

## KHA Series Panel Plug-in Relay

- Compact package
- Two and four pole form C contact arrangements
- Polycarbonate or nylon dust cover
- Various mounting configurations
- Indicator lamp and push-to-reset options available
- Various contact materials available for specific load requirements



### Typical applications

Industrial sewing/stitching machines, fitness, elevators, pumps, robotics, solar panels



### Approvals

UL E22575; CSA LR15734  
 Technical data of approved types on request

### Contact Data

Contact arrangement	2 form C (2CO), 4 form C (4CO)
Rated voltage	240VAC
Rated current	1-5A
Contact material	Ag, AgCdO, Au-AgNi, Au overlay Ag, Au diffused Ag
Contact style	Single contact or bifurcated crossbar
Min. recommended contact load	
Ag (single contact)	100mA, 12VDC
AgCdO (single contact)	300mA, 12VDC
Au-AgNi (single contact)	10mA, 12VDC
Au overlay Ag (bifurcated crossbar)	Dry circuit
Au diffused Ag (single contact)	50mA, 12VDC
Initial contact resistance	
Ag, AdCdO	100mΩ
Au-AgNi, Au overlay Ag, Au diffused Ag	200mΩ
Frequency of operation	360 ops./hour
Operate/release time max.	13/6ms

### Contact ratings

Type	Load	Cycles
<b>UL 508</b>		
Ag	5A, 120VAC, general purpose	
	2.5A, 240VAC, general purpose	
	1/10HP, 120/240VAC	
	180VA, 250VAC, pilot duty	
AgCdO	42VA, 28VDC, pilot duty	
	5A, 240VAC, general purpose	
	5A, 28VDC, resistive	
	1/10HP, 120/240VAC	
Au-AgNi	180VA, 250VAC, pilot duty	
	42VA, 28VDC, pilot duty	
	2A, 120VAC, resistive	
	Au overlay Ag	1A, 120VAC
Au diffused Ag	1A, 30VDC	
	5A, 120VAC, general purpose	
	2.5A, 240VAC, general purpose	
	1/10HP, 120/240VAC	
	180VA, 250VAC, pilot duty	
	42VA, 28VDC, pilot duty	

Note: The relay should only carry ≤15A continuously (all poles combined).

Mechanical endurance	10x10 <sup>6</sup> ops.
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### Coil Data

Coil voltage range	5 to 240VDC 6 to 240VAC
Coil insulation system according UL	Class B

### Coil versions, DC coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
5	5	3.75	3.2	32	800
6	6	4.5	4.0	40	900
12	12	9.0	8.0	160	900
24	24	18.0	16.0	650	850
48	48	36.0	32.0	2600	900
110	110	82.5	74.0	11000	1100
	220/240			Use 110V relay with series dropping 5W resistor of 11KΩ	

All figures are given for coil without preenergization, at ambient temperature +23°C.

### Coil versions, AC coil

Coil code	Rated voltage VAC	Operate voltage VAC	Coil resistance Ω±15%	Rated coil power VA
6	6	5.1	10.5	1.2
12	12	10.2	43	1.2
24	24	20.4	160	1.25
48	48	40.8	668	1.2
120	120	102.0	3900	1.35
240	240	204.0	12000	1.5

All figures are given for coil without preenergization, at ambient temperature +23°C.

### Insulation Data

Initial dielectric strength	
between open contacts	1000V <sub>rms</sub>
between contact and coil	1500V <sub>rms</sub>
between adjacent contacts	1500V <sub>rms</sub>
between coil and frame	1500V <sub>rms</sub>
Initial insulation resistance	
between insulated elements	100MΩ at 500VDC

### Other Data

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at <a href="http://www.te.com/customer-support/rohssupportcenter">www.te.com/customer-support/rohssupportcenter</a>	
Ambient temperature	-45°C to 70°C
Category of environmental protection	
IEC 61810	RT1 - dust protected

## KHA Series Panel Plug-in Relay (Continued)

### Other Data (continued)

Terminal type	solder/plug-in .105" (2.67mm), pcb-tht .112" (2.84mm)
Weight	45g
Packaging/unit	tray/50 pcs., box/250pcs.

### Accessories

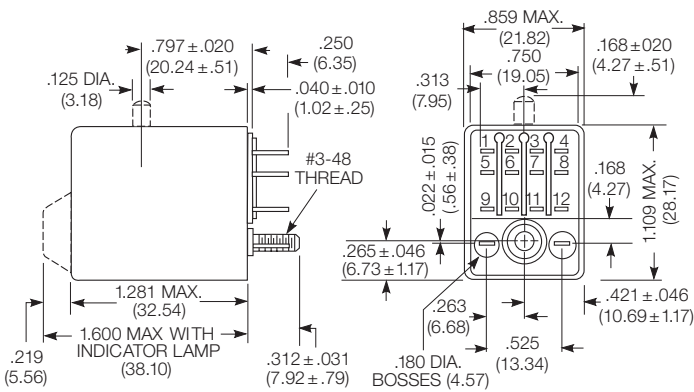
For details see datasheet Sockets and Accessories, KHA Relays

Product Code	Description
27E894	DIN socket (use 20C426 clip)
27E166	Panel/track mount socket (use 20C297 clip)
27E006	Solder/grounding socket (use 20C217 clip)
27E007	PCB/grounding socket (use 20C217 clip)

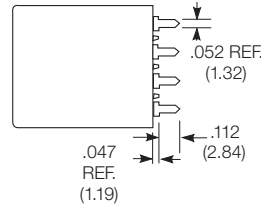
**NOTE:** Relays with contact current <50mA are not recommended for use in sockets.

