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
UL 508		
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	

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

Mechanical endurance	$10x10^6$ 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 voltage VDC	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 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	$1000V_{rms}$
between contact and coil	$1500V_{rms}$
between adjacent contacts	$1500V_{rms}$
between coil and frame	$1500V_{rms}$
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 www.te.com/customersupport/rohssupportcenter
Ambient temperature	-45ºC to 70ºC
Category of environmental protection	
IEC 61810	RTI - 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.

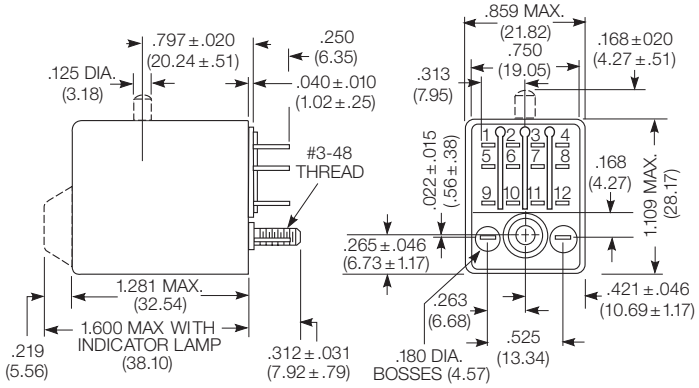
Accessories	
For details see datasheet	Sockets and Accessories, KHA Relays

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)

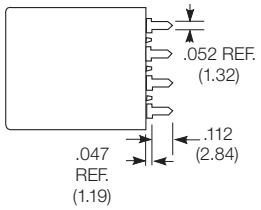
NOTE: Relays with contact current <50mA are not recommended for use in sockets.

Dimensions

KHAU and KHAX types



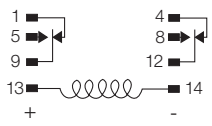
PCB terminals
KHAE and KHAF types



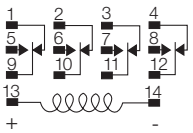
Printed circuit terminal thickness .022 (.558)

Terminal assignment

2 form C



4 form C

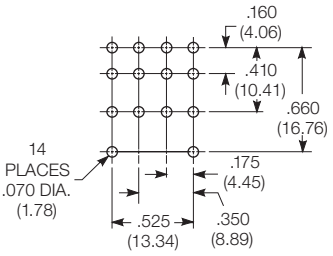


Polarity shown for LED indicator

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