General purpose relays

- Electromechanical and SSR (solid state relay) versions
- AC or DC coils
- Sockets with screw, spring or PIN for Printed Circuit Board terminals
- Relays with LED state indicator and mechanical actuator
- Parallel busbars and surge suppressor filters
- Power relays with Atex certificate.

Page 21-4

HR10
- Slim electromechanical relay with
- Socket width 6.2mm
- 1 changeover contact
- Ith rated current 6A
- Sockets with built-in LED
- Sockets with screw or spring terminals
- Control voltage from 12 to 230VAC/DC
- 20 poles parallel busbars
- Available version with relay factory assembled on the socket.

Page 21-4

HR20
- Slim solid state relay (SSR)
- Socket width 6.2mm
- 1 solid-state (SSR) output
- Output current 2A in AC and 4A in DC
- Sockets with built-in LED
- Sockets with screw or spring terminals
- Control voltage 24VDC
- 20 poles parallel busbars
- High switching speed
- Theoretically infinite electrical life
- Zero crossing.

Page 21-5

HR30
- Miniature relay
- Socket width 15.8mm
- 1 or 2 changeover contacts
- Ith rated current:
  – 1 contact: 10A (16A on PCB)
  – 2 contacts: 8A
- AC or DC control voltage
- Sockets with screw, spring or pins for PCB terminals
- 8 poles parallel busbars
- Small dimensions
- Can be used for direct mounting on PCB
- Snap-on surge suppressor filters.

Page 21-6

HR40
- Miniature relay in clear enclosure
- Socket width 15.8mm
- 1 or 2 changeover contacts
- Ith rated current:
  – 1 contact: 10A (16A on PCB)
  – 2 contacts: 10A
- AC or DC control voltage
- Sockets with screw, spring or pins for PCB terminals
- 8 poles parallel busbars
- Clear enclosure for contacts visibility
- Can be used for direct mounting on PCB
- Snap-on surge suppressor filters.

Page 21-6

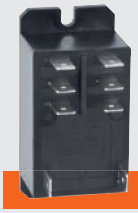
HR50
- Miniature relay with LED status indicator and mechanical actuator
- Socket width 15.8mm
- 1 or 2 changeover contacts
- Ith rated current:
  – 1 contact: 10A (16A on PCB)
  – 2 contacts: 8A
- LED and mechanical status indicator
- Mechanical test actuator with latch option
- AC or DC control voltage
- Sockets with screw, spring or pins for PCB terminals
- 8 poles parallel busbars
- Can be used for direct mounting on PCB
- Snap-on surge suppressor filters.

Page 21-7

HR60
- Industrial relay with LED status indicator and mechanical actuator
- Socket width 27mm
- 2 or 4 changeover contacts
- Ith rated current:
  – 2 contacts: 7A
  – 4 contacts: 5A
- LED and mechanical status indicator
- Mechanical test actuator with latch option
- AC or DC control voltage
- Sockets with screw or spring terminals
- Snap-on surge suppressor filters.

Page 21-8

HR70
- Industrial relay with LED status indicator and mechanical actuator
- Socket width 38mm
- 8-pin and 11-pin industrial relay
- 2 or 3 changeover contacts
- Ith rated current: 10A
- LED and mechanical state indicator
- Mechanical test actuator with latch option
- Versions with AC or DC control.



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HR80
- Power relays with Atex certificate
- In 30A
- 2 normally open or 2 changeover contacts
- Faston terminals
- Screw fixing.

