

Power Relays

RL Series



Designed with a 1- and 2-pole 3HP/277V AC rating in an economical and compact package, 30A RL power relays are the superior choice for HVAC panels, energy management and applications requiring higher voltage loads and inductive kickback.

Choose from panel or DIN rail mounting. Unlike the competition, when DIN rail mounted, RL relays don't require a socket or adaptor. Quick Connect terminals allow faster installation on commercial applications, while screw terminations are ideal for industrial applications.



• See website for details on approvals and standards.

RL Series Power Relays

High capacity power relays



Quick Connect
Flange Mount



Screw Terminal
DIN Rail Mount

Part Numbers

Flange Mount

Coil voltage		Screw Terminal 1 Pole Flange Mount	Screw Terminal 2 Pole Flange Mount	Quick Connect Terminal 1 Pole Flange Mount	Quick Connect Terminal 2 Pole Flange Mount
DC	12V	RL1N-T-D12	RL2N-T-D12	RL1B-T-D12	RL2B-T-D12
	24V	RL1N-T-D24	RL2N-T-D24	RL1B-T-D24	RL2B-T-D24
AC	24V	RL1N-T-A24	RL2N-T-A24	RL1B-T-A24	RL2B-T-A24
	100V - 120V	RL1N-T-A100	RL2N-T-A100	RL1B-T-A100	RL2B-T-A100
	200V - 240V	RL1N-T-A200	RL2N-T-A200	RL1B-T-A200	RL2B-T-A200

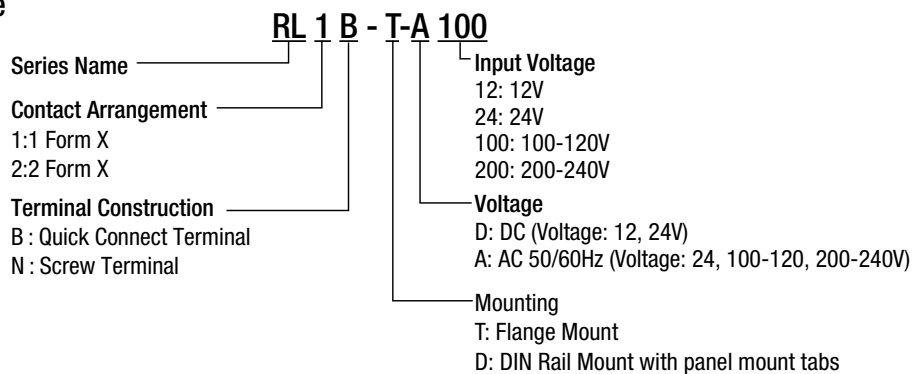
DIN Rail Mount with Panel Mount Tabs

Coil voltage		Screw Terminal 1 Pole DIN Rail	Screw Terminal 2 Pole DIN Rail	Quick Connect Terminal 1 pole DIN Rail	Quick Connect Terminal 2 Pole DIN Rail
DC	12V	RL1N-D-D12	RL2N-D-D12	RL1B-D-D12	RL2B-D-D12
	24V	RL1N-D-D24	RL2N-D-D24	RL1B-D-D24	RL2B-D-D24
AC	24V	RL1N-D-A24	RL2N-D-A24	RL1B-D-A24	RL2B-D-A24
	100V - 120V	RL1N-D-A100	RL2N-D-A100	RL1B-D-A100	RL2B-D-A100
	200V - 240V	RL1N-D-A200	RL2N-D-A200	RL1B-D-A200	RL2B-D-A200

