POTTER & BRUMFIELD
KHA SERIES PANEL PLUG-IN RELAY

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

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
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	-
Mechanical endurance		$10x10^6$ 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.

INSULATION DATA

Initial dielectric strength	
between open contacts	1000 V_{rms}
between contact and coil	1500 V_{rms}
between adjacent contacts	1500 V_{rms}
between coil and frame	1500 V_{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 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.

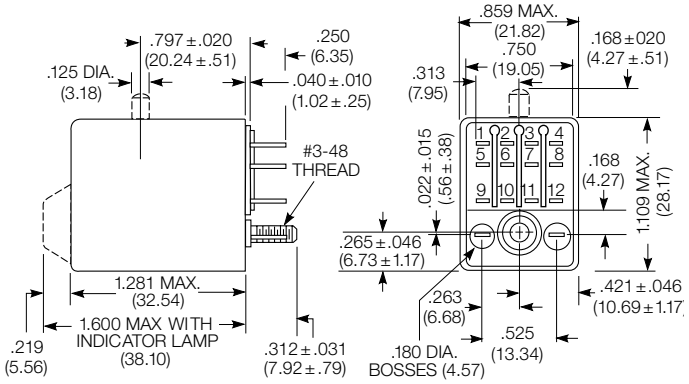
ACCESSORIES

For details see datasheet	Sockets and Accessories, KHA Relays

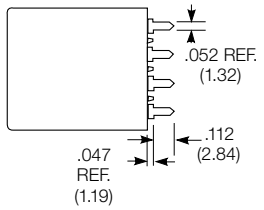
Product code	Description
27E894	DIN socket (use 20C426 clip)
27E166	Panel/track mount socket (use 20C297 clip)
27E006	Solder/grounding socket (use 20C217 clip)
27E007	PCB/grounding socket (use 20C217 clip)

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

DIMENSIONS (Unit:mm)
KHAU and KHAX types

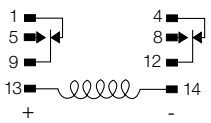


PCB TERMINALS
KHAE and KHAF types



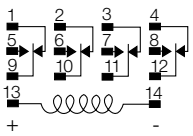
Printed circuit terminal thickness .022 (.558)

TERMINAL ASSIGNMENT
2 form C



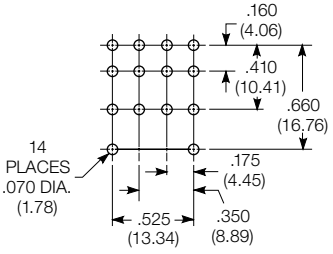
Polarity shown for LED indicator

4 form C



PCB LAYOUT
Bottom view on solder pins

4 pole version



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

Coil voltage

Coil code	please refer to coil versions table

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.

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

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

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	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			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

Notes:

1. Datasheets and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.
2. 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.
3. Datasheets, product data, 'Definitions' section, application notes and all specifications are subject to change.

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