Lovato electric

Relays		Code	Contacts	Rated current	Control voltage	Sockets
SLIM RELAYS		HRA101CE024	1 C/O	6A	24VAC/DC	Version with relay assembled on socket
		HRA101CE024S❶	1 C/O	6A	24VAC/DC	
		HR101CE012	1 C/O	6A	12VAC/DC	HR1XS024 - HR1XS024S❶ 
		HR101CE024	1 C/O	6A	24VAC/DC	
		HR101CE060	1 C/O	6A	110...125VAC/DC❷	HR1XS110 - HR1XS110S❶
					220...240VAC/DC❷	HR1XS230 - HR1XS230S❶
		HR201AS024	1 SSR	2A (AC)	24VDC	HR1XS024 - HR1XS024S❶
		HR201DS024	1 SSR	4A (DC)	24VDC	
MINIATURE RELAYS		HR301CD012	1 C/O	16A❸	12VDC	Max 10A
		HR301CD024	1 C/O	16A❸	24VDC	
		HR301CD048	1 C/O	16A❸	48VAC	
		HR301CA024	1 C/O	16A❸	24VAC	
		HR301CA110	1 C/O	16A❸	110...120VAC	
		HR301CA230	1 C/O	16A❸	230VAC	
		HR302CD012	2 C/O	8A	12VDC	 **HR5XS21** Screw terminals. Contact terminals all on upper side.
		HR302CD024	2 C/O	8A	24VDC	
		HR302CD048	2 C/O	8A	48VDC	
		HR302CA024	2 C/O	8A	24VAC	
		HR302CA110	2 C/O	8A	110...120VAC	
		HR302CA230	2 C/O	8A	230VAC	 **HR5XS22** Screw terminals.
MINIATURE RELAYS CLEAR ENCLOSURE		HR401CD012	1 C/O	16A❸	12VDC	
		HR401CD024	1 C/O	16A❸	24VDC	
		HR402CD012	2 C/O	10A	12VDC	
		HR402CD024	2 C/O	10A	24VDC	
MINIATURE RELAYS WITH LED STATE INDICATOR AND MECHANICAL ACTUATOR		HR501CD012	1 C/O	16A❸	12VDC	 **HR5XS21S** Spring terminals.
		HR501CD024	1 C/O	16A❸	24VDC	
		HR501CD048	1 C/O	16A❸	48VDC	
		HR501CD110	1 C/O	16A❸	110VDC	
		HR501CA024	1 C/O	16A❸	24VAC	
		HR501CA110	1 C/O	16A❸	110...120VAC	
		HR501CA230	1 C/O	16A❸	230VAC	
		HR502CD012	2 C/O	8A	12VDC	 **HR5XS21P** PIN terminals. For Printed Circuit Board.
		HR502CD024	2 C/O	8A	24VDC	
		HR502CD048	2 C/O	8A	48VDC	
		HR502CD110	2 C/O	8A	110VDC	
		HR502CA012	2 C/O	8A	12VAC	
		HR502CA024	2 C/O	8A	24VAC	
		HR502CA110	2 C/O	8A	110...120VAC	
		HR502CA230	2 C/O	8A	230VAC	
INDUSTRIAL RELAYS WITH LED STATE INDICATOR AND MECHANICAL ACTUATOR		HR602CD012	2 C/O	7A	12VDC	 **HR6XS21** Screw terminals. Contact terminals on upper side.  **HR6XS22** Screw terminals.  **HR6XS41S** Spring terminals.
		HR602CD024	2 C/O	7A	24VDC	
		HR602CD048	2 C/O	7A	48VDC	
		HR602CA012	2 C/O	7A	12VAC	
		HR602CA024	2 C/O	7A	24VAC	
		HR602CA110	2 C/O	7A	110...120VAC	
		HR602CA230	2 C/O	7A	230VAC	
		HR604CD012	4 C/O	5A	12VDC	 **HR6XS41** Screw terminals. Contact terminals on upper side.  **HR6XS42** Screw terminals.  **HR6XS41S** Spring terminals.
		HR604CD024	4 C/O	5A	24VDC	
		HR604CD048	4 C/O	5A	48VDC	
		HR604CA012	4 C/O	5A	12VAC	
		HR604CA024	4 C/O	5A	24VAC	
		HR604CA110	4 C/O	5A	110...120VAC	
		HR604CA230	4 C/O	5A	230VAC	
8-PIN AND 11-PIN INDUSTRIAL RELAYS WITH LED STATE INDICATOR AND MECHANICAL ACTUATOR		HR702CD024	2 C/O	10A	24VDC	8-pin
		HR702CD048	2 C/O	10A	48VDC	
		HR702CD110	2 C/O	10A	110VDC	 **HR7XS1** Screw terminals.
		HR702CA024	2 C/O	10A	24VAC	
		HR702CA110	2 C/O	10A	110...120VAC	
		HR702CA230	2 C/O	10A	230VAC	
		HR703CD024	3 C/O	10A	24VDC	11-pin
		HR703CD048	3 C/O	10A	48VDC	
		HR703CD110	3 C/O	10A	110VDC	 **HR7XS2** Screw terminals.
		HR703CA024	3 C/O	10A	24VAC	
		HR703CA110	3 C/O	10A	110...120VAC	
		HR703CA230	3 C/O	10A	230VAC	
POWER RELAYS WITH ATEX CERTIFICATE		HR8020A024	2 NO	30A	24VAC	
		HR8020A230	2 NO	30A	230VAC	
		HR802CA024	2 C/O	30A	24VAC	
		HR802CA230	2 C/O	30A	230VAC	

Code	Retaining clips	Code	Marker tags	Code	Parallel busbars	Code	Surge suppressor filters
	Included in the socket	**HR1X30**		**HR1X9020** (black)	20 poles 	Resistor - Capacitor **HR6X77024** 6...24VAC/DC **HR6X77230** 110...230VAC/DC	
		HR1X3016 (strip with 16 tags)		**HR1X9120** (red)		Diode + LED **HR6X78024** 6...24VDC	
HR3X88❻							
HR3X86❺							
HR5X88❻		**HR5X30**❻		**HR5X9008** (black) ❹	8 poles 		
HR5X86❺				**HR5X9002**❼	2 poles 		
HR5X87❻							
HR6X88❽		**HR6X30**		**HR5X9002**❼	2 poles 		
HR6X87							
HR7X87							

❶ Final S in code indicates spring terminals.
❷ Voltage dependent on selected relay socket; rated insulation voltage only for relay 60VDC.
❸ Rated current if the relay is soldered directly onto the board; with socket the maximum current is 10A.
❹ For sockets with screw terminals.
❺ Only mounting on socket HR5XS21P.
❻ Not suitable for HR5XS21P socket.
❼ Bus jumper for A2 terminal; for spring terminals sockets only.
❽ Not suitable for spring terminals sockets.

Slim relays

HRA10...

HR10...

HR20...

Order code	Control voltage	Contacts	Rated current	Description	Qty per pkg
			[A]		no.
Slim electromechanical relays assembled on the socket.					
HRA101CE024	24VAC/DC	1 C/O	6	Screw terminals	10
HRA101CE024S	24VAC/DC	1 C/O	6	Spring terminals	10
Slim electromechanical relays.					
HR101CE012	12VDC	1 C/O	6	12VAC/DC control when on HR1XS024 or HR1XS024S socket	20
HR101CE024	24VDC	1 C/O	6	24VAC/DC control when on HR1XS024 or HR1XS024S socket	20
HR101CE060	60VDC	1 C/O	6	110...125VAC/DC control when on HR1XS110 or HR1XS110S socket. 220...240VAC/DC control when on HR1XS230 or HR1XS230S socket	20
Slim SSR (solid state relay) relays.					
HR201AS024	24VDC	1 SSR	2	Output 24...280VAC	20
HR201DS024	24VDC	1 SSR	4	Output 3...28VDC	20

General characteristics
Slim-type relays have a reduced width that permits considerable optimisation of space. All sockets are equipped with supply indicator LED and retain/release clips. The availability of electromechanical and solid-state (SSR) versions permits the installation of the most technically suitable solution in accordance with system requirements. The socket terminals can be screw or spring type.
The parallel busbars make for quick wiring.

Operational characteristics
- Rated insulation voltage: 250V
- Rated impulse withstand voltage: 4kV
- Relay control voltage: 12, 24, 60VDC
- Relay control voltage + socket: 12, 24, 110...125, 220...240VAC/DC
- Max controllable power in AC-1: 1500W
- Max controllable power in AC-15: 360VA.

Certifications and compliance
Certifications obtained: cURus, CSA, EAC, VDE for electromechanical relays HR10..., cURus, TÜV for SSR relay HR20....
Compliant with standards: IEC/EN/BS 61810 for electromechanical relays, IEC/EN/BS 62314 for SSR.