Specifications

		RL1	RL2
Number of poles		1 pole	2 poles
Contact Configuration		1X (SPST, double make)	2X (DPST, double make)
Contact material		Ag Alloy	Ag Alloy
Operating Time and Release Time		30ms max	30ms max
Degree of Protection		IP40	IP40
Dielectric strength	Between contact and coil	4,000V AC for 1 minute	4,000V AC for 1 minute
	Between pole	2,000V AC for 1 minute	2,000V AC for 1 minute
	Between contact sets	-	2,000V AC for 1 minute
Vibration Resistance	Operating extremes	Frequency 10 to 55 Hz, Amplitude 0.75mm	Frequency 10 to 55 Hz, Amplitude 0.75mm
	Damage limits	Frequency 10 to 55 Hz, Amplitude 0.75mm	Frequency 10 to 55 Hz, Amplitude 0.75mm
Shock Resistance	Operating extremes	100 m/s ² (10G)	100 m/s ² (10G)
	Damage limits	1,000 m/s ² (100G)	1,000 m/s ² (100G)
Electrical Life (rated load). Operation frequency (1800 operations per hour)	AC resistive load	200,000 operations min	200,000 operations min
	Inductive load	100,000 operations min	100,000 operations min
Mechanical Life (without load)		1,000,000 operations min	1,000,000 operations min
Operating Temperature		-25 to +55°C	-25 to +55°C
Operating Humidity		5 to 85% (without condensation)	5 to 85% (without condensation)
Weight		Between 90 and 135 grams, depending on model	Between 90 and 135 grams, depending on model

Part Number Structure



RL Series Power Relays

Standards Compliance

Agency ratings	RL1	RL2
Standard current ratings	30 A, 277 Vac, General Use, 100,000 Cycles	25 A, 277 Vac, General Use, 100,000 cycles
HP ratings	1.5 HP, 120 Vac, 10,000 Cycles	1.5 HP, 120 Vac, 10,000 Cycles
	3 HP, 277 Vac, 30,000 Cycles	3 HP, 277 Vac, 30,000 Cycles
FLA and LRA ratings	20 FLA, 120 LRA, 120 Vac, 50/60 Hz, 30,000 Cycles	20 FLA, 120 LRA, 120 Vac, 50/60 Hz, 30,000 Cycles
	17 FLA, 102 LRA, 277 Vac, 50/60 Hz, 30,000 Cycles	17 FLA, 102 LRA, 277 Vac, 50/60 Hz, 30,000 Cycles

Coil Ratings

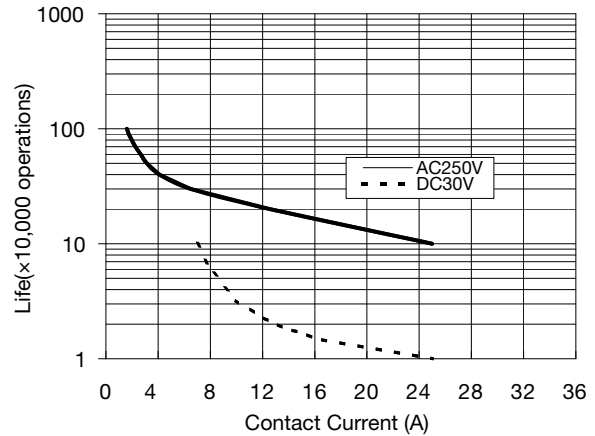
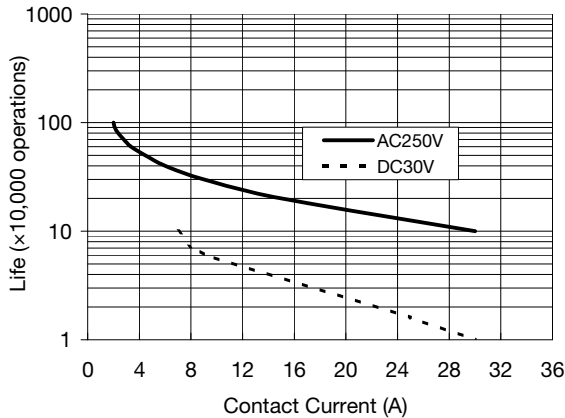
Rated Voltage	Coil Voltage Code	Rated Current (mA) ±10%	Coil Resistance (Ω)	Operating Characteristics at 20°C			Power Consumption
				Pickup Voltage	Dropout Voltage	Maximum Allowable Voltage	
DC	12V	D12	160	80% max	15% min	110%	1.9W
	24V	D24	79.0				1.9W

