

Product Details and Certifications

Cross Reference RA Part Number: 700-HLS1U1 A



Product: 700-HLS1U1

Description: 700-HL Solid State Relay Output, , w/ Screw Terminals,
110/125V AC/DC, Touch Safe Terminal Construction



Representative Photo Only (actual product may vary based on configuration sections)

CONTROL RELAY DATA

Bulletin Number	700-HL General Purpose Relay
Output Relay Type	Solid State Relay Output
Connections	Scew Terminals
Build in 2.2mA Leakage Current Suppression Circuit	No
Coil Voltage	110/125V AC/DC
Contact Type	Standard Silver Contacts
NOTE	The Standard package is 10 pc/box

CERTIFICATIONS AND APPROVALS

UL
CSA
CE
ABS
EN
IEE

For UL Certifications Directory:

<http://database.ul.com/cgi-bin/XYV/template/LISEXT/IFRAME/index.htm>



Bulletin No.	700-HC	700-HK	700-HL	700-HP
Type	Interposing/Isolation Relay	Interposing/Isolation Relay	Interposing/Isolation Relay	Interposing/Isolation Relay
Features	<ul style="list-style-type: none"> Blade-style terminals Standard ON/OFF flag indicator Electrical schematic on face Clear cover for visual inspection Optional push-to-test and manual override Optional LED 	<ul style="list-style-type: none"> Optional pilot light Retainer clip (comes with socket) Low switching capacity Push-to-test & manual override 	<ul style="list-style-type: none"> Ideal for PLC Interfaces Built-in Coil Surge Protection Fully Assembled Relay/Socket Standard LED Relay or Solid-state Output Optional: Leakage Current Suppression Solution 	<ul style="list-style-type: none"> PCB "Pin Style" mounting 5 mm pin spacing
Contact Ratings				
Contact Form	DPDT, 4PDT	SPDT, DPDT	SPDT 1 N.O. (SSR)	DPDT
Contact Type	Single	Single	Single	Single
Contact Material	AgNi, AgNi + Gold	AgNi, AgNi + Gold	AgSnO	AgNi, AgNi + Gold
Max. operating current under resistive load	10 A (DPDT) 7 A (4PDT)	8 A (DPDT), 16 A (SPDT)	6 A (SPDT), 2 A (SSR DC output), 1 A (SSR AC output)	8 A
Min. permissible load	10V, 10 mA (Gold), 5V, 10 mA or 25V, 2 mA (Silver)	5V 60 mA (Silver), 5V 10 mA (Gold)	12V 6 mA (72 mW) Silver 8V, 2.5 mA (20 mW) Gold	5V 5 mA (50 mW) Gold, 5V 5 mA (300 mW) Silver
Coil Ratings				
Coil Voltage	AC: 6, 12, 24, 120, 240V DC: 6, 12, 24, 48, 110V	AC: 6, 12, 24, 120, 240V DC: 6, 12, 24, 48, 110V	AC: 12, 24, 48, 110, 120, 230, 240V DC: 12, 24, 48, 125, 230, 240V	AC: 6, 12, 24, 120, 240V DC: 6, 12, 24, 48, 110V
Permissible Coil Voltage Variation	80...110% of Nominal Voltage at 50 Hz 80...110% of Nominal Voltage at 60 Hz 80...110% of Nominal Voltage at DC	80...110% of Nominal Voltage at 50 Hz 80...110% of Nominal Voltage at 60 Hz 73...110% of Nominal Voltage at DC	85...110% of Nominal Voltage at 50 Hz 85...110% of Nominal Voltage at 60 Hz 80...110% of Nominal Voltage at DC	80...110% of Nominal Voltage at 50 Hz 80...110% of Nominal Voltage at 60 Hz 73...150% of Nominal Voltage at DC
Electrical Ratings				
Dielectric Withstand Voltage	Pole-to-pole: 1000V Contact-to-coil: 2000V Contact-to-frame: 2000V	Pole-to-pole: 1500V AC Contact-to-coil: 1500V AC Contact-to-frame: 1500V AC	Pole-to-pole: 1000V AC Contact-to-coil: 4000V Contact-to-frame: 1500V	Pole-to-pole: 2000V Contact-to-coil: 5000V
Electric Service Life (cycles)	100 000 minimum	100 000 minimum	100 000 minimum	100 000 minimum
Reference				
Certifications	CE, cULus, cURus, CSA, Lloyds	CE, UL, UR, CSA	CE, cURus, cULus, ABS	CE, cULus, cURus, CSA, Lloyds
Socket Type	700-HN103, 700-HN128, 700- HN104	700-HN121, -HN221 700-HN122, -HN222 700-HN223, -HN224	—	700-HN123, -HN230
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Bulletin 700-HL — "Terminal Block Relay"

