Environment-resistive Terminals with Transistors (Standard Type)

DRT2-□D04CL(-1)/□D08CL(-1)/□D16CL(-1)

Remote I/O Terminals with High Degree of Environmental Resistance (IP67) in Product Lineup Including Economical Input, Output, and Mixed I/O Models

- Common Smart Slave functionality provides strong support for equipment operation status monitoring and effective maintenance.
- High degree of environmental resistance with dust-proof and drip-proof construction. (IP67)
- Models with one connector for two outputs are available to make easier connection with hydraulic valve devices. (Models with 16 outputs and models with 16 mixed I/O)

Smart Slave Functions

Operation time monitor (I/O only) ✻	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)	
Communications speed auto-detection	No need to wire Unit power supply	Last maintenance date

✻ The operation time monitor can be used with the DRT2-□D04CL(-1).

Ordering Information

Specifications			I/O connections	Rated internal circuit power supply voltage	Rated I/O power supply voltage	Model
Inputs	NPN (+ common)	4 points	Sensor I/O connector	Supplied from the communications connector	24 VDC	**DRT2-ID04CL**
	PNP (- common)					**DRT2-ID04CL-1**
Outputs	NPN (- common)					**DRT2-OD04CL**
	PNP (+ common)					**DRT2-OD04CL-1**
Inputs	NPN (+ common)	8 points				**DRT2-ID08CL**
	PNP (- common)					**DRT2-ID08CL-1**
Outputs	NPN (- common)					**DRT2-OD08CL**
	PNP (+ common)					**DRT2-OD08CL-1**
Inputs	NPN (+ common)	16 points				**DRT2-HD16CL**
	PNP (- common)					**DRT2-HD16CL-1**
Outputs	NPN (- common)					**DRT2-WD16CL**
	PNP (+ common)					**DRT2-WD16CL-1**
I/O	NPN (input: + common, output: - common)	8 inputs/ 8 outputs				**DRT2-MD16CL**
	PNP (input: - common, output: + common)					**DRT2-MD16CL-1**

General Specifications

Item / Model	DRT2-ID04CL(-1)	DRT2-OD04CL(-1)	DRT2-ID08CL(-1)	DRT2-OD08CL(-1)	DRT2-HD16CL(-1)	DRT2-WD16CL(-1)	DRT2-MD16CL(-1)
Communications power supply voltage	11 to 25 VDC (Supplied from the communications connector)						
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)						
Noise immunity	Conforms to IEC 61000-4-4 2 kV (power line)						
Communications power supply current consumption	35mA max. (24 VDC) 55mA max. (11 VDC)		35mA max. (24 VDC) 50mA max. (11 VDC)		40mA max. (24 VDC) 55mA max. (11 VDC)	35mA max. (24 VDC) 55mA max. (11 VDC)	40mA max. (24 VDC) 55mA max. (11 VDC)
Vibration resistance	10 to 60 Hz with double-amplitude of 0.7 mm, 60 to 150 Hz and 50 m/s² in X, Y, and Z directions for 80 min each						
Shock resistance	150m/s², 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						
Degree of protection	IP67						
Mounting method	M5 screw mounting (front and back)						
Mounting strength	100 N						
Connector strength	30 N						
Screw tightening torque	Round connectors (communications, supply voltage, and I/O): 0.39 to 0.49 N·m M5 (Unit mounting from front): 1.47 to 1.96 N·m						
Weight	275 g max.		390 g max.				
I/O power supply connector	7/8-16UN						
Communications connector	M12						

Input Specifications

●4-input Models

Item / Model	DRT2-ID04CL	DRT2-ID04CL-1
Internal I/O common	NPN	PNP
I/O points	4 inputs	
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)
OFF current	1.0 mA max.	
Input current	6.0 mA max. per point at 24 VDC 3.0 mA max. per point at 17 VDC	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
ON delay time	1.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits per common	4 per common	