Rated Voltage	Coil Voltage Code	Rated Current (mA) +15% -25%		Coil Resistance (Ω)	Operating Characteristics at 20°C			Power Consumption
		50Hz	60Hz		Pickup Voltage	Dropout Voltage	Maximum Allowable Voltage	
AC (50-60Hz)	24V	A24	71.0	69.5	80% max	10% min	110%	1.7-2.5VA
	100V - 120V	A100	17.0	16.6				1.7-2.5VA
	200V - 240V	A200	8.5	8.1				1.7-2.5VA

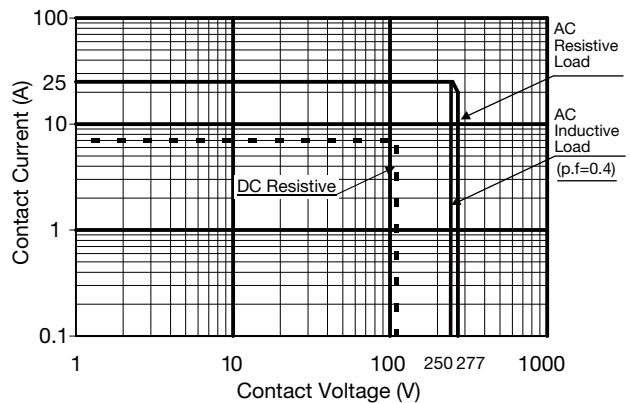
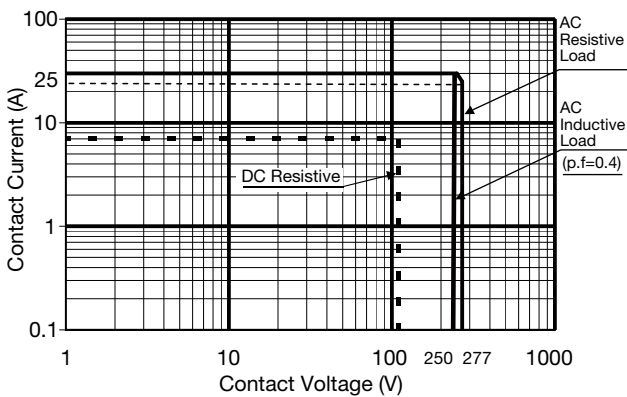
Contact Ratings

		RL1	RL2
Allowable Contact Power	Resistive load	7500VA	6250VA
Rated Load	Resistive load	250VAC 30A, 30VDC 30A	250VAC 25A, 30VDC 25A
Allowable Switching Current		30A	25A
Allowable Switching Voltage		277VAC	

Electrical Life curves



Maximum Switching Current

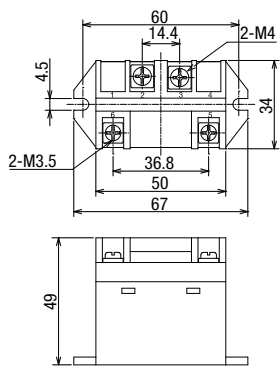


- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

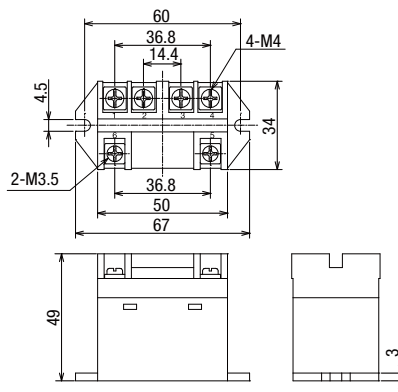
- Relays
- Sockets
- DIN Rail Products
- RJ
- RU
- RV8H
- RL

