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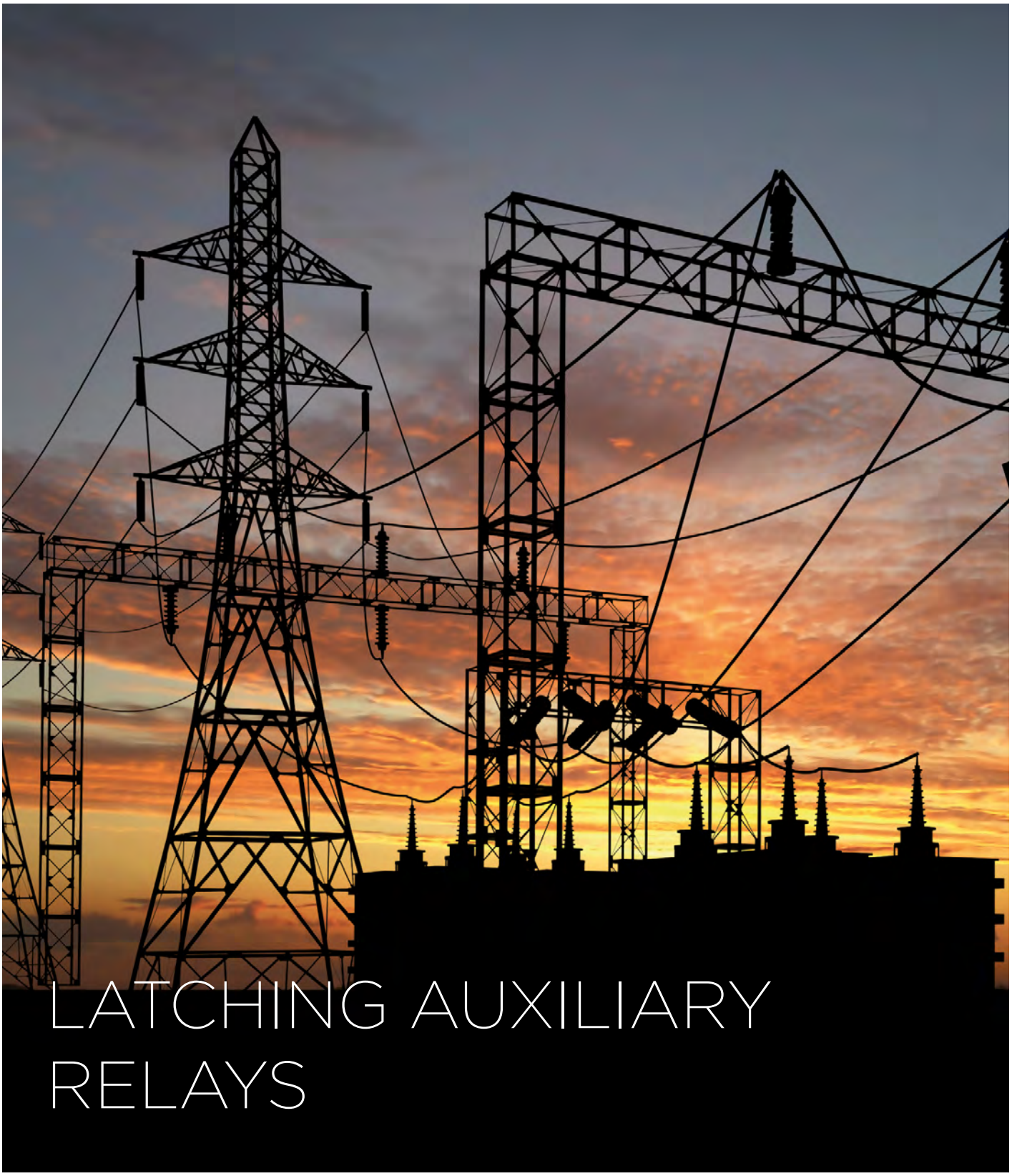

LATCHING AUXILIARY RELAYS

This document may be subject to changes. Contact ARTECHE to confirm the characteristics and availability of the products described here.

Moving together

INDEX

ANSWERS FOR ANY APPLICATION

ARTECHE latching relays are relays with 2 stable positions. Depending on which coil is energized, the output contacts will change from one position to another. The design of Arteche relay allows to have no consumption in permanence.

ARTECHE latching relays range is designed to guarantee the best features and optimal response even in the hardest working environment.

The design, durability and quality of the different alternatives that ARTECHE latching relays can offer (LDL range and standard range), make them suitable for high responsibility controls in different areas, highlighting:

ELECTRICAL UTILITIES:

Power plants, electrical substations.

- Position monitoring of circuit breaker and sectionalizer
- Direct operation on MV / HV (circuit breaker, sectionalizer)
- Position memory:
  - manual / automatic
  - local / remote
- Galvanic isolation between the control system and the primary equipment
- Applications where high speed operation is a must
- Applications where high breaking capacity is required
- Tripping and lockout functions
- Low duty loads control, activate digital inputs. LDL range

INDUSTRIAL SECTOR:

Continuous process industries (Petrochemical, concrete, iron industries), water treatment, ...