●8-input Models

Item / Model	DRT2-ID08CL	DRT2-ID08CL-1
Internal I/O common	NPN	PNP
I/O points	8 inputs	
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)
OFF current	1.0 mA max.	
Input current	6.0 mA max. per point at 24 VDC 3.0 mA max. per point at 17 VDC	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
ON delay time	1.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits per common	8 per common	

●16-input Models

Item / Model	DRT2-HD16CL	DRT2-HD16CL-1
Internal I/O common	NPN	PNP
I/O points	16 inputs	
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)
OFF current	1.0 mA max.	
Input current	6.0 mA max. per point at 24 VDC 3.0 mA max. per point at 17 VDC	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
ON delay time	1.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits per common	16 per common	

●8-input/8-output Models

Item / Model	DRT2-MD16CL	DRT2-MD16CL-1
Internal I/O common	NPN	PNP
I/O points	8 inputs	
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)
OFF current	1.0 mA max.	
Input current	6.0 mA max. per point at 24 VDC 3.0 mA max. per point at 17 VDC	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
ON delay time	1.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits per common	8 per common	

Output Specifications

●4-output Models

Item / Model	DRT2-OD04CL	DRT2-OD04CL-1
Internal I/O common	NPN	PNP
I/O points	4 outputs	
Rated output current	0.5 A per point, 2.0 A per common	
Residual voltage	1.2 V max. (0.5 A DC between each output terminal and G)	1.2 V max. (0.5 A DC between each output terminal and V)
Leakage current	0.1 mA max.	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
ON delay time	0.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits per common	4 per common	

●8-output Models

Item / Model	DRT2-OD08CL	DRT2-OD08CL-1
Internal I/O common	NPN	PNP
I/O points	8 outputs	
Rated output current	0.5 A per point, 4 A per common	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
Residual voltage	1.2 V max. (0.5 A DC between each output terminal and G)	1.2 V max. (0.5 A DC between each output terminal and V)
Leakage current	0.1 mA max.	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
ON delay time	0.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits per common	8 per common	

●16-output Models

Item / Model	DRT2-WD16CL	DRT2-WD16CL-1
Internal I/O common	NPN	PNP
I/O points	16 outputs	
Rated output current	0.5 A per point, 4 A per common	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
Residual voltage	1.2 V max. (0.5 A DC between each output terminal and G)	1.2 V max. (0.5 A DC between each output terminal and V)
Leakage current	0.1 mA max.	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
ON delay time	0.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits per common	16 per common	

●8-input/8-output Models

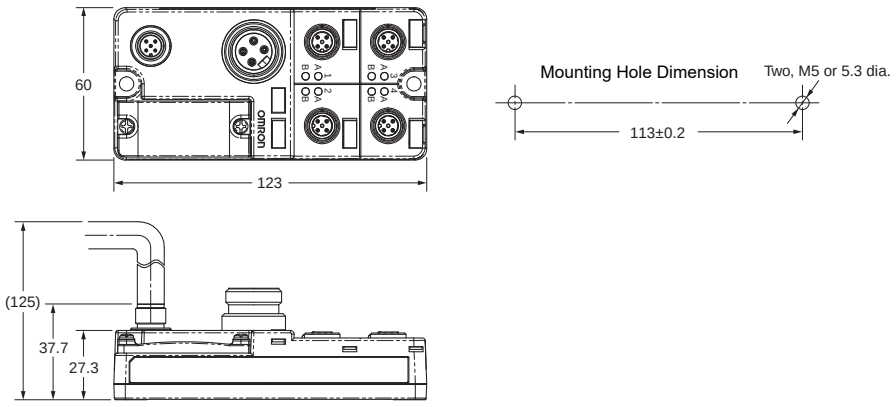
Item / Model	DRT2-MD16CL	DRT2-MD16CL-1
Internal I/O common	NPN	PNP
I/O points	8 outputs	
Rated output current	0.5 A per point, 4 A per common	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
Residual voltage	1.2 V max. (0.5 A DC between each output terminal and G)	1.2 V max. (0.5 A DC between each output terminal and V)
Leakage current	0.1 mA max.	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)	
ON delay time	0.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits per common	8 per common	

Note: Refer to Peripheral Devices on page 169 for information on applicable connectors.