Dimensions

RL1N-T Screw Terminal 1 Pole Flange Mount

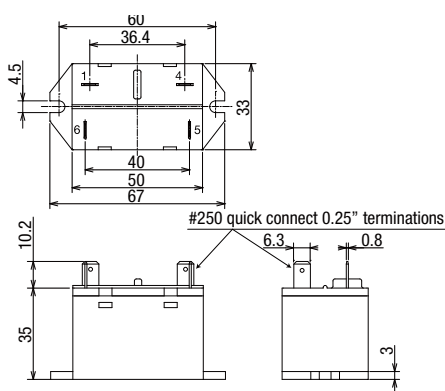


RL2N-T Screw Terminal 2 Pole Flange Mount

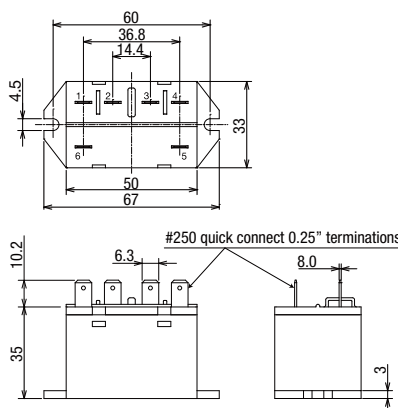


Recommended tightening torque: Coil terminals (M3.5): 0.7 - 0.9 N-m, Contact terminals (M4): 1.0 - 1.4 N-m

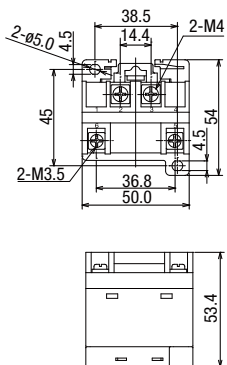
RL1B-T Quick Connect Terminal 1 Pole Flange Mount



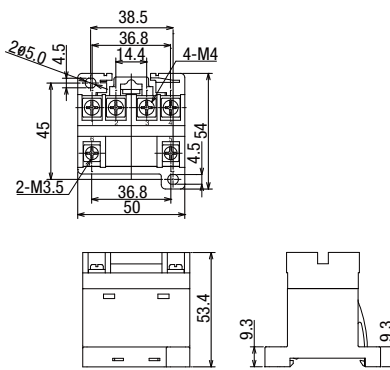
RL2B-T Quick Connect Terminal 2 Pole Flange Mount



RL1N-D Screw Terminal 1 Pole DIN Rail Mount

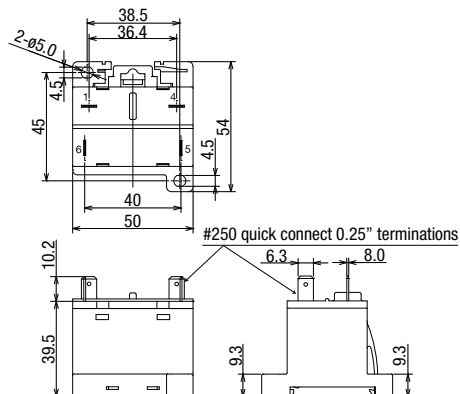


RL2N-D Screw Terminal 2 Pole DIN Rail Mount

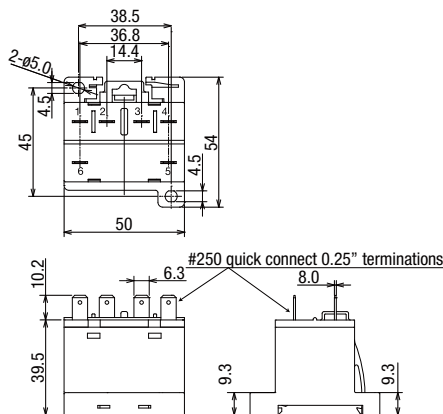


Recommended tightening torque: Coil terminals (M3.5): 0.7 - 0.9 N-m, Contact terminals (M4): 1.0 - 1.4 N-m

RL1B-D Quick Connect Terminal 1 Pole DIN Rail Mount



RL2B-D Quick Connect Terminal 2 Pole DIN Rail Mount

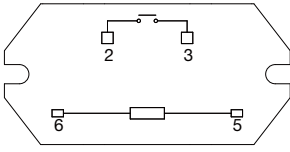


All dimensions in mm.