Sockets

HR1XS... HR1XS...S

Order code	Control voltage	Terminals	Description	Qty per pkg
	AC/DC			no.
Sockets for relays.				
HR1XS024	12...24V	Screw	Use with relay HR101CE012, HR101CE024 and HR20...	10
HR1XS110	110...125V	Screw	Use with relay HR101CE060	10
HR1XS230	220...240V	Screw	Use with relay HR101CE060	10
HR1XS024S	12...24V	Spring	Use with relay HR101CE012, HR101CE024 and HR20...	10
HR1XS110S	110...125V	Spring	Use with relay HR101CE060	10
HR1XS230S	220...240V	Spring	Use with relay HR101CE060	10

General characteristics
HR1X... sockets are equipped with supply indicator LED and retain/release clips. The socket terminals can be screw or spring type. Parallel busbars can be fitted to the sockets, for quick wiring. These busbars plug in, on both the screw and spring sockets, leaving the cable entry terminals free.

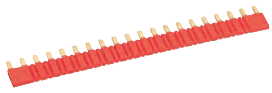
Operational characteristics
- Rated insulation voltage: 250V
- Rated impulse withstand voltage: 4kV
- Relay control voltage: 12, 24, 60VDC
- Relay control voltage + socket: 12, 24, 110...125, 220...240VAC/DC
- Green indication LED
- Fitting on DIN rail
- Operating temperature: HR1XS024 -40...+70°C, HR1XS110 and HR1XS230 -40...+55°C.

Certifications and compliance
Certifications obtained: cURus, CSA, EAC, VDE for electromechanical relay HR10..., cURus, TÜV for SSR relay HR20....
Compliant with standards: IEC/EN/BS 61810 for electromechanical relays, IEC/EN/BS 62314 for SSR.

Accessories

HR1X30...

HR1X9020



HR1X9120

Order code	Description	Qty per pkg
		no.
HR1X30	Marker tags	100
HR1X3016	Marker tags - strip with 16 tags	20
HR1X9020	20-pole parallel busbar - black	10
HR1X9120	20-pole parallel busbar - red	10

Miniature relays

HR30...

	Order code	Control voltage	Contacts	Rated current	Description	Qty per pkg
				[A]		no.
	Miniature relays.					
	HR301CD012	12VDC	1 C/O	16	Fitting on socket HR5XS2... (max 10A)	20
	HR301CD024	24VDC	1 C/O	16	Fitting on socket HR5XS2... (max 10A)	20
new	HR301CD048	48VDC	1 C/O	16	Fitting on socket HR5XS2... (max 10A)	20
	HR301CA024	24VAC	1 C/O	16	Fitting on socket HR5XS2... (max 10A)	20
	HR301CA110	110/120VAC	1 C/O	16	Fitting on socket HR5XS2... (max 10A)	20
	HR301CA230	230VAC	1 C/O	16	Fitting on socket HR5XS2... (max 10A)	20
	HR302CD012	12VDC	2 C/O	8	Fitting on socket HR5XS2...	20
	HR302CD024	24VDC	2 C/O	8	Fitting on socket HR5XS2...	20
new	HR302CD048	48VDC	2 C/O	8	Fitting on socket HR5XS2...	20
	HR302CA024	24VAC	2 C/O	8	Fitting on socket HR5XS2...	20
	HR302CA110	110/120VAC	2 C/O	8	Fitting on socket HR5XS2...	20
	HR302CA230	230VAC	2 C/O	8	Fitting on socket HR5XS2...	20

General characteristics
Miniature relays have compact dimensions but high functional performance. It's the ideal device for those looking for a cost-effective solution without compromising performance.

Operational characteristics
- Rated insulation voltage: 250V
- Rated impulse withstand voltage: 4kV
- Relay control voltage: 12, 24 and 48VDC - 24, 110/120 and 230VAC, 50/60Hz
- Max controllable power in AC-1 (1C/2C): 4000/2000W
- Max controllable power in AC-15 (1C/2C): 300/150VA
- Maximum current (1C/2C): 16A/8A.

Certifications and compliance
Certifications obtained: cURus, CSA, EAC, VDE (VDE except for HR301CA...).
Compliant with standards: IEC/EN/BS 61810.

Sockets

HR5XS21

HR5XS22

HR5XS21S

HR5XS21P

Order code	Description	Qty per pkg
		no.
Sockets for relays (supplied without retain/release clip). Terminal layout see page 21-10.		
HR5XS21	Screw terminals, contact terminals all on upper side	10
HR5XS22	Screw terminals. Fitting on DIN rail or with screws	10
HR5XS21S	Spring terminals. Fitting on DIN rail or with screws	10
HR5XS21P	PIN terminals for Printed Circuit Board	40

General characteristics
HR5X... series sockets can have screw terminals or spring terminals for quick wiring. A socket with pins for PCB is also available. Screw terminals are available in 2 versions: with contact terminals separated from the coil terminals or with NC contact terminals near the coil terminals. Surge suppressor filters, parallel busbars and tags for writing can be snap-fitted to the sockets.

Operational characteristics
- Rated insulation voltage: 250V
- Rated impulse withstand voltage: 4kV
- Maximum current: 10A
- Terminal layout see page 21-10
- Operating temperature: -40...+70°C.

Certifications and compliance
Certifications obtained: cURus, CSA, EAC (PCB socket is cURus only).
Compliant with standards: IEC/EN/BS 61810.

HR5XS21S socket with Push-in technology
Push-in wiring without using a screwdriver for cables with end lugs. They guarantee fast wiring and clamping force maintained over time even in the presence of vibrations and / or shocks. To connect cables without end lug and for cables removal, a screwdriver needs to push the handy buttons.

Push-in wiring without using a screwdriver

Cable removal with screwdriver

Accessories

HR3X88

HR3X86

HR6X78024

HR5X30

HR5X9008

HR5X9002

Order code	Description	Qty per pkg
		no.
HR3X88	Retain/release clip. Not suitable for HR5XS21P socket	20
HR3X86	Retaining clip. Only mounting on socket HR5XS21P	10
HR5X30	Marker tags	100
HR6X78024	Plug-in surge suppressor filters. 6...24VDC with LED	10
HR6X77024	Plug-in surge suppressor filters. 6...24VAC/DC (RC)	10
HR6X77230	Plug-in surge suppressor filters. 110...230VAC/DC (RC)	10
HR5X9008	8-pole parallel busbar - black - for sockets with screw terminals	10
new HR5X9002	Bus jumper for A2 terminals; for spring terminal sockets only	10

Miniature relays clear enclosure

HR40...