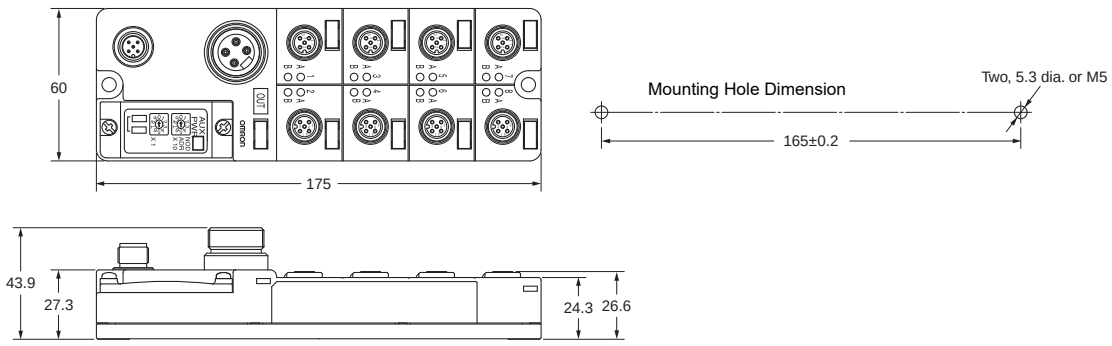
Dimensions

(Unit: mm)

DRT2-ID04CL(-1)
DRT2-OD04CL(-1)

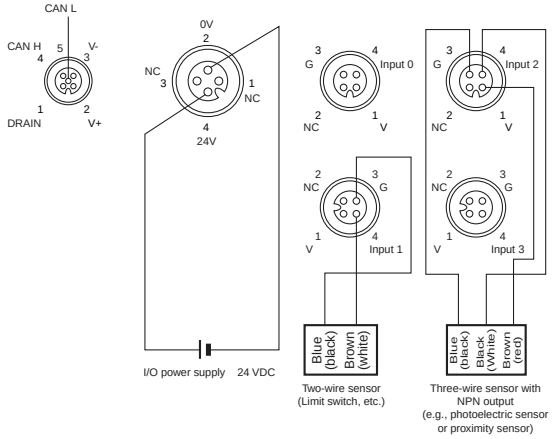


DRT2-ID08CL(-1)
DRT2-OD08CL(-1)
DRT2-HD16CL(-1)
DRT2-WD16CL(-1)
DRT2-MD16CL(-1)

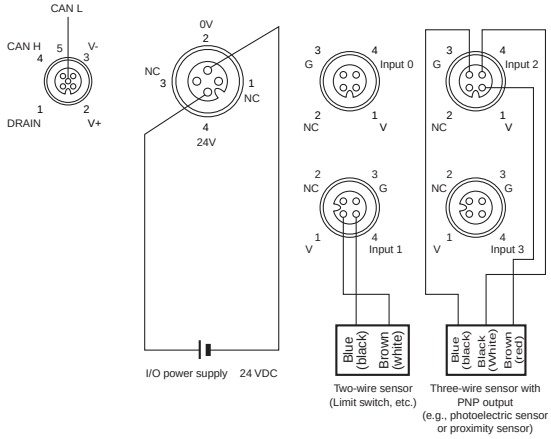


Wiring Diagrams

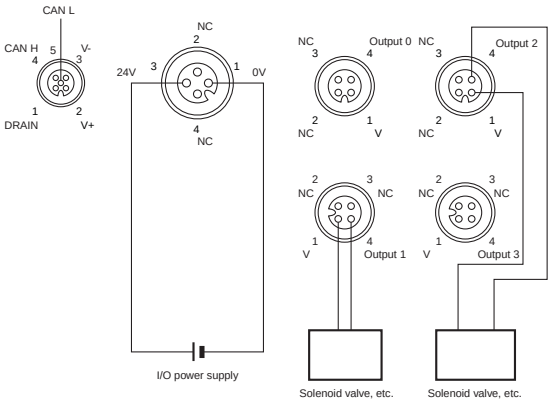
DRT2-ID04CL (NPN)