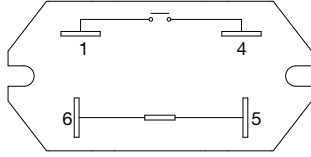
RL Series Power Relays

Terminal Arrangements (Top View)

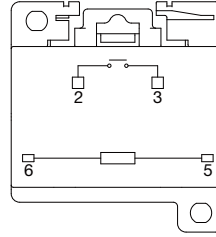
**Screw Terminal
1 Pole Flange Mount**



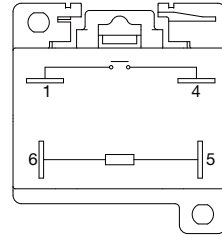
**Quick Connect Terminal
1 Pole Flange Mount**



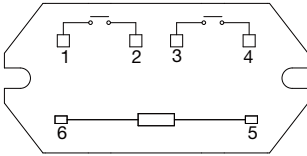
**Screw Terminal
1 Pole DIN Rail Mount**



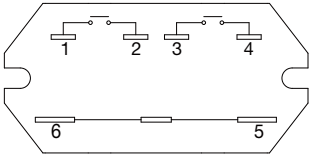
**Quick Connect Terminal
1 Pole DIN Rail Mount**



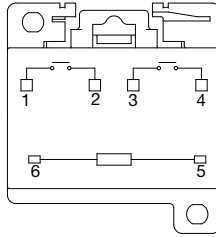
**Screw Terminal
2 Pole Flange Mount**



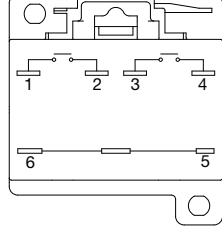
**Quick Connect Terminal
2 Pole Flange Mount**



**Screw Terminal
2 Pole DIN Rail Mount**

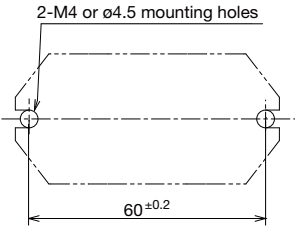


**Quick Connect Terminal
2 Pole DIN Rail Mount**

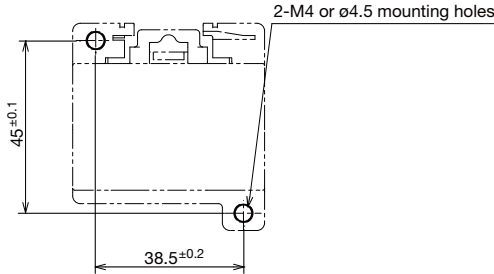


Mounting Hole Dimensions

Flange Mount



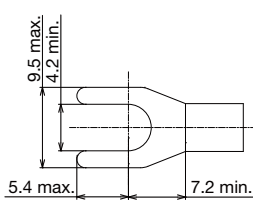
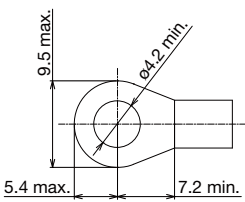
DIN Rail Mount with Panel Mount Tabs



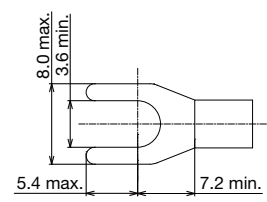
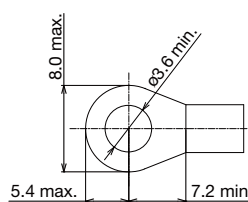
RU Recommended tightening torque: 0.6 - 0.9 N·m