### Dimensions

KHAU and KHAX types



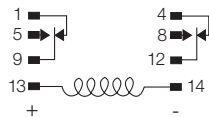
PCB terminals  
KHAE and KHAF types



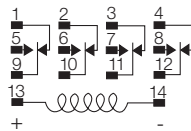
Printed circuit terminal thickness .022 (.558)

### Terminal assignment

2 form C



4 form C

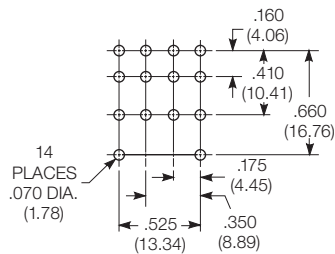


Polarity shown for LED indicator

### PCB layout

Bottom view on solder pins

4 pole version



## KHA Series Panel Plug-in Relay (Continued)

### Product code structure

Typical product code

**KHA U -17 A 1 1 B -120**

#### Type

**KHA** General purpose multi-contact relay  
Note: Some KHA models available in KH construction. Specify KH instead of KHA.

#### Version

**E** Printed circuit terminals, nylon dust cover, contacts rated opposite polarity (UL & CSA)  
**U** Solder terminals, clear polycarbonate dust cover, contacts rated same polarity (UL & CSA)  
**F** Printed circuit terminals, nylon dust cover, contacts rated same polarity (UL & CSA)  
**X** Solder terminals, clear polycarbonate dust cover, contacts rated opposite polarity (UL & CSA)

#### Contact arrangement

**11** 2 form C (2CO)      **17** 4 form C (4CO)

#### Coil input

**A** AC      **D** DC

#### Mounting and termination

**1** Socket mount, solder terminals on U versions; printed circuit terminals on E versions  
**T** Top flange mount, solder terminals on U versions; printed circuit terminals on E versions  
Note 1: Mounting options with solder terminals and stud on narrow, broad and end side on request

#### Contact material

**1** Ag      **2** AgCdO  
**3** Au-AgNi (Note 2)      **6** Bifurcated crossbar, Au overlay Ag  
**8** Au diffused Ag

Note 2: contact material code 3 is not available with relay version E

#### Options

**B** Push to test button. (not available on version E relays with 4 form C contacts)  
**N** Neon indicator. Only available with version U, 120VAC or 110VDC coils.  
**H** Neon indicator and push to test button. Only available with version U, 120VAC or 110VDC coils  
**L** LED indicator. Only available with version U, 6-48VAC or VDC coils.  
**M** LED indicator and push to test button. Only available with version U, 6-46VAC or VDC coils.

#### Coil voltage

Coil code: please refer to coil versions table

Product Code	Arrangement	Contact Material	Coil	Terminals	Options	Part Number
KHAU-11A11-120	2 form C, 2 CO	Ag	120VAC	Solder/Plug-in	None	1-1393122-0
KHAU-11D11-24			24VDC			1-1393122-5
KHAE-17D12-24	4 form C, 4 CO	AgCdO		PCB		1393122-1
KHAU-17A11-12		Ag	12VAC	Solder/Plug-in		1-1393122-9
KHAU-17A11-24			24VAC	Solder		2-1393122-1
KHAU-17A11-120			120VAC			2-1393122-0
KHAU-17A11N-120					Indicator	2-1393122-6
KHAU-17A12-120		AgCdO			None	2-1393122-8
KHAU-17A13-120		Au-Ag-Ni				3-1393122-6
KHAU-17A16-24		Bifurcated, Au overlay Ag	24VAC			3-1393122-8
KHAU-17A16-120		Ag	120VAC			3-1393122-7
KHAU-17A18-120		Au diffused Ag				3-1393122-9
KHAU-17D11-6		Ag	6VDC			4-1393122-7
KHAU-17D11-12			12VDC			4-1393122-3
KHAU-17D11-24			24VDC			4-1393122-4
KHAU-17D11-48			48VDC			4-1393122-5
KHAU-17D11-110			110VDC			4-1393122-2
KHAU-17D12-12		AgCdO	12VDC			5-1393122-5
KHAU-17D12-24			24VDC			5-1393122-7
KHAU-17D12-48			48VDC			5-1393122-8
KHAU-17D12-110			110VDC			5-1393122-4
KHAU-17D16-12		Bifurcated, Au overlay Ag	12VDC			7-1393122-0
KHAU-17D16-24			24VDC			7-1393122-1
KHU-17A11N-120		Ag	120VAC		Indicator, Old Const.	2-1393123-8
KHU-17D11-12			12VDC		Old Construction	4-1393123-0
KHU-17D12-24		AgCdO	24VDC			4-1393123-8