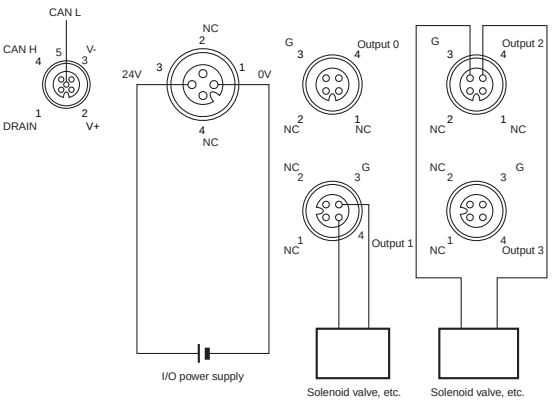
DRT2-ID04CL-1 (PNP)



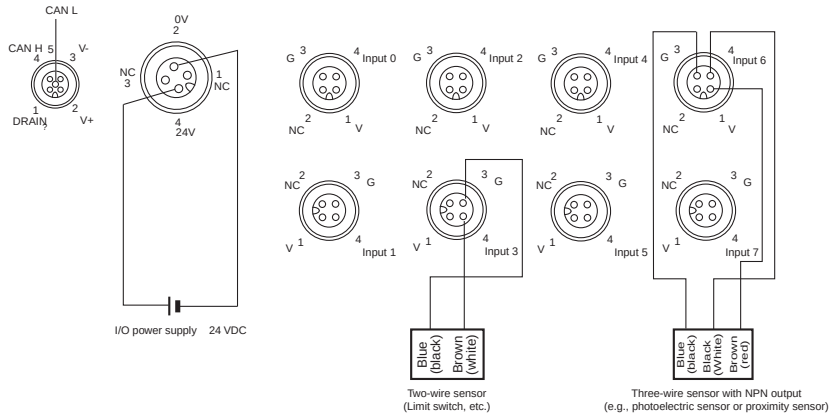
DRT2-OD04CL (NPN)



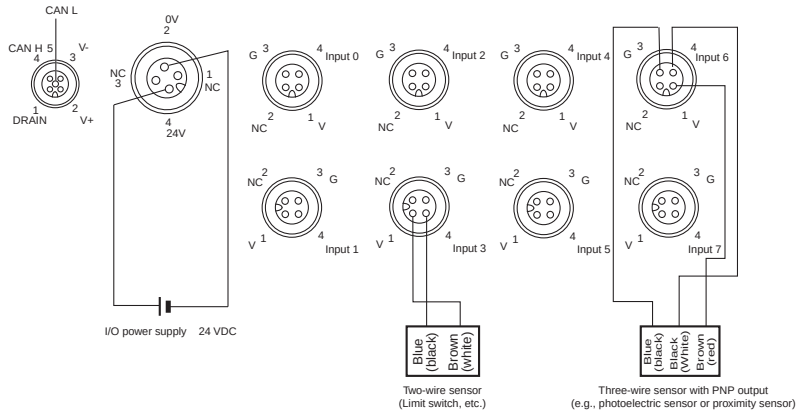
DRT2-OD04CL-1 (PNP)