Recommended ring or fork terminations for screw terminals


Contact Terminals



Coil Terminals



Accessories

Description	Color	Part Number	Applicable Model	Package Quantity
Finger-safe terminal cover 	Clear	RL9Z-C	RL1N-T-□ RL2N-T-□ RL1N-D-□ RL2N-D-□	1

Applicable for screw terminal models only

Item	Part No.	Ordering Part No.	Package Quantity	Remarks
DIN Rail (1000mm×35mm)	BAA1000	BAA1000PN10	10	Aluminum Approx. 200g
End Clip	BNL6	BNL6PN10	10	Metal (zinc-plated steel) Approx. 15g

See **H-071** for details on DIN rail products.

- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

Relays

Sockets

DIN Rail Products

RJ

RU

RV8H

RL

Safety Precautions

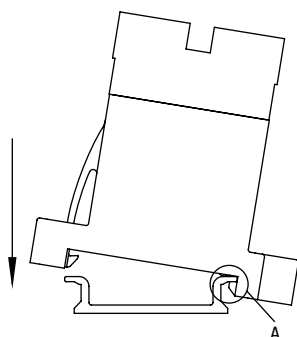
Turn off the power to the relay before starting installation, removal, wiring, maintenance, and inspection of the relays. Failure to turn power off may cause electrical shock or fire hazard. Observe specifications and rated values, otherwise electrical shock or fire hazard may be caused.

Use wires of the proper size to meet the voltage and current requirements. Tighten the terminal screws on the relay socket to the proper tightening torque.

Instructions

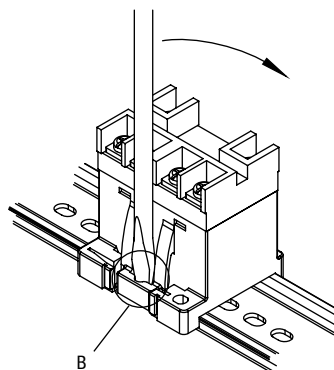
DIN Rail Mount

Mount A to the DIN rail as shown below and push-in in the direction of the arrow.



Removing from DIN rail

Insert the flat screw driver to B on the relay, pull in the direction of the arrow, and remove the relay from the DIN rail .



Ordering Terms and Conditions

Thank you for using IDEC Products.

By purchasing products listed in our catalogs, datasheets, and the like (hereinafter referred to as "Catalogs") you agree to be bound by these terms and conditions. Please read and agree to the terms and conditions before placing your order.

1. Notes on contents of Catalogs

- (1) Rated values, performance values, and specification values of IDEC products listed in this Catalog are values acquired under respective conditions in independent testing, and do not guarantee values gained in combined conditions.
Also, durability varies depending on the usage environment and usage conditions.
- (2) Reference data and reference values listed in Catalogs are for reference purposes only, and do not guarantee that the product will always operate appropriately in that range.
- (3) The specifications / appearance and accessories of IDEC products listed in Catalogs are subject to change or termination of sales without notice, for improvement or other reasons.
- (4) The content of Catalogs is subject to change without notice.