- Critical process surveillance
- Position monitoring circuit breaker and sectionalizer
- Galvanic isolation between the control and the power systems
- Low duty loads control, activate digital inputs. LDL range
- Activation of security sistems in industrial processes:
  - bloking electrical machines

The great power of the contacts makes possible direct action on HV and MV switchgear, because their making/breaking capacities, continuous through-current and overvoltage capacity enhances the safety of operation.

GENERAL CHARACTERISTICS

The main features of ARTECHE's latching auxiliary relays are the followings:

- Designed to allow continuous operation even in high temperature ambient, within the whole voltage range.
- No consumption in steady states.
- Self-cleaning contacts.
- High level of electrical insulation between circuits.
- Availability of extended voltage range (+25/-30%) for high security applications.
- Capable to operate under low duty loads, activate digital inputs, and operate without any load. LDL Range.
- High speed operation (up to 10 ms).
- Capable to withstand vibrations and seismic conditions (EN 61373; IEEE 344; IEEE 323; IEEE C37.98 Standards).
- Sturdy design.
- Front state indication on the nameplate.
- High protection degree (IP40), with transparent cover, making them suitable for use in salty and tropical atmospheres.
- In compliance with the most demanding test standards: IEC, EN, IEEE and bearing the CE mark.
- Wide range of auxiliary voltage levels (Vdc and Vac).
- Versatile installation (plug-in relays in a wide range of sockets with different installation configurations).
- Capable to work under environmets with relative humidity around 100%.
- No need of maintenance after installation.

Large variety of assemblies with frontal and rear connection sockets by screw or fast-on clip.

TECHNICAL STANDARDS

GENERAL STANDARDS

In addition to the specific applicable standards, ARTECHE latching relays are designed taking the following standards as reference:

- **IEC 61810:** Electromechanical all-or-nothing relays.
- **IEC 60255:** Electrical relays. Measuring relays and protection equipment.
- **IEC 61812:** Specified time relays for industrial use.
- **IEC 60947:** Low-voltage switchgear and controlgear.
- **IEC 61000:** Electromagnetic compatibility.

E322124

UL Recognized Component Marks for USA and Canada: The combined UL signs for the USA and Canada are recognized by the authorities of both countries. All auxiliary relays identified with this mark meet the requirements of both countries.

STANDARDS AND TEST LEVELS

Electrical security test		
Description	**Standard**	**Test Level**
Dielectric Test	IEC 61810-7 / IEC60255-27	2 kV. 50Hz. 1 min.
Surge withstand	IEC 61810-7 / IEC60255-27	5 kV. 0,5 J. 1,2/50 µs.
Insulation	IEC 61810-7 / IEC60255-27	500 Vcc / Vdc.; > 100MΩ
Environmental tests		
Cold test	EN 60068-2-1 (Test A_b)	- 40ºC, 96 hours
Surge withstand	EN 60068-2-2 (Test B_d)	70ºC, 96 hours
Sudden changes of temperature	EN 60068-2-14 (Test N_a)	
Damp heat test (Cyclic)	EN 60068-2-30 (Test D_d)	55ºC, 6 cycles
Damp heat, steady state	EN 60068-2-78 (Test Cab)	40ºC, 93%Hr, 56 days
Vibration and shock stress tests		
Vibration and shock Stress during operation	60255-21-1 / 60255-21-2	Class 1
Vibration and shock Stress during transport	60255-21-1 60255-21-2	Class 2 Class 1
Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations	IEEE 344	ZPA = 6g + 10
Immunity tests EMC		
High frecuency 1MHz burst disturbance test	IEC 61000-4-18 (2006) + A1 (2010)	Common mode: 2,5kV, 1MHz and 100kHz Differential mode: 1kV, 1MHz and 100kHz
Electrical Fast transient burst	EN 61000-4-4	4 kV, 5kHz, 1min 2 kV, 5kHz, 1min
Surge	EN 61000-4-5	1,2/50µs. (voltage)
Radiated electromagnetic field	EN 61000-4-3	80-1000MHz, 10V/m, 80% AM (1kHz)
Digital telephones radiated electromagnetic field	EN 61000-4-3	10V/m, 80% 80÷1000 MHz and from 1400÷2700 MHz
Conducted disturbances induced by radio frequency fields	61000-4-6	0.15-80MHz, 10V, 80% AM (1kHz)
Electrostatic discharges	EN 61000-4-2	Contact ±15 kV, Air mode ±15 kV
Power frequency magnetic field	EN 61000-4-8	100 A/m 1min. 1000 A/m 1s
Emisission tests		
Radio disturbance	CISPR 11, CISPR2	Cover: 30Mhz-1GHz Group 1 class A Power supply: 0.15-0.5 MHz, 79dB(µV) (quasi peak) / 66dB(average) 0.5-30 MHz, 73dB(µV) (quasi peak) / 60dB (average)
Thermal tests		
Maximun temperature in the relay parts	EN 61810-7	Maximum rated ambient T, 10A through all the contacts. Time until thermal stability. Max. T < RTImec and RTIelec of the plastic
Thermal Endurance	EN 61810-7	Maximum ambient T, Vmax, 10A through all the contacts. 1.000 hours
Mechanical tests		
Mechanical Endurance	IEC 61810-7	10 million operations (25ºC, Vrated, 3 op/s)
Immunity to capacitive discharges	ESI 48-4	EB1: Low burden EB2: High burden (Discharge of 10µF capacitor; 120% Vrated; no pick-up current: 50mA)
Contact circuit tests		
Continuous current capacity	IEC 61810-7	10A
Short-time current capacity	IEC 61810-1	30 A during 1s 80 A during 200 ms 200 A during 10 ms
Making capacity	IEC 61810-1	40A, 0,5s, 110Vdc 30A, 1s, 36Vdc, 30.000 operations (1op/15s)
Contact resistance	IEC 61810-7	≤ 30mΩ
Breaking capacity	IEC 61810-1	100.000 operations