Order code	Control voltage	Contacts	Rated current	Description	Qty per pkg
			[A]		no.
Miniature relays clear enclosure.					
HR401CD012	12VDC	1 C/O	16	Mounting on HR5XS2... socket (max 10A)	10
HR401CD024	24VDC	1 C/O	16		10
HR402CD012	12VDC	2 C/O	10	Mounting on HR5XS2... socket	10
HR402CD024	24VDC	2 C/O	10		10

Miniature relays with LED state indicator and mechanical actuator

HR50...

new

Order code	Control voltage	Contacts	Rated current	Description	Qty per pkg
			[A]		no.
Miniature relays with LED state indicator and mechanical actuator.					
HR501CD012	12VDC	1 C/O	16	Mounting on HR5XS2... socket (max 10A)	10
HR501CD024	24VDC	1 C/O	16		10
HR501CD048	48VDC	1 C/O	16		10
HR501CD110	110VDC	1 C/O	16		10
HR501CA024	24VAC	1 C/O	16		10
HR501CA110	110/120VAC	1 C/O	16		10
HR501CA230	230VAC	1 C/O	16		10
HR502CD012	12VDC	2 C/O	8	Mounting on HR5XS2... socket	10
HR502CD024	24VDC	2 C/O	8		10
HR502CD048	48VDC	2 C/O	8		10
HR502CD0110	110VDC	2 C/O	8		10
HR502CA012	12VAC	2 C/O	8		10
HR502CA024	24VAC	2 C/O	8		10
HR502CA110	110/120VAC	2 C/O	8		10
HR502CA230	230VAC	2 C/O	8		10

General characteristics
HR40... and HR50... miniature relays have reduced dimensions and, in addition to the high electrical performance. HR40... has a clear enclosure that allow contacts visibility for wear and tear check. HR50... is equipped with the following functions: LED to indicate voltage on the coil, mechanical contact state indicator and mechanical test actuator. The mechanical actuator is particularly useful for performing functional tests; it can also keep the relay closed continuously.

Operational characteristics
- Rated insulation voltage: 250V (400V with pollution degree 2)
- Relay control voltage:
  - HR40... and HR50...: 12 and 24VDC (48VDC for HR50... only)
  - HR50...: 12, 24, 110/120 and 230VAC 50/60Hz
- Max AC-1 controllable power (1C/2C):
  - HR40...: 3840/2500W
  - HR50...: 4000/2000W
- Max AC-15controllable power: 150VA
- Maximum current (1C/2C):
  - HR40...: 16/10A
  - HR50...: 16A/8A.

Certifications and compliance
Certifications obtained: HR401C... cURus; HR402C... cURus, TÜV; HR501C... and HR502C... cURus, CSA, EAC, VDE. Note: HR502CA012 has CSA certification only.
Compliant with standards: IEC/EN/BS 61810.

Sockets

HR5XS21

HR5XS22

HR5XS21S

HR5XS21P

Order code	Description	Qty per pkg
		no.
Sockets for relays (supplied without retain/release clip). Terminal layout see page 21-10.		
HR5XS21	Screw terminals, contact terminals all on upper side. Fitting on DIN rail or with screws	10
HR5XS22	Screw terminals. Fitting on DIN rail or with screws	10
HR5XS21S	Spring terminals. Fitting on DIN rail or with screws	10
HR5XS21P	PIN terminals for Printed Circuit Board	40

General characteristics
HR5X... series sockets can have screw terminals or spring terminals for quick wiring. A socket with pins for PCB is also available. Screw terminals are available in 2 versions: with contact terminals separated from the coil terminals or with NC contact terminals near the coil terminals. Surge suppressor filters, parallel busbars and tags for writing can be snap-fitted to the sockets intended for DIN rail mounting.

Operational characteristics
- Rated insulation voltage: 250V
- Rated impulse withstand voltage: 4kV
- Maximum current: 10A
- Terminal layout see page 21-10
- Operating temperature: -40...+70°C.

Certifications and compliance
Certifications obtained: cURus, CSA, EAC (PCB socket is cURus only).
Compliant with standards: IEC/EN/BS 61810.

HR5XS21S socket with Push-in technology
Push-in wiring without using a screwdriver for cables with end lugs. They guarantee fast wiring and clamping force maintained over time even in the presence of vibrations and / or shocks. To connect cables without end lug and for cables removal, a screwdriver needs to push the handy buttons.

Push-in wiring without using a screwdriver

Cable removal with screwdriver

Accessories

HR5X86

HR5X87

HR5X88

HR5X30

HR5X9008

HR6X78024

HR5X9002

new

Order code	Description	Qty per pkg
		no.
HR5X86	Metal retaining clip. Only mounting on HR5XS21P socket	10
HR5X87	Metal retaining clip. Not suitable for HR5XS21P socket	20
HR5X88	Plastic retaining clip. Not suitable for HR5XS21P socket	10
HR5X30	Marker tags	100
HR6X78024	Plug-in surge suppressor filters. 6...24VDC with LED	10
HR6X77024	Plug-in surge suppressor filters. 6...24VAC/DC (RC)	10
HR6X77230	Plug-in surge suppressor filters. 110...230VAC/DC (RC)	10
HR5X9008	8-pole parallel busbar - black	10
HR5X9002	Bus jumper for A2 terminals; for spring terminal sockets only	10

Industrial relays with LED state indicator and mechanical actuator

HR60...

