

## KHAU-17D12-24 Product Details




**KHAU-17D12-24**

TE Internal Number: 5-1393122-7

 Active

### Industrial Relays (General Purpose)

 Converted to EU RoHS but not ELV Compliant  
(Statement of Compliance)

#### Product Highlights:

- KHA Series
- Contact - Current Class = 2A to 5A Class, Less Than 16A
- Contact - Rated Current = 5 A
- Terminal Type = Solder
- Contact - Arrangement = 4 Form C (CO)

### Documentation & Additional Information

#### Product Drawings:

- None Available

#### Catalog Pages/Data Sheets:

- [KHA General Purpose Dry Circuit to 5A Multicontact A...](#) (PDF, English)

#### Product Specifications:

- None Available

#### Application Specifications:

- None Available

#### Instruction Sheets:

- None Available

#### CAD Files: (CAD Format & Compression Information)

- [2D Drawing](#) (DXF, Version C)
- [3D Model](#) (IGES, Version C)
- [3D Model](#) (STEP, Version C)

#### Additional Information:

- [Product Line Information](#)

#### Additional Product Images:

- [Schematic](#)
- [PCB Layout](#)
- [Wiring Diagram](#)

#### Related Products:

- [Tooling](#)

### Product Features (Please use the Product Drawing for all design activity)

#### Product Type Features:

- [Series](#) = KHA
- Terminal Type = Solder

#### Electrical Characteristics:

- Contact - Current Class = 2A to 5A Class, Less Than 16A
- [Contact - Rated Current \(A\)](#) = 5
- Contact - Limiting Continuous Current (A) = 5
- Contact - Limiting Making Current (A) = 5
- Contact - Limiting Breaking Current (A) = 5
- Insulation - Initial Dielectric Between Coil/Contact Class = 1000V to 1500VA Class
- Insulation - Initial Dielectric Between Open Contacts (V rms) = 1000
- Insulation - Initial Dielectric Between Contacts and Coil (V rms) = 1500
- Contact - Rated Voltage (VAC) = 240
- Contact - Limiting Short-Time Current (A) = 5
- Contact - Switching Recommended Load, Min. = 300mA at 12V
- Coil - Rated Voltage (VDC) = 24
- [Coil - Resistance \(Ω\)](#) = 690
- [Coil - Rated Power, DC \(mW\)](#) = 850
- Coil - Rated Power Class = 800mW to 1000mW Class
- Insulation - Initial Dielectric Between Adjacent Contacts (V rms) = 1500
- Insulation - Initial Insulation Resistance (MΩ) = 100000

#### Dimensions:

- Mechanical - Length Class = 25mm to 30mm Class
- Length (mm [in]) = 28.20 [1.111]
- Mechanical - Width Class = 20mm to 25mm Class
- Width (mm [in]) = 21.80 [0.858]
- Mechanical - Height Class = 30mm to 40mm Class
- Height (mm [in]) = 32.50 [1.261]

#### Body Features:

- Mount Type = Socket
- Weight (g [oz]) = 45.00 [1.587]

#### Contact Features:

- Contact Material = AgCdO
- Contact - Number of Poles = 4

#### Configuration Features:

- [Contact - Arrangement](#) = 4 Form C (CO)
- [Coil - Magnetic System](#) = Monostable, DC
- Coil - Special Features = UL Coil Insulation Class B

#### Industry Standards:

- [RoHS/ELV Compliance](#) = RoHS/Not ELV Compliant
- [Lead Free Solder Processes](#) = Not relevant for lead free process
- RoHS/ELV Compliance History = Converted to comply with RoHS not ELV directives
- Approved/Registered Standards = UL, CSA

#### Environmental:

- Environmental - Category of Protection = RTI
- Environmental - Ambient Temperature, Max. (°C [°F]) = 70 [158]
- Environmental - Ambient Temperature Class = 50°C to 70°C Class

#### Packaging Features:

- Packaging Method = Tray

#### Other:

- Brand = Potter & Brumfield
- Accessories/Socket Type = DIN-rail Socket, Panel Socket, PCB Socket, Solder Socket

**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, 120VAC, general purpose	
	2.5A, 240VAC, general purpose	
	1/10HP, 120/240VAC	
Au-AgNi	180VA, 250VAC, pilot duty	
	42VA, 28VDC, pilot duty	
	5A, 240VAC, general purpose	
	5A, 28VDC, resistive	
Au overlay Ag	2A, 120VAC, resistive	
	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.

**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 resistance Ω±10%	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	690	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 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**

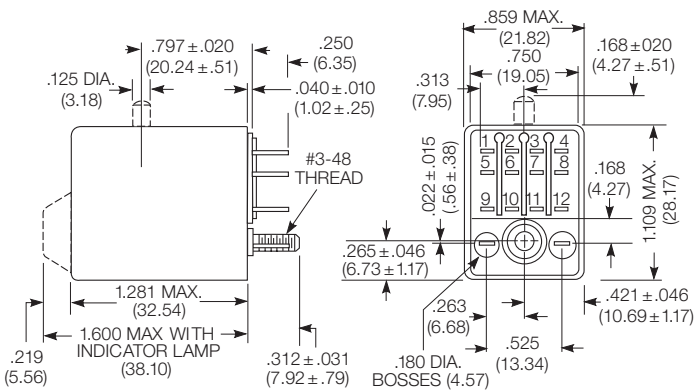
For details see datasheet      Sockets and Accessories, KHA Relays

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)

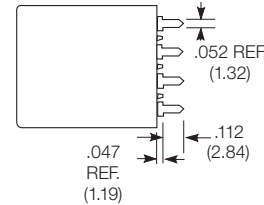
**NOTE:** Relays with contact current <50mA are not recommended for use in sockets.

**Dimensions**

KHAU and KHAX types



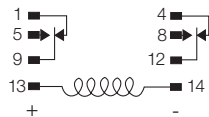
PCB terminals  
KHAE and KHAF types



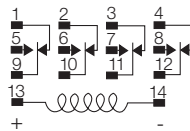
Printed circuit terminal thickness .022 (.558)

**Terminal assignment**

2 form C



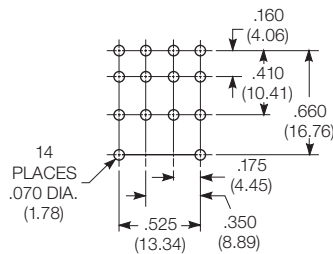
4 form C



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**

<b>Type</b>	
<b>KHA</b>	General purpose multi-contact relay Note: Some KHA models available in KH construction. Specify KH instead of KHA
<b>Version</b>	
<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).
<b>Contact arrangement</b>	
<b>11</b>	2 form C (2CO)
<b>17</b>	4 form C (4CO)
<b>Coil Input</b>	
<b>A</b>	AC
<b>D</b>	DC
<b>Mounting and termination</b>	
<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	
<b>Contact material</b>	
<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	
<b>Options</b>	
<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, 6-48VAC or VDC coils.
<b>Coil voltage</b>	
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
KHAU-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