	Non inductive		Inductive Load 20 ms		Inductive Load 40 ms	
VDC	**1 Contact (A)**	**2 Contacts in series (A)**	**1 Contact (A)**	**2 Contacts in series (A)**	**1 Contact (A)**	**2 Contacts in series (A)**
24	20	> 20	13,6	> 20	9,7	> 20
60	5,1	> 20	3,8	> 20	2,3	> 20
125	1,2	7,5	0,9	5	0,56	3,62
220	0,65	1,38	0,48	1	0,28	0,58

RANGE OF PRODUCTS

General purpose latching relays

The ARTECHE latching relays have 2 steady positions. These positions are held by a permanent magnet, which prevents intermediate positions, giving a huge security operation. The position change is made with 2 sets of coils with separate entrances in BF3 and BJ8 and with breaking-flame contacts for each set of coils.

Their pick-up time lower than 20 ms and the high breaking capacity of their contacts make them appropriate to be used as an interface between the secondary equipment and the primary equipment. The main application for these relays is multiply the output contacts in those controls that need to memorize 2 stables positions:

- automatic / manual
- close / open

Auxiliary trip and lockout relays

ARTECHE offers specific relays intended to be used in tripping and lockout applications, where high quality requirement in operating time (with models that assure the trip ever in less than 10 ms) and breaking capacity are needed.

Front indication on the nameplate, that indicates if the relay has changed the contact position.

All the relays include a diode in parallel with the coil (see bistable relays with overvoltage protection characteristic).

There is also the possibility of a bistable trip and lockout relay with manual reset.

Latching relays with coil overvoltage protection

ARTECHE's auxiliary relays, either Vdc or Vac, have the possibility of including an element in parallel with the coil (diode or varistance).

These elements aim to prevent the over voltage peak generated by the coil itself and it may affect other equipment installed on the same line.

Reset Inhibitor (Trip Prioritizer)

All BF3, BF4, BJ8, BJ10 and BI16 models of new production relays, with the exception of the HB versions of BF3 and BF4, can be ordered with the "Trip Priority" or Reset Inhibitor feature. This feature is activated in the event that the "Trip" and "Reset" signals are present simultaneously and prevents the latching relay from ringing, prioritizing the "Trip" coil over the "Reset" coil.

The prioritizer works by levels, so that, in case the "Trip" signal disappears while the reset signal remains active, the relay will immediately switch to the "Reset" position. If the "Trip" signal appears again, the relay will switch back to the "Trip" position even though the "Reset" signal has not ceased.

In an abstract way, it can be said that these relays give priority to one coil over the other in the event that both activation signals appear, regardless of the application that is being used.

No consumption occurs during the operation of the "Trip" preference, except for the consumption of the respective switches, if they are allowed.

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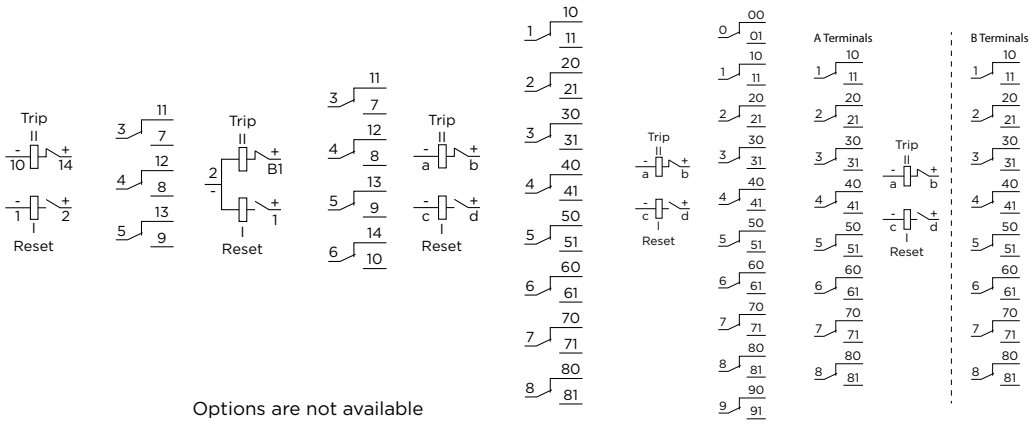
TECHNICAL FEATURES PER MODEL

