

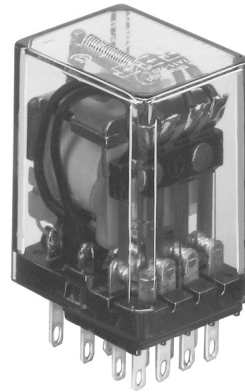
# POTTER & BRUMFIELD KHA SERIES PANEL PLUG-IN RELAY

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## GENERAL PURPOSE INDUSTRIAL RELAYS

### FEATURES

- 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



### APPLICATIONS

- Industrial sewing/stitching machines
- Fitness
- Elevators
- Pumps
- Robotics
- Solar panels

### APPROVALS

- UL E22575
- CSA LR15734



Technical data of approved types on request

# POTTER & BRUMFIELD KHA SERIES PANEL PLUG-IN RELAY

## GENERAL PURPOSE INDUSTRIAL RELAYS

### CONTACT DATA

Contact arrangement	2 form C (2CO), 4 form C (4CO)
Rated voltage	240VAC
Rated current	1-5A
Contact material	Ag, AgCdO, Au-Ag-Ni, 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 42VA, 28VDC, pilot duty	-
AgCdO	5A, 240VAC, general purpose 5A, 28VDC, resistive 1/10HP, 120/240VAC 180VA, 250VAC, pilot duty 42VA, 28VDC, pilot duty	-
Au-AgNi	2A, 120VAC, resistive	-
Au overlay Ag	1A, 120VAC 1A, 30VDC	-
Au diffused Ag	5A, 120VAC, general purpose 2.5A, 240VAC, general purpose 1/10HP, 120/240VAC 180VA, 250VAC, pilot duty 42VA, 28VDC, pilot duty	-
Mechanical endurance		10x10 <sup>6</sup> ops.

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

### 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 coil resistance Ω±10%	Rated coil power mW
5	5	3.75	32	800
6	6	4.5	40	900
12	12	9.0	160	900
24	24	18.0	650	850
48	48	36.0	2600	900
110	110	82.5	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 VDC	Operate voltage VDC	Release 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.

# POTTER & BRUMFIELD KHA SERIES PANEL PLUG-IN RELAY

## GENERAL PURPOSE INDUSTRIAL RELAYS

### INSULATION DATA

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

### ACCESSORIES

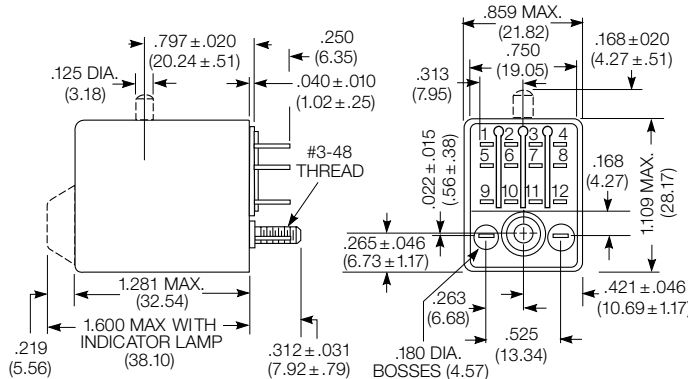
For details see datasheet	<a href="#">Sockets and Accessories, KHA Relays</a>
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Product code	Description
<a href="#">27E894</a>	DIN socket (use 20C426 clip)
<a href="#">27E166</a>	Panel/track mount socket (use 20C297 clip)
<a href="#">27E006</a>	Solder/grounding socket (use 20C217 clip)
<a href="#">27E007</a>	PCB/grounding socket (use 20C217 clip)

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

### DIMENSIONS (Unit:mm)

KHAU and KHAX types

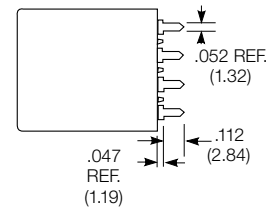


### OTHER DATA

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 range	-45°C to 70°C
Category of environmental protection	
IEC 61810	RTI - dust protected
Terminal type	Solder/plug-in .105" (2.67mm), pcb-tht .112" (2.84mm)
Weight	45g
Packaging/unit	tray/50 pcs., box/250pcs.

### PCB TERMINALS

KHAE and KHAF types



Printed circuit terminal thickness .022 (.558)

### TERMINAL ASSIGNMENT

2 form C

4 form C

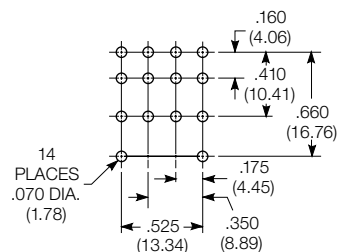


Polarity shown for LED indicator

### PCB LAYOUT

Bottom view on solder pins

4 pole version



# POTTER & BRUMFIELD KHA SERIES PANEL PLUG-IN RELAY

## GENERAL PURPOSE INDUSTRIAL RELAYS

### PRODUCT CODE STRUCTURE

**Typical product code**  
**KHA U -17 A 1 1 B -120**

#### Type

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

#### Version

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

#### Contact arrangement

<b>11</b>	2 form C (2CO)
<b>17</b>	4 form C (4CO)

#### Coil input

<b>A</b>	AC
<b>D</b>	DC

#### Coil voltage

<b>Coil code</b>	please refer to coil versions table
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#### Options

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

#### Contact material

<b>1</b>	Ag
<b>2</b>	AgCdO
<b>3</b>	Au-AgNi (Note 2)
<b>6</b>	Bifurcated crossbar, Au overlay Ag
<b>8</b>	Au diffused Ag

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

#### Mounting and termination

<b>1</b>	Socket mount, solder terminals on U versions; printed circuit terminals on E versions
<b>T</b>	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

## PRODUCT INFORMATION

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

### Notes:

- Datasheets and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.
- Datasheets and product data is subject to the terms of the disclaimer and all chapters of the 'Definitions' section, available at <http://relays.te.com/definitions>.
- Datasheets, product data, 'Definitions' section, application notes and all specifications are subject to change.

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