Order code	Control voltage	Contacts	Rated current	Description	Qty per pkg
			[A]		no.
Industrial relays with LED state indicator and mechanical actuator.					
HR602CD012	12VDC	2 C/O	7	Fitting on socket HR6XS2...	10
HR602CD024	24VDC	2 C/O	7	Fitting on socket HR6XS2...	10
HR602CD048	48VDC	2 C/O	7	Fitting on socket HR6XS2...	10
HR602CA012	12VAC	2 C/O	7	Fitting on socket HR6XS2...	10
HR602CA024	24VAC	2 C/O	7	Fitting on socket HR6XS2...	10
HR602CA110	110/120VAC	2 C/O	7	Fitting on socket HR6XS2...	10
HR602CA230	230VAC	2 C/O	7	Fitting on socket HR6XS2...	10
HR604CD012	12VDC	4 C/O	5	Fitting on socket HR6XS4...	10
HR604CD024	24VDC	4 C/O	5	Fitting on socket HR6XS4...	10
HR604CD048	48VDC	4 C/O	5	Fitting on socket HR6XS4...	10
HR604CA012	12VAC	4 C/O	5	Fitting on socket HR6XS4...	10
HR604CA024	24VAC	4 C/O	5	Fitting on socket HR6XS4...	10
HR604CA110	110/120VAC	4 C/O	5	Fitting on socket HR6XS4...	10
HR604CA230	230VAC	4 C/O	5	Fitting on socket HR6XS4...	10

General characteristics
HR60... type industrial relays are available in 2/4-changeover-contact versions. They are equipped with LEDs that indicate control voltage, a mechanical contact state indicator and a mechanical actuator. The actuator is particularly useful for performing functional tests; it can also keep the relay closed continuously.

Operational characteristics
- Rated insulation voltage: 250V
- Rated impulse withstand voltage: 4kV
- Relay control voltage: 12, 24 or 48VDC - 12, 24, 110/120 and 230VAC, 50/60Hz
- Max controllable current in AC-1 (2C/4C): 7/5A
- Maximum current (2C/4C): 7A/5A.

Certifications and compliance
Certifications obtained: cURus, CSA, EAC, VDE.
Compliant with standards: IEC/EN/BS 61810.

Sockets

HR6XS21 HR6XS41

HR6XS42 HR6XS41S

Order code	Description	Qty per pkg
		no.
Sockets for relays (supplied without retain/release clip) for fitting on DIN rail or with screws. Terminal layout see page 21-10 and 11. For relays with 2 changeover contacts.		
HR6XS21	Screw terminals, contact terminals all on upper side	10
HR6XS22	Screw terminals	10
new **HR6XS41S**	Spring terminals with **Push-in technology**	10
For relays with 4 changeover contacts.		
HR6XS41	Screw terminals, contact terminals all on upper side	10
HR6XS42	Screw terminals	10
new **HR6XS41S**	Spring terminals with **Push-in technology**	10

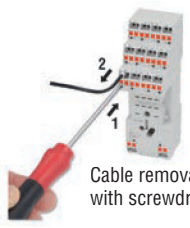
General characteristics
HR6X... series sockets have screw terminals and are supplied in two versions for relays with 2 or 4 contacts. Surge suppressor filters and tags for writing can be plugged in to the sockets.
They can be fixed on DIN rail or with screws.

Operational characteristics
- Rated insulation voltage: 250V
- Rated impulse withstand voltage: 4kV
- Maximum current: 10A
- Terminal layout see page 21-10 and 11
- Operating temperature: -40...+70°C.

Certifications and compliance
Certifications obtained: cURus, CSA, EAC.
Compliant with standards: IEC/EN/BS 61810.

HR6XS41S socket with Push-in technology
Push-in wiring without using a screwdriver for cables with end lugs. They guarantee fast wiring and clamping force maintained over time even in the presence of vibrations and / or shocks. To connect cables without end lug and for cables removal, a screwdriver needs to push the handy buttons.

Push-in wiring without using a screwdriver



Cable removal with screwdriver

Accessories

HR6X88

HR6X87

HR5X30

HR5X9002

HR6X78024

Order code	Description	Qty per pkg
		no.
HR6X87	Metal retaining clip	20
HR6X88❶	Plasic retain/release clip	20
HR6X30	Marker tag for sockets with screw terminals	100
HR5X30	Marker tag for sockets with spring terminals	100
HR6X78024	Plug-in surge suppressor filters. 6...24VDC with LED	10
HR6X77024	Plug-in surge suppressor filters. 6...24VAC/DC (RC)	10
HR6X77230	Plug-in surge suppressor filters. 110...230VAC/DC (RC)	10
new **HR5X9002**	Bus jumper for A2 terminals; for spring terminal sockets only	10

❶ Not suitable for sockets with spring terminals.

8-pin and 11-pin industrial relays with LED state indicator and mechanical actuator

HR70...

Order code	Control voltage	Contacts	Rated current	Description	Qty per pkg
			[A]		no.
Industrial relays with LED state indicator and mechanical actuator. 8-pin type.					
HR702CD024	24VDC	2 C/O	10	Fitting on socket HR7XS1	10
HR702CD048	48VDC	2 C/O	10	Fitting on socket HR7XS1	10
HR702CD110	110VDC	2 C/O	10	Fitting on socket HR7XS1	10
HR702CA024	24VAC	2 C/O	10	Fitting on socket HR7XS1	10
HR702CA110	110/120VAC	2 C/O	10	Fitting on socket HR7XS1	10
HR702CA230	230VAC	2 C/O	10	Fitting on socket HR7XS1	10
Industrial relays with LED state indicator and mechanical actuator. 11-pin type.					
HR703CD024	24VDC	3 C/O	10	Fitting on socket HR7XS2	10
HR703CD048	48VDC	3 C/O	10	Fitting on socket HR7XS2	10
HR703CD110	110VDC	3 C/O	10	Fitting on socket HR7XS2	10
HR703CA024	24VAC	3 C/O	10	Fitting on socket HR7XS2	10
HR703CA110	110/120VAC	3 C/O	10	Fitting on socket HR7XS2	10
HR703CA230	230VAC	3 C/O	10	Fitting on socket HR7XS2	10

General characteristics
HR70... type industrial relays are available in 2 or 3 changeover versions. They are equipped with LEDs that indicate control voltage, mechanical contact state indicator and mechanical actuator. The actuator is particularly useful for performing functional tests; it can also keep the relay closed continuously.
HR70... has high electrical endurance performance and lends itself to the most heavy-duty applications.

Operational characteristics
- Rated insulation voltage: 250V
- Rated impulse withstand voltage: 4kV
- Relay control voltage: 24 and 48VDC- 24, 110/120 and 230VAC, 50/60Hz
- Maximum current: 10A.