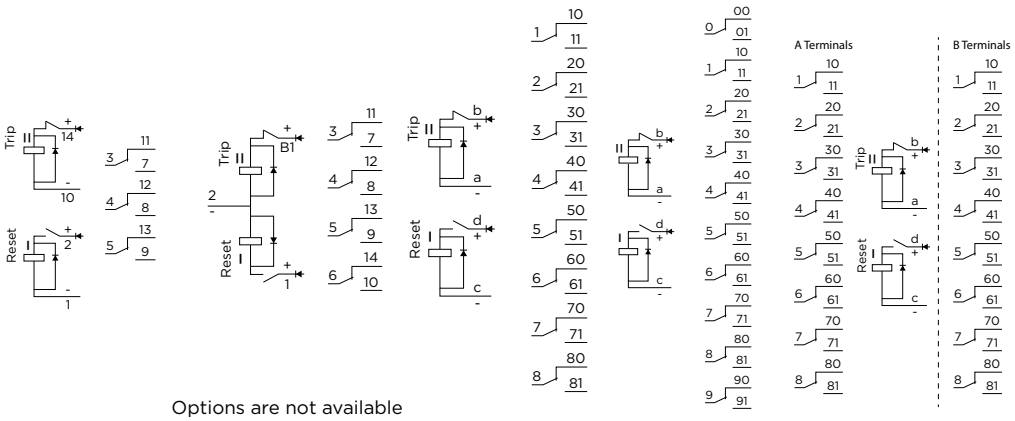
› World-class range of auxiliary relays for energy sector, specially designed for the most demanding applications

GENERAL PURPOSE LATCHING RELAYS

Model	BF-3	BF-4	BJ-8	BJ-10	BI-16
					
Applications	Relays with two stable positions. Required when the position memory (open-close, automatic-manual, local-remote...) is needed.				
Construction characteristics					
Contacts no.	3 Changeover	4 Changeover	8 Changeover	10 Changeover	16 Changeover
Connections					
Options	Options are not available				
Weight (g)	300		600	600	1400
Dimensions (mm)	45 x 45 x 96,5 (F large Type)		90 x 50 x 100,5 (J large Type)	109 x 50 x 100,5	120 x 110 x 105
Coil characteristics					
Standard voltages[1] [3]	24, 48, 72, 110, 125, 220 Vdc / 63,5, 110, 127, 230 Vac (50-60 Hz)				24, 48, 72, 110, 125, 220 Vcc/Vca (50/60 Hz)
Voltage range	+25% -30% U_N				+10% -20% U_n
Pick-up voltage	See pick-up voltage / temperature curves for Latching relays				
Average consumptions only in the change-over	6 W		12 W	12 W	24 W
Operating time					
Pick-up time	<20 ms				
Contacts					
Contact material	AgNi				
Distance between contacts	1,8 mm				
Permanent current	10 A				
Instantaneous current	80 A during 200 ms / 200 A during 10 ms				80 A during 200 ms / 150 A during 10 ms
Max. making capacity	30 A / 3 s / 300 Vdc				
Breaking capacity	See breaking capacity curves (Contact configuration)				
Max. breaking capacity	See value for 50.000 operations				
LDL					
U_{max} opened contact	250 Vdc / 400 Vac				
Performance data					
Mechanical endurance	10^7 operations				10^6 operations
Operating temperature	-40ºC +70ºC				
Storage temperature	-40ºC +85ºC				
Max. operating humidity	93% / +40ºC				
Operating altitude[2]	<2000 m				

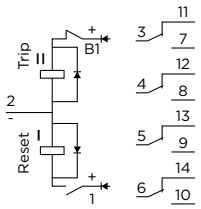
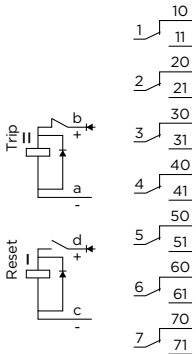
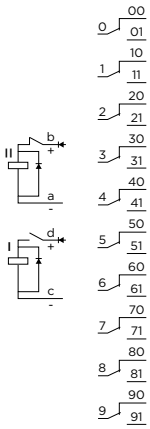
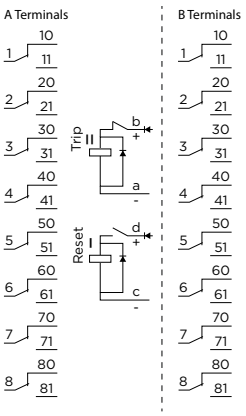
[1] Other voltage upon request
[2] Ask for higher altitudes
[3] If AC, indicate if it is 50Hz or 60Hz

TRIP AND LOCKOUT RELAYS (I)

Model	BF-3R	BF-4R	BJ-8R	BJ-10R	BI-16R
					
Applications	Intended for trip and lockout applications where high demanding requirements in operating time and breaking capacity are needed.				
High burden configuration	Not available	See page 15 for technical details			
Construction characteristics					
Contacts no.	3 Changeover	4 Changeover	8 Changeover	10 Changeover	16 Changeover
Connections					
Options	Options are not available				
Weight (g)	300		600	600	1250
Dimensions (mm)	45 x 45 x 96,5 (F large Type)		90 x 50 x 100,5 (J large Type)	109 x 50 x 111	120 x 110 x 105
Coil characteristics					
Standard voltages[1]	24, 48, 72, 110, 125, 220 Vdc / 63,5, 110, 127, 230 Vac (50-60 Hz)				
Voltage range	+10% -20% U_N				
Pick-up voltage	See pick-up voltage / temperature curves for Latching relays				
Average consumptions only in the change-over	17 W	17 W	30 W	30 W	90 W
Operating time					
Pick-up time	<10 ms (Vdc) <20 ms (Vac)				
Contacts					
Contact material	AgNi				
Distance between contacts	1,8 mm				
Permanent current	10 A				
Instantaneous current	80 A during 200 ms / 200 A during 10 ms				
Max. making capacity	30 A / 3 s / 300 Vdc				
Breaking capacity	See breaking capacity curves (Contact configuration)				
Max. breaking capacity	See value for 50.000 operations				
LDL					
U_{max} opened contact	250 Vdc / 400 Vac				
Performance data					
Mechanical endurance	10^7 operations				10^6 operations
Operating temperature	-40ºC +70ºC				
Storage temperature	-40ºC +85ºC				
Max. operating humidity	93% / +40ºC				
Operating altitude[2]	<2000 m				