2. Note on applications

- (1) If using IDEC products in combination with other products, confirm the applicable laws / regulations and standards.
Also, confirm that IDEC products are compatible with your systems, machines, devices, and the like by using under the actual conditions. IDEC shall bear no liability whatsoever regarding the compatibility with IDEC products.
- (2) The usage examples and application examples listed in Catalogs are for reference purposes only. Therefore, when introducing a product, confirm the performance and safety of the instruments, devices, and the like before use. Furthermore, regarding these examples, IDEC does not grant license to use IDEC products to you, and IDEC offers no warranties regarding the ownership of intellectual property rights or non-infringement upon the intellectual property rights of third parties.
- (3) When using IDEC products, be cautious when implementing the following.
 - i. Use of IDEC products with sufficient allowance for rating and performance
 - ii. Safety design, including redundant design and malfunction prevention design that prevents other danger and damage even in the event that an IDEC product fails
 - iii. Wiring and installation that ensures the IDEC product used in your system, machine, device, or the like can perform and function according to its specifications
- (4) Continuing to use an IDEC product even after the performance has deteriorated can result in abnormal heat, smoke, fires, and the like due to insulation deterioration or the like. Perform periodic maintenance for IDEC products and the systems, machines, devices, and the like in which they are used.
- (5) IDEC products are developed and manufactured as general-purpose products for general industrial products. They are not intended for use in the following applications, and in the event that you use an IDEC product for these applications, unless otherwise agreed upon between you and IDEC, IDEC shall provide no guarantees whatsoever regarding IDEC products.
 - i. Use in applications that require a high degree of safety, including nuclear power control equipment, transportation equipment (railroads / airplanes / ships / vehicles / vehicle instruments, etc.), equipment for use in outer space, elevating equipment, medical instruments, safety devices, or any other equipment, instruments, or the like that could endanger life or human health
 - ii. Use in applications that require a high degree of reliability, such as provision systems for gas / waterworks / electricity, etc., systems that operate continuously for 24 hours, and settlement systems
 - iii. Use in applications where the product may be handled or used deviating from the specifications or conditions / environment listed in the Catalogs, such as equipment used outdoors or applications in environments subject to chemical pollution or electromagnetic interference
If you would like to use IDEC products in the above applications, be sure to consult with an IDEC sales representative.

3. Inspections

We ask that you implement inspections for IDEC products you purchase without delay, as well as thoroughly keep in mind management/maintenance regarding handling of the product before and during the inspection.

4. Warranty

- (1) Warranty period
The warranty period for IDEC products shall be one (1) year after purchase or delivery to the specified location. However, this shall not apply in cases where there is a different specification in the Catalogs or there is another agreement in place between you and IDEC.
- (2) Warranty scope
Should a failure occur in an IDEC product during the above warranty period for reasons attributable to IDEC, then IDEC shall replace or repair that product, free of charge, at the purchase location / delivery location of the product, or an IDEC service base. However, failures caused by the following reasons shall be deemed outside the scope of this warranty.
 - i. The product was handled or used deviating from the conditions / environment listed in the Catalogs
 - ii. The failure was caused by reasons other than an IDEC product
 - iii. Modification or repair was performed by a party other than IDEC
 - iv. The failure was caused by a software program of a party other than IDEC
 - v. The product was used outside of its original purpose
 - vi. Replacement of maintenance parts, installation of accessories, or the like was not performed properly in accordance with the user's manual and Catalogs
 - vii. The failure could not have been predicted with the scientific and technical standards at the time when the product was shipped from IDEC
 - viii. The failure was due to other causes not attributable to IDEC (including cases of force majeure such as natural disasters and other disasters)Furthermore, the warranty described here refers to a warranty on the IDEC product as a unit, and damages induced by the failure of an IDEC product are excluded from this warranty.

5. Limitation of liability

The warranty listed in this Agreement is the full and complete warranty for IDEC products, and IDEC shall bear no liability whatsoever regarding special damages, indirect damages, incidental damages, or passive damages that occurred due to an IDEC product.

6. Service scope

The prices of IDEC products do not include the cost of services, such as dispatching technicians. Therefore, separate fees are required in the following cases.

- (1) Instructions for installation / adjustment and accompaniment at test operation (including creating application software and testing operation, etc.)
- (2) Maintenance inspections, adjustments, and repairs
- (3) Technical instructions and technical training
- (4) Product tests or inspections specified by you

The above content assumes transactions and usage within your region. Please consult with an IDEC sales representative regarding transactions and usage outside of your region. Also, IDEC provides no guarantees whatsoever regarding IDEC products sold outside your region.

IDEC CORPORATION

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