Certifications and compliance
Certifications obtained: cURus, CSA, EAC.
Compliant with standards: IEC/EN/BS 61810.

Sockets

HR7XS1

HR7XS2

Order code	Description	Qty per pkg
		no.
Sockets for relays (supplied without retaining clip), for fitting on DIN rail or with screws. Terminal layout see page 21-11.		
HR7XS1	8-pin for HR702C... Screw terminals	10
HR7XS2	11-pin for HR703C... Screw terminals	10

General characteristics
HR7X... series sockets have screw terminals and are supplied in two versions for relays with 2 or 3 contacts (8-pin – 11-pin).
They can be fixed on DIN rail or with screws.

Operational characteristics
- Rated insulation voltage: 250V
- Rated impulse withstand voltage: 4kV
- Maximum current: 10A
- Operating temperature: -40...+70°C.

Certifications and compliance
Certifications obtained: cURus, CSA, EAC.
Compliant with standards: IEC/EN/BS 61810.

Accessories

HR7X87

Order code	Description	Qty per pkg
		no.
HR7X87	Metal retaining clip	20

Power relays with Atex certificate

HR80...

new

Order code	Control voltage	Contacts	Rated current	Characteristics	Qty per pkg
			[A]		no.
HR8020A024	24VAC	2 NO	30	Faston terminals. Screw fixing	10
HR8020A230	230VAC	2 NO	30	Faston terminals. Screw fixing	10
HR802CA024	24VAC	2 C/O	30❶	Faston terminals. Screw fixing	10
HR802CA230	230VAC	2 C/O	30❶	Faston terminals. Screw fixing	10

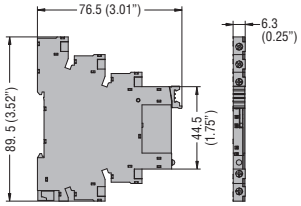
❶ 3A for NC contact.

General characteristics
The HR80... power relays, thanks to the Atex certification, are particularly suitable for refrigeration systems that use propane gas.
The compact structure and the front Faston terminals make them easy to install even in small spaces and speed up wiring.

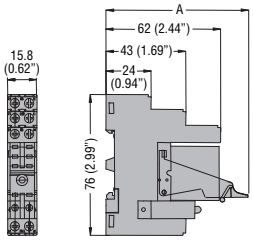
Operational characteristics
- Rated insulation voltage: 250V (277V for UL)
- Rated impulse withstand voltage:
  - 4kV between contacts and coil
  - 1.5kV between open contacts
  - 2kV between poles
- Max current 30A for NO contacts; 3A for NC contacts
- Faston terminals 6.3x0.8mm.

Certifications and compliance
Certifications obtained: cURus, Atex.
Compliant with standards: IEC/EN/BS 61810.

HRA10... - HR10... - HR20 with socket HR1XS...

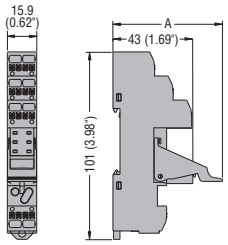


HR30... - HR40... - HR50... with socket HR5XS21



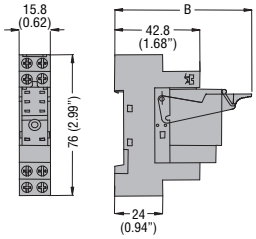
A: 64mm (2.52") with HR3X88
75mm (2.95") with XR5X88

HR30... - HR40... - HR50... with socket HR3XS21S



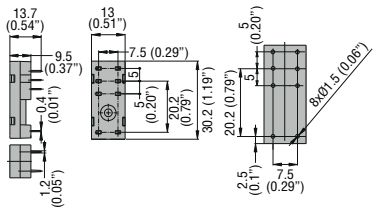
A: 60mm (2.36") with HR3X88
70mm (2.75") with XR5X88

HR30... - HR40... - HR50... with socket HR5XS22

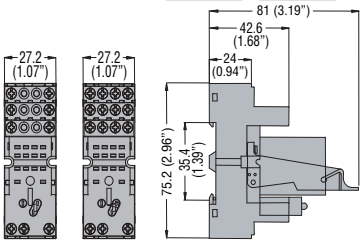


B: 57.5mm (2.26") with HR3X88
68mm (2.68) with XR5X88

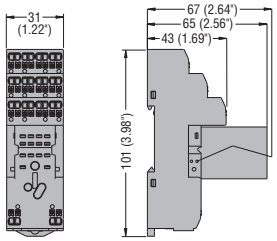
HR5XS21P



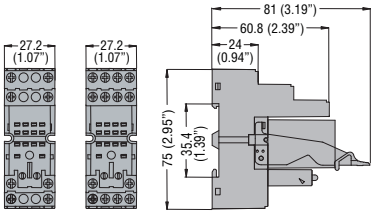
HR60... with socket HR6XS21 - HR6XS41



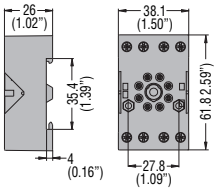
HR602C... - HR604C... with socket HR6XS41S



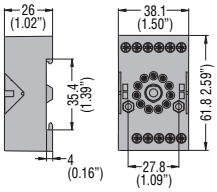
HR60... with socket HR6XS22 - HR6XS42



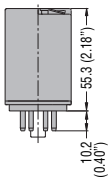
HR7XS1



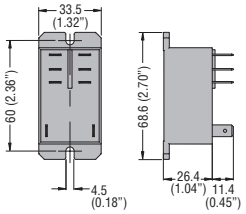
HR7XS2



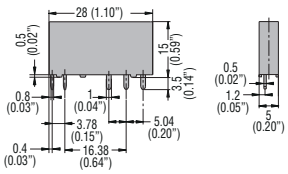
HR702C... - HX703C...



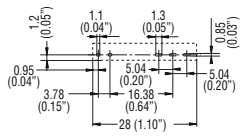
HR8020... - HX802C...