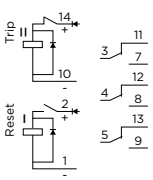
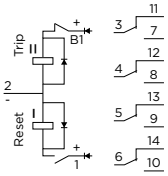
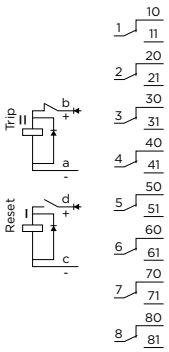
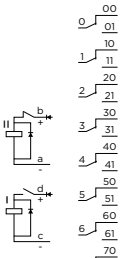
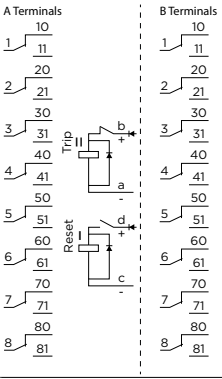
[1] Other voltage upon request
[2] Ask for higher altitudes

TRIP AND LOCKOUT RELAYS (II)

Model	BF-4RP	BJ-8RP	BJ-10RP	BI-16RP
				
Applications	Intended for tripping and locking applications where high quality requirements in operating time and breaking capacity are needed, with manual reset.			
High burden configuration	See page 15 for technical details			
Construction characteristics				
Contacts no.	4 Changeover	8 Changeover	10 Changeover	16 Changeover
Connections				
Options	Options are not available			
Weight (g)	300	600	600	1400
Dimensions (mm)	45 x 45 x 96,5 (F large Type)	90 x 50 x 100,5 (J large Type)	(A) 109 x (B) 50 x (C) 111	(A) 120 x (B) 110 x (C) 105
Coil characteristics				
Standard voltages[1]	24, 48, 72, 110, 125, 220 Vdc 63,5, 110, 127, 230 Vac (50-60 Hz)			110, 125, 220 Vcc[3]
Voltage range	+10% -20% U_N			
Pick-up voltage (20ºC)	See pick-up voltage / temperature curves for Latching relays			
Average consumptions only in the change-over	17 W	30 W	30 W	90W
Operating time				
Pick-up time	<10 ms (Vdc) <13 ms (Vac)	<10 ms (Vdc) <20 ms (Vac)		<10 ms
Contacts				
Contact material	AgNi			
Distance between contacts	1,8 mm			
Permanent current	10 A			
Instantaneous current	80 A during 200 ms / 200 A during 10 ms			
Max. making capacity	30 A / 3 s / 300 Vdc			
Breaking capacity	See breaking capacity curves (Contact configuration)			
Max. breaking capacity	See value for 50.000 operations			
LDL				
U_{max} opened contact	250 Vdc / 400 Vac			
Performance data				
Mechanical endurance	10^7 operations			10^6 operations
Operating temperature	-40ºC +70ºC			
Storage temperature	-40ºC +85ºC			
Max. operating humidity	93% / +40ºC			
Operating altitude[2]	<2000 m			

[1] Other voltage upon request
[2] Ask for higher altitudes
[3] Vac voltage upon request

LATCHING RELAYS WITH COIL OVERVOLTAGE PROTECTION

Model	BF3BB	BF4BB	BJ8BB	BJ10BB	BI16BB
					
Applications	Intended to protect the contact of the equipment that feeds the coil in our relay.				
Construction characteristics					
Contacts no.	3 Changeover	4 Changeover	8 Changeover	10 Changeover	16 Changeover
Connections					
Options	Options are not available				
Weight (g)	300		600	600	1400
Dimensions (mm)	45 x 45 x 96,5 (F large Type)		90 x 50 x 100,5 (J large Type)	109 x 50 x 111	120 x 110 x 105
Coil characteristics					
Standard voltages[1]	24, 48, 72, 110, 125, 220 Vdc / 63,5, 110, 127, 230 Vac (50-60 Hz)[3]				24, 48, 72, 110, 125, 220 Vcc/Vca (50/60 Hz)
Voltage range	+25% -30% U_N				+10% -20% U_n
Pick-up voltage	See pick-up voltage / temperature curves for Latching relays				
Average consumptions only in the change-over	6 W		12 W	12 W	24 W
Operating time					
Pick-up time	<20 ms				
Contacts					
Contact material	AgNi				
Distance between contacts	1,8 mm				
Permanent current	10 A				
Instantaneous current	80 A during 200 ms / 200 A during 10 ms				80 A during 200 ms / 150 A during 10 ms
Max. making capacity	30 A / 3 s / 300 Vdc				
Breaking capacity	See breaking capacity curves (Contact configuration)				
Max. breaking capacity	See value for 50.000 operations				
U_{max} opened contact	250 Vdc / 400 Vac				
Performance data					
Mechanical endurance	10^7 operations				10^6 operations
Operating temperature	-40ºC +70ºC				
Storage temperature	-40ºC +85ºC				
Max. operating humidity	93% / +40ºC				
Operating altitude[2]	<2000 m				

[1] Other voltage upon request
[2] Ask for higher altitudes
[3] Vac voltages upon request

BREAKING CAPACITY

› With devices operating worldwide, also heavy industries like oil & gas sector trust in our relays.