- Relay and socket assembled interface modules for high density interposing or isolation applications
- Screw terminal and spring-clamp bases
- 6 A relay, choice of silver or gold contacts
- 2 A solid-state relay — DC output
- 1 A solid-state relay — AC output
- SPDT (relay), 1 N.O. (solid-state)
- Built-in retainer clip and snap-in marker lever
- Standard LED, reverse polarity protection, and surge protection *
- Externally replaceable relay modules
- Unique leakage current suppression version to address industry concerns of nuisance coil turn-on or contact non-drop out when connecting to PLCs with leakage current
- Available with hazardous location certification

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Product Selection

Standard built-in Features: <ul style="list-style-type: none"> • LED • Reverse Polarity Protection for DC Inputs • Coil Surge Protection * 				
	Cat. No. 700-HLT1Z24	Cat. No. 700-HLT2Z24	Cat. No. 700-HLS1Z24	Cat. No. 700-HLS11Z24
Specifications				
Output Type	SPDT (1 C/O); $I_{th} = 6A\ddagger$		1 N.O. solid-state; $I_{th} = 2 A, 24V DC$ or $I_{th} = 1 A, 240V AC$	
Recommended Tightening Torque	0.5 N•m max. (4.4 lb•in)			
Wire Range	Screw Terminal: 0.14 mm ² ...2.5 mm ² (#26...#14 AWG), Spring Terminal: 0.2 mm ² ...2.5 mm ² (#24...#14 AWG)			
Approvals	UL, cULus, cURus, ABS, CE			

Assembled Devices	Pkg. Quantity	Cat. No. (Screw Terminals)	Cat. No. (Spring Clamp Terminals)	Pkg. Quantity	Cat. No. (Screw Terminals) (DC Output)	Cat. No. (Spring Clamp Terminals) (DC Output)	Cat. No. (Screw Terminals) (AC Output)
Input Voltage							
12V DC	10	* 700-HLT1Z12	700-HLT2Z12	—	—	—	—
24V DC	10	* 700-HLT1Z24	700-HLT2Z24	10	* 700-HLS1Z24	700-HLS2Z24	700-HLS11Z24
48V DC	10	* 700-HLT1Z48	700-HLT2Z48	10	* 700-HLS1Z48	700-HLS2Z48	700-HLS11Z48
12V AC/DC	10	700-HLT1U12	700-HLT2U12	—	—	—	—
24V AC/DC	10	700-HLT1U24	700-HLT2U24	—	—	—	—
48V AC/DC	10	700-HLT1U48	700-HLT2U48	—	—	—	—
110/125V AC/DC	10	700-HLT1U1	700-HLT2U1	10	* 700-HLS1U1	700-HLS2U1	700-HLS11U1
220...240V AC/DC	10	700-HLT1U2	700-HLT2U2	10	* 700-HLS1U2	700-HLS2U2	700-HLS11U2
240V AC	10	700-HLT1A2	—	—	—	—	—
Built-in LCSC (leakage current suppression circuit) 120V AC and 125V DC§	10	* 700-HLT1L1	—	10	* 700-HLS1L1	—	700-HLS11L1
Built-in LCSC (leakage current suppression circuit) 240V AC§	10	* 700-HLT1L2	—	10	* 700-HLS1L2	—	700-HLS11L2
Hazardous Location Certification 24V DC	10	700-HLT1Z24-EX	—	10	700-HLS1Z24-EX	—	—
Hazardous Location Certification 12V DC	10	700-HLT1Z12-EX	—	10	—	—	—
Hazardous Location Certification 110/125V AC/DC	10	700-HLT1U1-EX	—	10	700-HLS1U1-EX	—	—

* Reverse polarity on the output terminals of the solid-state relay will result in the output being "On" regardless of the state of the input voltage.

