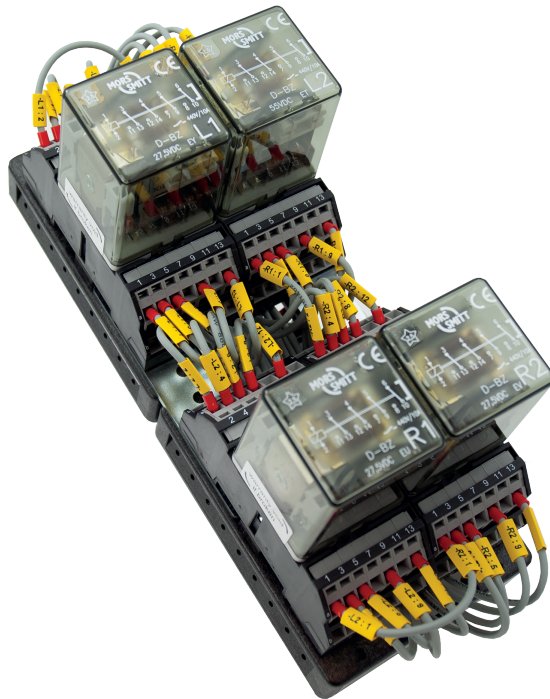


Datasheet 4D-BZ adapter

To replace P16 relay in existing socket



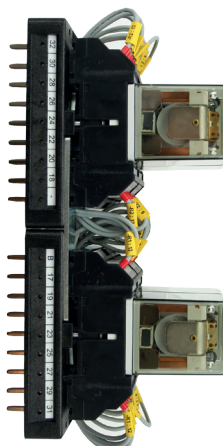
- Form, fit function replacement for P16 relay
- Plug & play
- Instantaneous, 16 contacts
- N/C - N/O convert
- Function tested

Description

The 4D-BZ adapter has been designed to replace the widely installed P16 relays without having to change your installation. The adapter is designed to be plugged in the existing sockets. The adapter is equipped with four coupled D-relays.

Application

The D-relays are designed for demanding applications such as power utilities and petrochemical industries. The construction of the relay and choice of materials make the D-relay suitable to withstand corrosive atmospheres, low and high temperatures and vibrating environments.



Adapter 4D-BZ

Coil characteristics DC versions

Operating times at nominal voltage (typical):	
Pull-in time	≤ 20 ms
Release time	≤ 18 ms
Bounce time N/O contacts	≤ 4 ms
Bounce time N/C contacts	≤ 12 ms
Operating voltage range	0.8 - 1.1 U _{nom}
Inductance L/R at Unom (typical)	
Energized	11 ms
Released	8 ms
Nominal power consumption	8 W

Type	U _{nom} (VDC)	U _{min} (VDC)	U _{drop-out} (VDC)	U _{max} (VDC) 55 °C	R _{coil} * (Ω)
110 VDC	110	88.0	11.0	121.0	1600
220 VDC	220	176.0	22.0	242.0	5764

Other types on request

* The R_{coil} is measured at room temperature and has a tolerance of ± 10%.

Remarks:

- U_{min} is the must-operate voltage at which the relay has picked up in all circumstances (worst-case situation), in practice the relay picks up at a lower voltage
- U_{drop-out} is the must-release voltage at which the relay has dropped-out in all circumstances (worst-case situation), in practice the relay drops out at a higher voltage
- Always select the nominal voltage as close as possible to the actual voltage in the application

Contact characteristics

Maximum make current	16 A
Maximum continuous current	10 A
Peak inrush current (make and carry)	NFF F62-002 200 A for 10 ms 40 A for 0.5 s 30 A for 1 s
Maximum switching voltage	250 VDC, 440 VAC
Minimum switching voltage / current	12 V, 10 mA
Contact resistance	<15 mΩ (initial)
Material	Ag
Contact gap	0.7 mm
Contact force	> 200 mN