BREAKING CAPACITY

The breaking capacity is a critical parameter on the design and the applications of the relays. Its mechanical life could be considerably reduced, depending on the value of the load (especially with heavy duty loads), the number of operations and the environmental conditions in which the relay is operating.

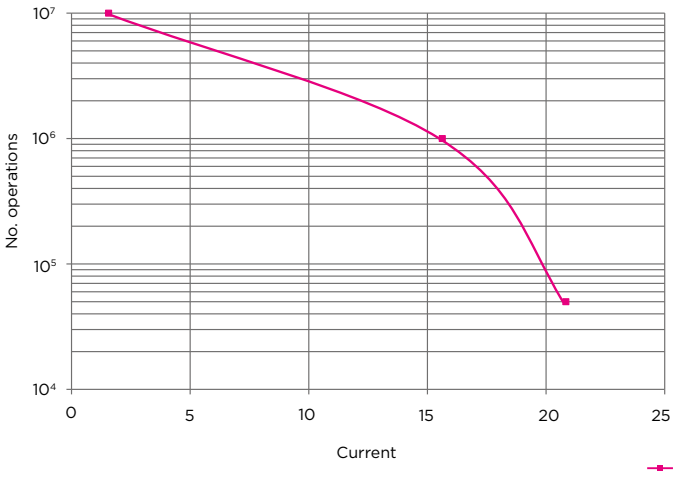
In any configuration, ARTECHE's auxiliary relays have a high breaking capacity values. These limits are showed in the table below, in terms of power and current values. In all the cases, these relays guarantee a right performance during 50,000 operations.

Likewise, the values showed in the following charts have been obtained in standard conditions in the laboratory, and they could be different in real conditions. In any case, the possibility of connecting serial contacts or a bigger distance between contacts makes these values to be considerably increased.

24 Vdc voltage
Different loads configurations.

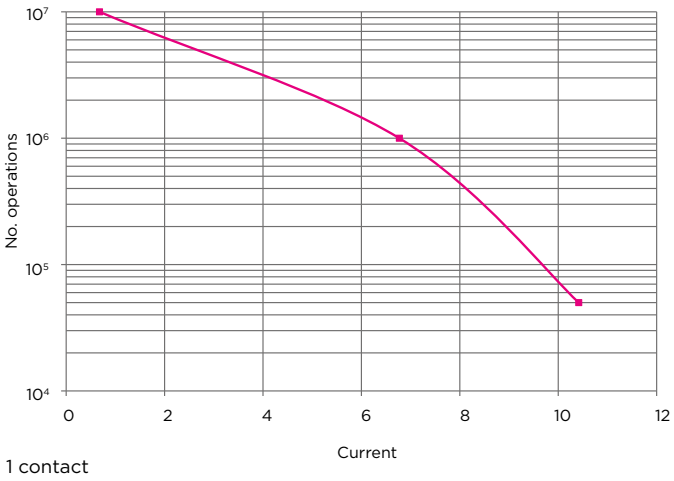
Resistive load:

› L/R= 0 ms.



Highly inductive load:

› L/R= 40 ms.



1 contact

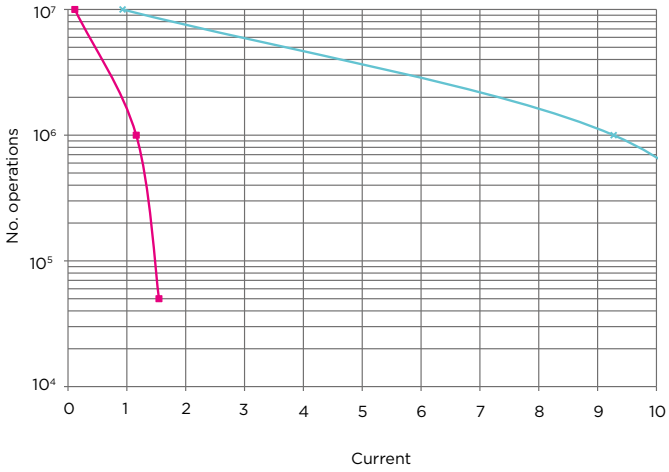
		0 ms		20 ms		40 ms	
Vdc	Contact configuration	P(W)	I(A)	P(W)	I(A)	P(W)	I(A)
24	1 contact	500	20,83	370	15,42	250	10,42

