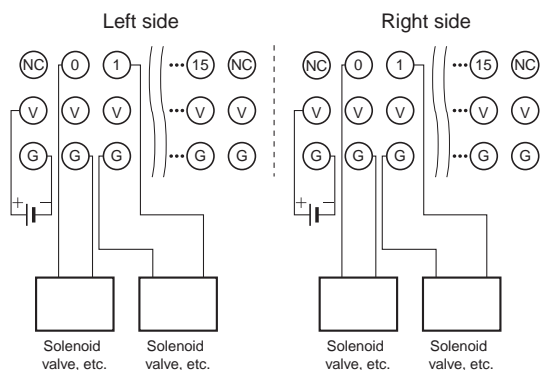
DRT2-OD16SLH-1 (PNP)



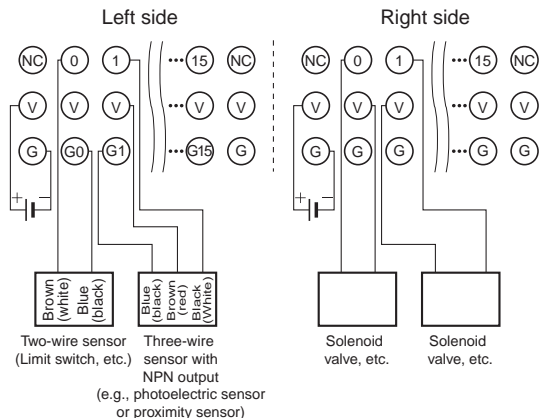
DRT2-OD32SLH (NPN)



DRT2-OD32SLH-1 (PNP)



DRT2-MD32SLH (NPN)



DRT2-MD32SLH-1 (PNP)