* Electromechanical relay to solid-state relay interchangeability is possible.

‡ For Gold-plated contacts: Add the letter "X" at the end of the catalog number. For example: if Cat. No. 700-HLT1Z24 is required with gold plating, the new cat. no. is 700-HLT1Z24X.

§ Leakage current suppression up to 2.2 mA off state current.

* Diode surge protection provided.

Bulletin 700-HL
Interposing/Isolation Relays
 Specifications



Cat. No. 700-HLS... (Solid State Output)						
Electrical						
Rated Thermal Current (I_{th})		2 A (DC output)			1 A (AC output)	
Rated Insulation Voltage (U_i)	250V IEC, 300V UL/CSA					
Control Circuit	Min. Control Voltage	80% nominal voltage				
	Maximum Control Voltage	110% nominal voltage				
	Control Current	9 mA \pm 10% (24V) 4 mA \pm 10% (120/240V)				
	Release Voltage	0.4 x nominal voltage (24V), 0.35 x nominal voltage (120/240V)				
	Min. Control Circuit Resistance	3200 ohms (24V), 16k ohms (120V), 32k ohms (240V)		2500 ohms (24V), 12k ohms (120V), 24k ohms (240V)		
Outputs	Load Voltage Range	0...24V DC			24...240V AC	
	Max. Repetitive Blocking Voltage	33V			600V	
	Max. Switching Current (inductive/resistive)	2 A DC			1 A AC	
	On State Voltage Drop @ Max. Switching Current	<120 mV DC			<1V AC	
	Leakage Current	max. 100 μ A (@U = 24V)				
Power Consumption \pm 10%	AC	0.6 VA (120V), 1 VA (240V)				
	DC	0.2 W			0.3 W	
Design Specification/Test Requirements						
Dielectric Withstand Voltage	Pole to Pole (VRMS)	2500V				
	Contact to Coil (VRMS)	2500V				
Input Voltage	24V DC	48V DC	120V AC/DC	240V AC/DC	120V LCSC	240V LCSC
Impedance (Ohms)	2K	9 K	26 K	58 K	16 K	35 K
Mechanical						
Degree of Protection	IP20					
Input Voltages	See Overview/Product Selection					
Operating Time at Nominal Voltage at 20 °C (ms)	Turn on Time	30 μ s (DC only input voltage), 7 ms (AC/DC input voltage)				
	Drop Out Time	350 μ s (DC only input voltage), 10 ms (AC/DC input voltage)				
Maximum Operating Rate	300 Hz					
Environmental						
Temperature	Operating	-20...+55 °C				
	Storage	-40...70 °C				
Altitude	2000 m (6560 ft)					
Construction						
Insulating Material	Molded High-Dielectric Material					
Enclosure	Relay IP67					
Terminal Markings on Socket	In accordance with EN50 0005					
Certifications	cULus Listed (File No. E14843, Guide NLDX/NLDX7), CE Marked, ABS (American Bureau of Shipping)					
Standards	UL 508, CSA C22.2 No. 14, EN/IEC 60947-1, -5-1					
Hazardous Location Approvals	Class 1, Zn 2, Groups IIC, Ex nC IIC T5 Ta < 55 °C					
	UL Listed (UL 60079-15)	700-HLT1Z24-EX, 700-HLS1Z24-EX (24V DC supply) 700-HLT1U1-EX, 700-HLS1U1-EX (110V/125V AC/DC supply)				
	CSA Certified* (CAN/CSA 60079-15)	700-HLT1Z24-EX, 700-HLS1Z24-EX (24V DC supply)				

* Product shall be installed in an enclosure providing at least IP54 protection. Provisions shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 40%.