(*) Ask for data and curve of serial contacts

110 Vdc voltage
Different loads configurations.

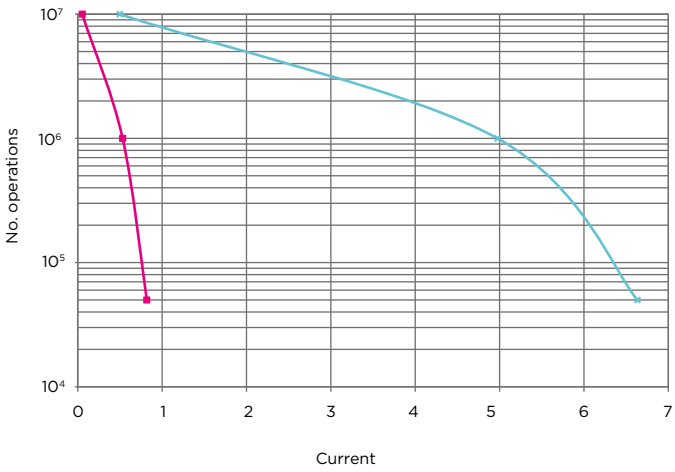
Resistive load:

› L/R= 0 ms.



Highly inductive load:

› L/R= 40 ms.



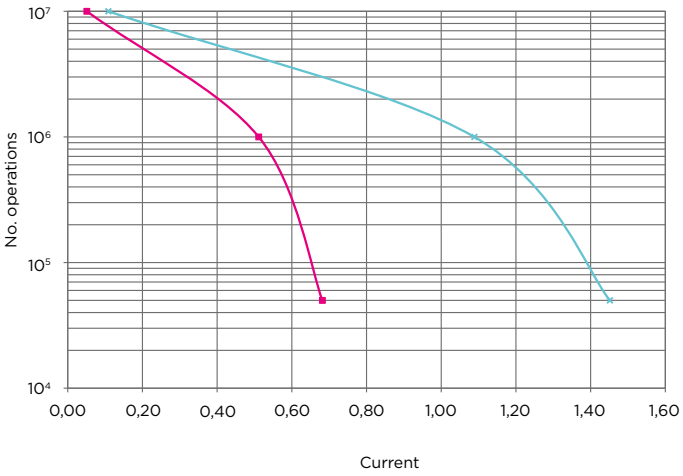
1 contact
2 contacts

		0 ms		20 ms		40 ms	
Vdc	Contact configuration	P(W)	I(A)	P(W)	I(A)	P(W)	I(A)
110	1 contact	170	1,55	140	1,27	90	0,82
	2 contacts	1,360	12,36	1,106	10,05	730	6,63

220 Vdc voltage
Different loads configurations.

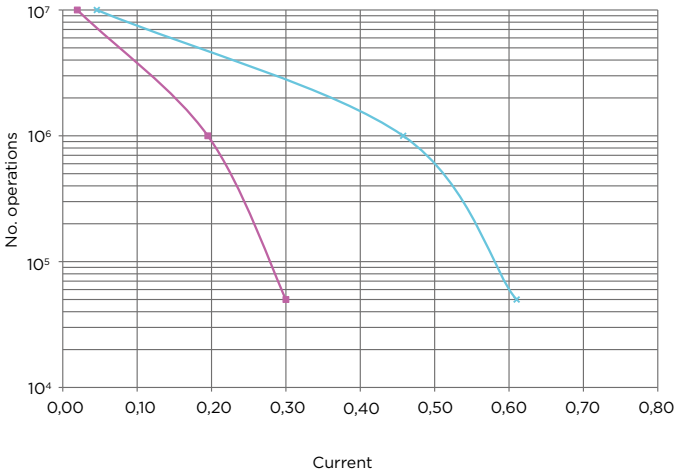
Resistive load:

› L/R= 0 ms.



Highly inductive load:

› L/R= 40 ms.



1 contact
2 contacts

		0 ms		20 ms		40 ms	
Vdc	Contact configuration	P(W)	I(A)	P(W)	I(A)	P(W)	I(A)
220	1 contact	150	0,68	115	0,52	66	0,30
	2 contacts	319	1,45	234	1,06	134	0,61

HOW TO SELECT THE CURVE OF MY RELAY

These charts show the breaking capacity values, either for resistive and highly inductive loads, in three voltage values of reference (ask for other voltage values). The charts show two different curves:

- 1 contact: Breaking capacity of the relays with distance between contacts = 1.8 mm.
- 2 contacts: Breaking capacity for relays with serial contacts, and distance between contacts=1.8 mm.

The distance between contacts is shown in the tables of technical data.

HOW THE BREAKING CAPACITY CAN BE INCREASED

ARTECHE's auxiliary relays are power relays, designed specially to have a high breaking capacity. Thus, there are applications where the loads are so high that it is necessary to even increase the breaking capacity, keeping the reliability of the contacts of the auxiliary relays.

Thus, ARTECHE relays have the following alternatives and recommendations:

- Possibility of external connection of equipment (serial contacts) getting an important increase of breaking capacity in these equipment is shown, guaranteeing the right performance during a high number of operations.

LOW DUTY LOADS CAPABLE RELAYS (LDL)

There are some applications where the relay contacts stablish circuits where the driven current is intrinsically low and are very dependent upon the voltage applied. In this kind of use, if the voltage applied to those kind of circuits differs (even slightly) from the one already specified, the circuit energisation fails.