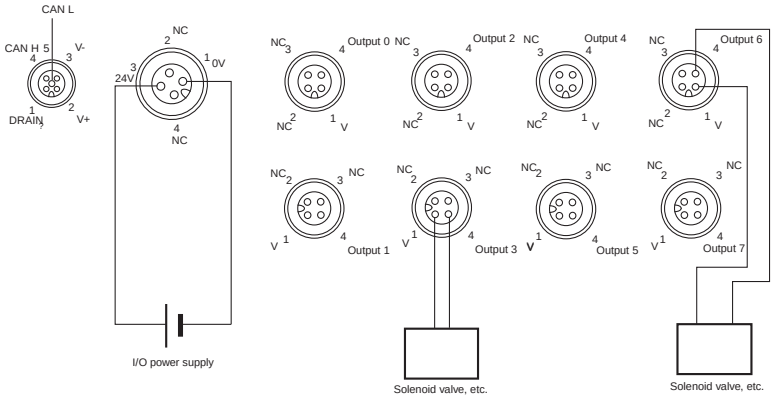
DRT2-ID08CL (NPN)



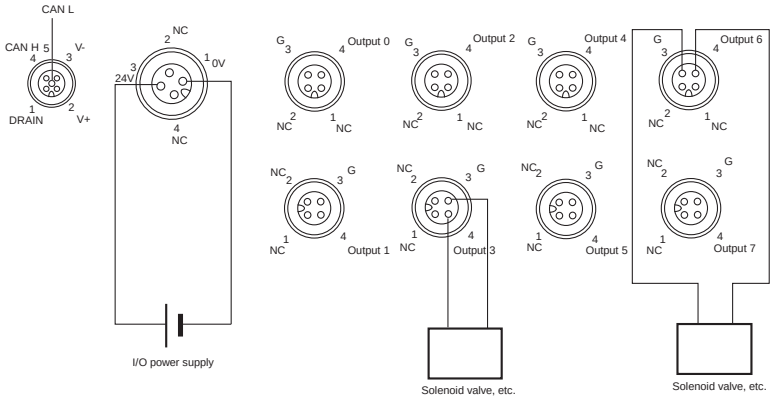
DRT2-ID08CL-1 (PNP)



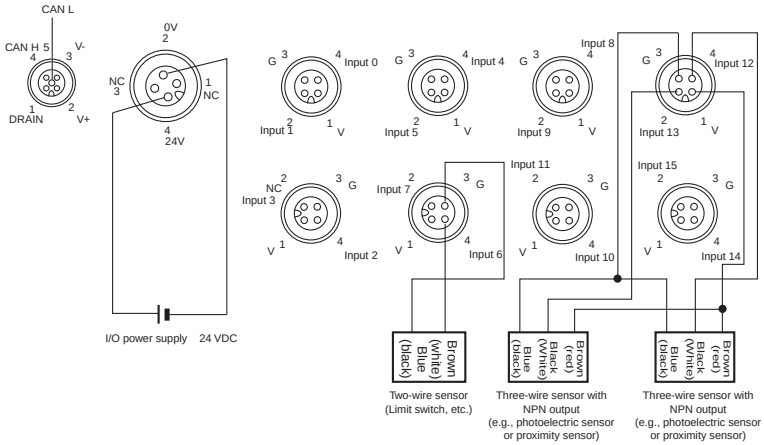
DRT2-OD08CL (NPN)



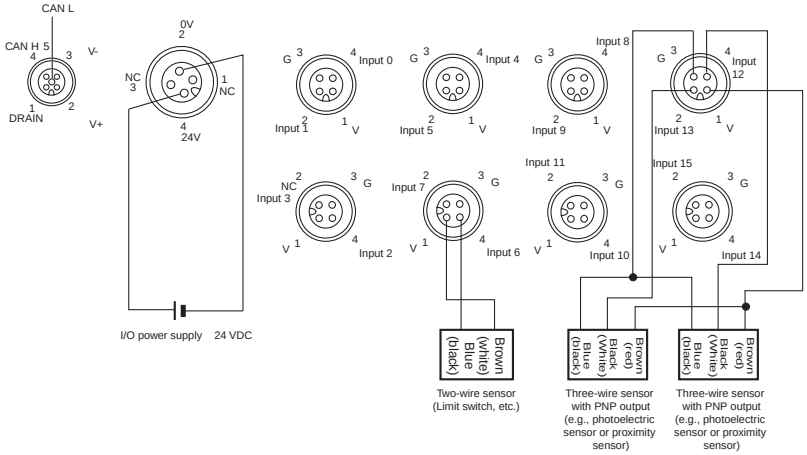
DRT2-OD08CL-1 (PNP)