Electrical characteristics

Dielectric strength	Pole-pole	IEC 61810-1	4 kV, 50 Hz, 1 min
Dielectric strength	Cont-coil	IEC 61810-1	2.5 kV, 50 Hz, 1 min
Pulse withstanding		IEC 60255-5	5 kV (1.2/50 μs)

Mechanical characteristics

Mechanical life	50 x 10 ⁶ cycles
Rated switching frequency	1200 ops/hour
Dimensions (d x w x h)	220 x 85 x 115.5 mm

Adapter 4D-BZ

Environmental characteristics

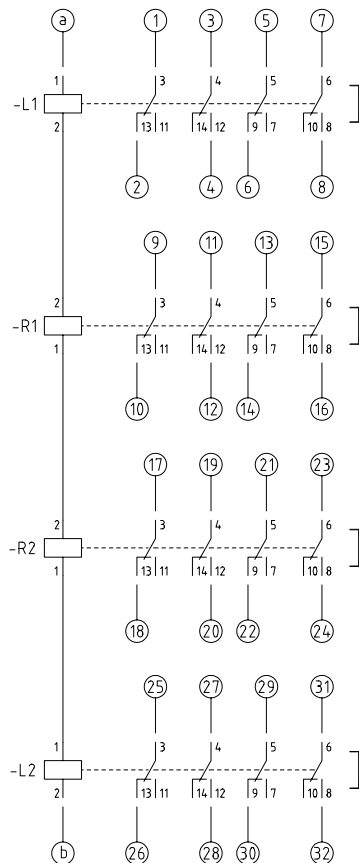
Environmental	IEC 61810	
Vibration	IEC 60068-2-27, 5 g, 30 ms, 6 directions	
Shock	IEC 60068-2-6, 2 g, 5...150 Hz, 6 directions	
Operating temperature	-25 °C...+55 °C	
Humidity	95% RH / +40 °C (condensation is permitted temporarily)	
Salt mist	IEC 60068-2-11, 5 % NaCl, 35 °C for 4 days	
Protection	IEC 60529, IP40 relays, IP20 terminals	
Materials	Relay cover Relay base Relay socket Adapter plate Adapter socket	Polycarbonate Polyester Polyamide Steel zinc plate Polycarbonate

Industry compliancy

IEC 60255-5	Relay design and environmental conditions
IEC 61810	Electromechanical elementary relays
IEC 60947	Low voltage switch gear and control gear
IEC 60947-5-1	Electromechanical control circuit devices and switching elements
CE, CB	Approved

Diagram

Connection diagram



Example:



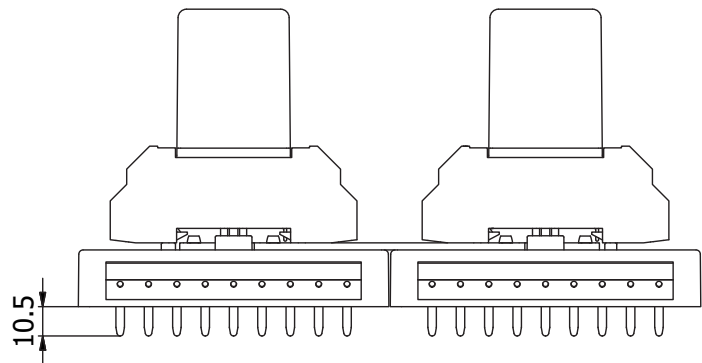
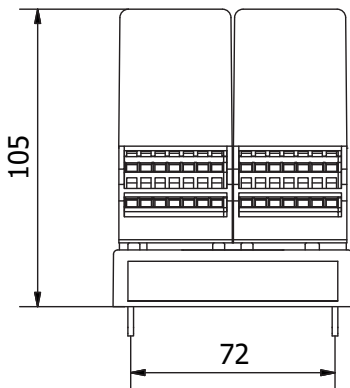
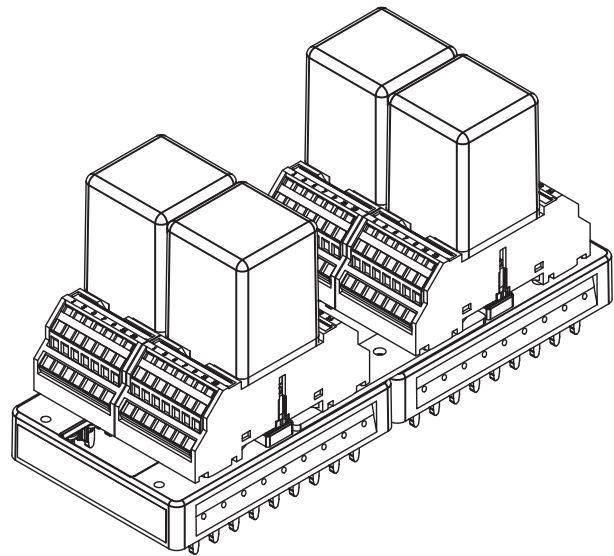
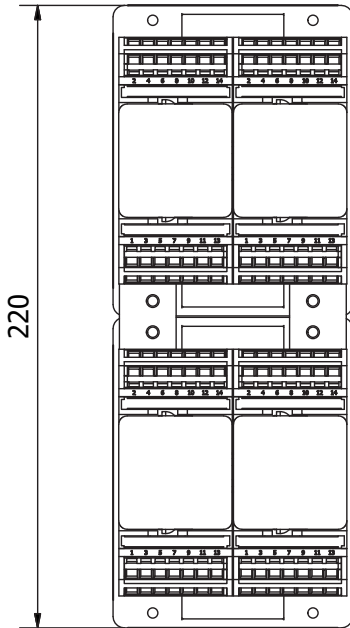
= internal connection relays



= external connection socket (yellow wire marker)

Adapter
4D-BZ

Dimensions



Dimensions in mm, tolerance ± 0.5 mm

Operation & Maintenance

Operation

After installation always apply the rated voltage to the coil to check correct operation. Long term storage may corrode the silver on the relay pins.

Before actual use of relays, it is advised to switch the load several times with the contacts. The contacts will both be electrically and mechanically cleaned due to the positive wiping action. Sometimes a contact can build up increased contact resistance ($\leq 15\text{m}\Omega$ when new). When using silver contacts one can clean the contact by switching a contact load a few times using $>24\text{ VDC}$ & $\sim 2\text{ A}$. Increased contact resistance is not always problematic, as it depends on circuit conditions.

Condensation in the relay is possible when the coil is energised (warm) and the outside, environmental temperature is cold. This is a normal phenomenon and will not affect the function of the relay. Materials in the relay have no hygroscopic properties.

Maintenance

Correct operation of the relay can easily be checked as the transparent cover provides good visibility of the moving contacts. If the relay does not seem to operate correctly, check for presence of the appropriate coil voltage and polarity using a suitable multimeter.

If the relay doesn't work after inspection, replace the relay unit with a similar model. Do not attempt to open the relay cover or try to repair. Contacts are calibrated and in balance, touching can affect proper operation. Also resoldering may affect correct operation. Since 2009 relays have tamper proof seals fitted and once broken, warranty is void.

Most relay defects are caused by installation faults such as overvoltage, spikes/transients, high/short current far exceeding the relay specifications. When returning the relays for investigation, please provide all information on the RMA form. Send defective relays back to the manufacturer for repair or replacement. Normal wear and tear or external causes are excluded from warranty.

Adapter 4D-BZ

Ordering scheme

4D- BZ		-	
Standard	BZ		Magnetic arc blow-out, no diode, no LED
Coil voltages		110 VDC	
(Other voltages on request)		220 VDC	

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