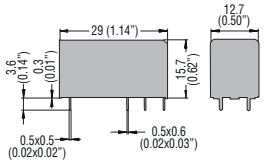
HR10 - HR20



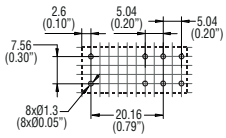
PCB layout



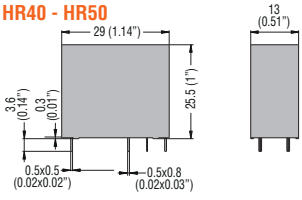
HR30



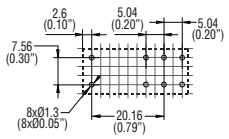
PCB layout



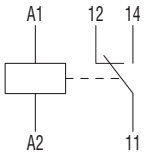
HR40 - HR50



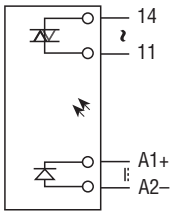
PCB layout



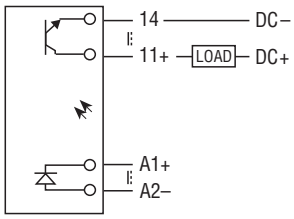
HR101C..., HRA101C...



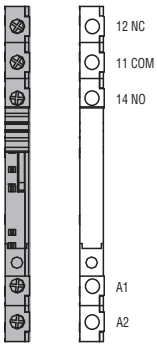
HR201A...



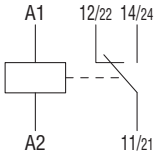
HR201D...



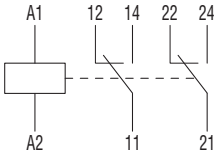
HR1XS...



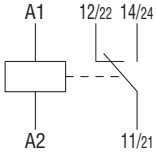
HR301C...



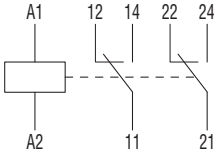
HR302C...



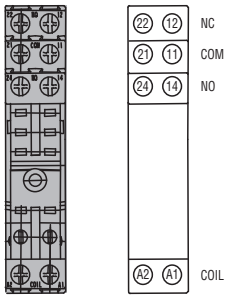
HR401C... - HR501C...



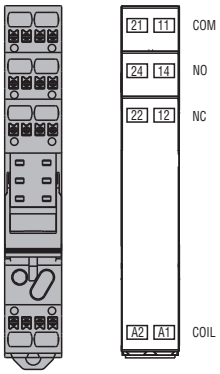
HR402C... - HR502C...



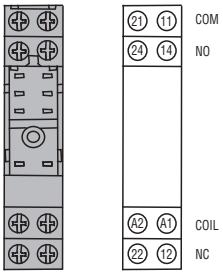
HR5XS21



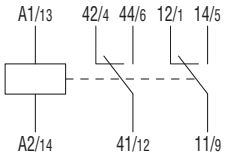
HR5XS21S



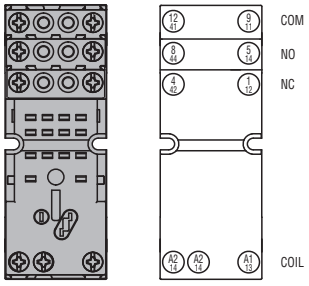
HR5XS22



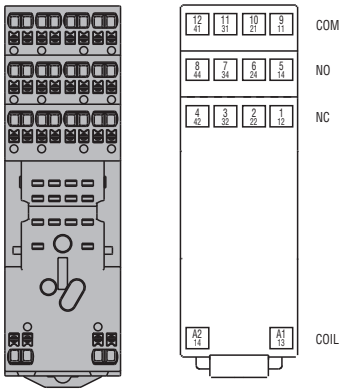
HR602C...



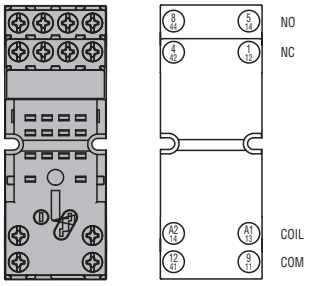
HR6XS21



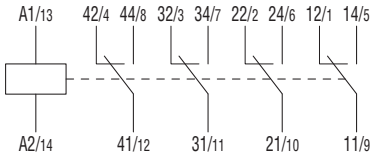
HR6XS41S



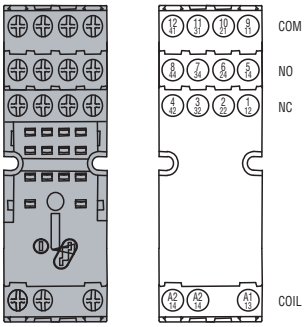
HR6XS22



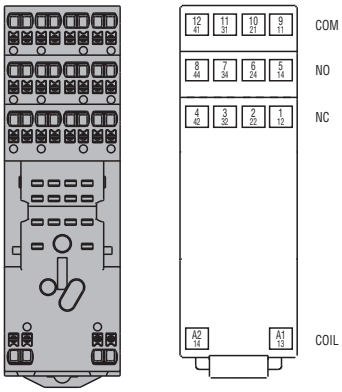
HR604C...



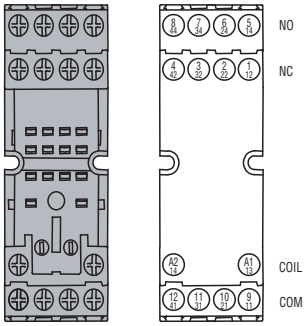
HR6XS41



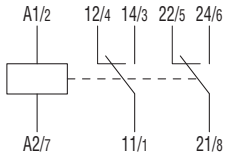
HR6XS41S



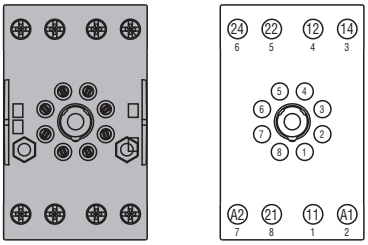
HR6XS42



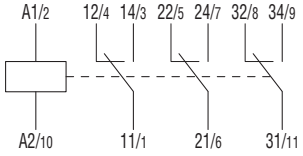
HR702C...



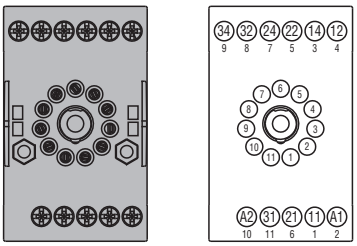
HR7XS1



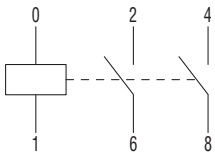
HR703C...