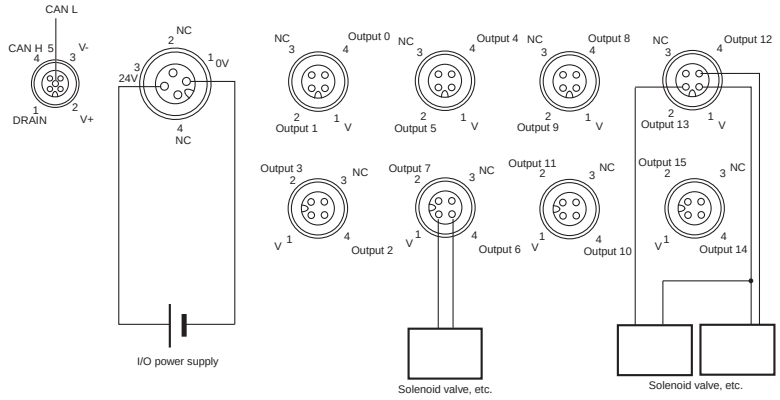
DRT2-HD16CL (NPN)



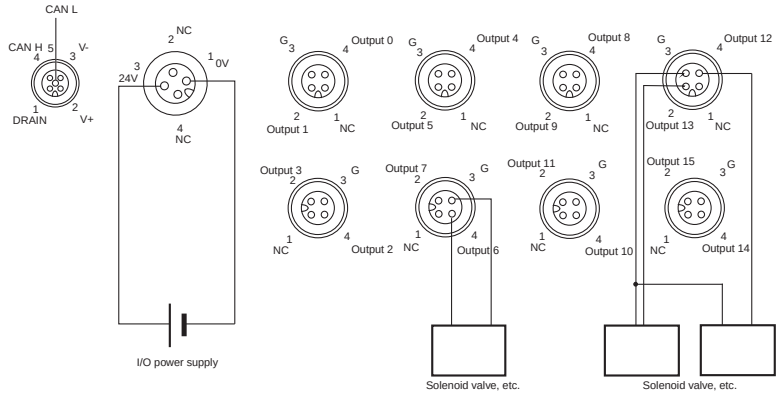
DRT2-HD16CL-1 (PNP)



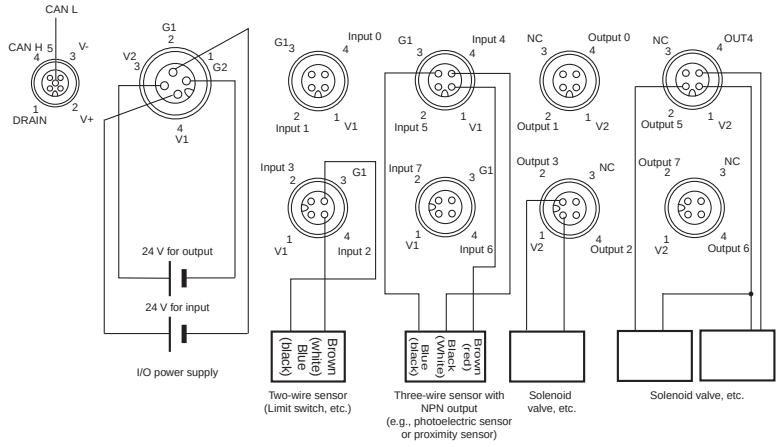
DRT2-WD16CL (NPN)



DRT2-WD16CL-1 (PNP)



DRT2-MD16CL (NPN)



DRT2-MD16CL-1 (PNP)