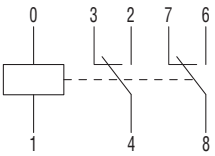
HR7XS2



HR8020...



HR802C...



Type		HRA10.. HR10...	HR20 1AS024	HR201DS024	HR301C...	HR302C...	HR401C...	HR402C...
CHARACTERISTICS OF THE CONTACTS								
Contact configuration		1 C/O	1 static	1 static	1 C/O	2 C/O	1 C/O	2 C/O
Rated insulation voltage Ui	V	250	2500 (in/out)	2500 (in/out)	250	250	250	250
Rated impulse withstand voltage Uimp	kV	4	–	–	6	6	4	5
Conventional free air thermal current Ith	A	6	2	4	16❷	8	16❷	10
Maximum instantaneous current	A	20 (500ms)	80 (10ms)	48 (10ms)	60❶	20❶	60	26
Rated operating voltage AC1	VA	1500	❹	❺	4000	2000	4000	2500
Rated operating voltage AC15 (230VAC)	VA	360	❹	❺	300❶	150❶	500	400
Single-phase motor control (230VAC)	kW	0.186	❹	❺	0.4	0.2	0.37	0.3
Rated operating voltage DC1: 30/110/220V	A	6 / 0.2 / 0.12	❹	❺	12 / 0.3 / 0.1	8 / 0.3 / 0.1	10 / 0.3 / 0.12	8 / 0.3 / 0.12
Minimum switching load	V / mA	5 / 100	24 / 0.1	3 / 0.02	5 / 100		5 / 100	
Contact impedance	mΩ	100	–	–	100		100	
Contact material		Ag/Ni	–	–	Ag/SnO_2		Ag/SnO_2	
Max socket terminal tightening torque	Nm	0.5			0.6		0.6	
Socket screw tightening tool (cross / flat blade)		Phillips 0 / 3.5mm			Phillips 1 / 4.5mm❸		Phillips 1 / 4.5mm❸	
Wire section on sockets with screw terminals (min...max)	mm^2	0.5...1.5 (0.75...2.5)			0.5...2.5		0.5...2.5	
	AWG	20...16 (20...14)			20...14		20...14	
OPERATING TIMES								
Closing	ms	≤8	10	0.3	< 10		< 15	
Opening	ms	≤4	10	0.3	< 5		< 5	
ENDURANCE								
Mechanical	Cycles	10,000,000	Theoretically infinite		10,000,000		10,000,000	
Electrical with load AC1	Cycles	30,000❶	Theoretically infinite		50,000❶		100,000❶	
COIL CHARACTERISTICS								
Average coil consumption AC (50/60Hz) at 20°C	VA	0.2	–	–	0.9		–	–
Average coil consumption DC at 20°C	W	0.2	–	–	0.45		0.7	0.5
Operating range closing	(% Un)	≥75	80...120	80...120	70...110AC / 75...110DC		75...110	75...110
Operating range opening	(% Un)	≥5			20...55AC / 10...30DC		10...30	10...30
Maximum cycle frequency	cycles/h	10,000	>100,000	>100,000	3.,600		3,600	3,600
AMBIENT CONDITIONS								
Operating temperature	°C	-40...+70	-30...+80		-40...+85		-40...+85	
Storage temperature	°C	-40...+80	-30...+100		-40...+85		-40...+85	
Fitting position		Any						
OTHER CHARACTERISTICS								
Indicator LED		Yes (on the socket)			No		No	
Mechanical contact position indicator		No			No		No	
Mechanical test actuator		No			No		No	
Socket fixing		On 35mm DIN rail			On 35mm DIN rail and with screws			

❶ NO contact.
❷ Maximum socket current of 10A.
❸ 2.5mm flat blade for versions with spring terminals.
❹ 2A output 24...280VAC.
❺ 4A output 3...28VDC.

	HR501C...	HR502C...	HR602C...	HR604C...	HR702C...	HR703C...	HR8020...	HR802C...
	1 C/O	2 C/O	2 C/O	4 C/O	2 C/O	3 C/O	2 NO	2 C/O
	250		500		250		250	
	6		4		6		4	
	16❷	8	7	5	10	10	30	30 NO (3 NC)
	20❶	10❶	–	–	–	–	–	–
	4000	2000	1750	1250	2500	2500	–	–
	150❶	150❶	150❶	150❶	500	500	–	–
	0.1	-	0.37	0.37	1.2	1.2	2.2	2.2
	12 / 0.3 / 0.1	8 / 0.3 / 0.1	12 / 0.3 / 0.1	8 / 0.3 / 0.1	10 / - / -	10 / - / -	–	–
	5 / 100		5 / 100		5 / 100		–	
	100		100		100		50	
	Ag/Ni		Ag/Ni		Ag/Ni		Ag/SnO_2	
	0.6		0.6		0.6		–	
	Phillips 1 / 4.5mm❸		Phillips 1 / 4.5mm		Phillips 1 / 4.5mm		–	
	0.5...2.5		0.5...2.5		0.5...2.5		–	
	20...14		20...14		20...14		–	
	< 15		< 25		< 30		25	
	< 15		< 25		< 30		25	
	10,000,000		20,000,000		5,000,000		5,000,000	
	50,000❶		20,000❶	100,000	100,000		100,000	
	1		1.7		3		4	
	0.4		1.1		1.5		1	
	70...110AC / 75...110DC		70...110AC / 75...110DC		70...110AC / 75...110DC		80...120	
	20...55AC / 10...30DC		20...55AC / 10...30DC		20...55AC / 10...30DC		20...55	
	3,600		3,600		3,600		10,000	
	-40...+70		-40...+70		-40...+55		-40...+65	
	-40...+85		-40...+80		-40...+70		-40...+80	
	Any							
	Yes		Yes		Yes		No	
	Yes		Yes		Yes		No	
	Yes		Yes		Yes		No	
	On 35mm DIN rail and with screws		On 35mm DIN rail and with screws		On 35mm DIN rail and with screws		Screw fixing	