One of these cases is when we use relays to activate digital inputs. In these situations is necessary to minimise the contact resistance in the relay. To achieve that, while the relay is manufactured, its contacts are submitted to an special conditioning to make its contacts resistance extremely low.

HIGH BURDEN RELAYS

It is possible to request the "High Burden" feature for all models, so that they are less sensitive to spurious discharges of the capacitive type, which can occur in the place of installation of these relays, especially in cases where there are long copper sections connected to the coils of the latching relays (relays installed in the substation yard, away from contact with protections that activate them).

This "HB" feature is incompatible with the "Reset Inhibitor" feature for the BF3R and BF4R models.

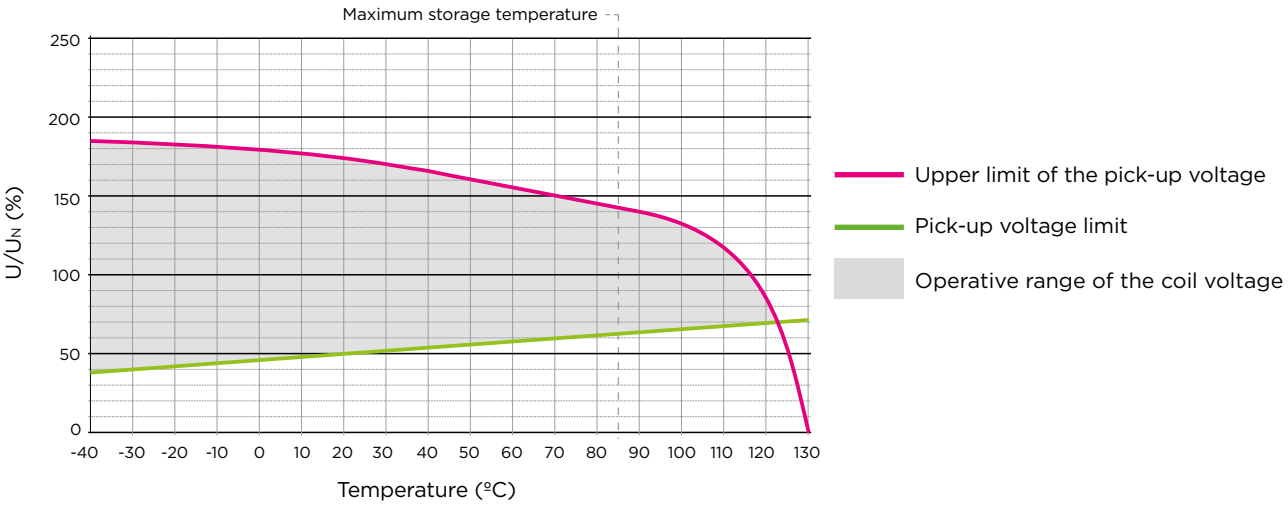
PICK-UP VOLTAGE/RELEASE VOLTAGE-TEMPERATURE CHARTS

Variability of operative voltage range against temperature for the latching auxiliary relays.

General purpose latching relays and relays with coil overvoltage protection.

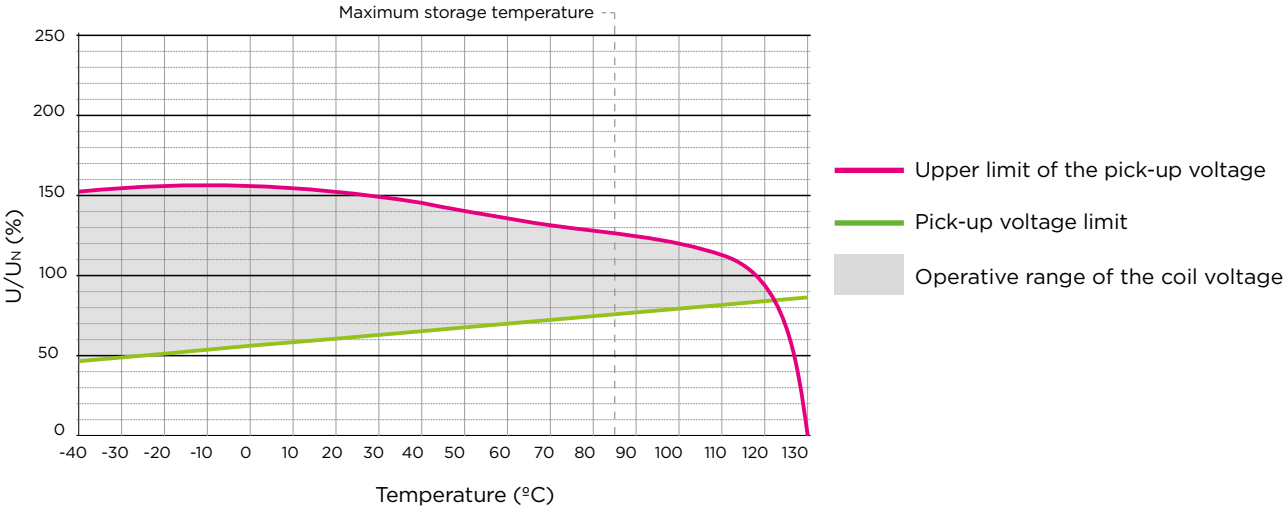
GENERAL PURPOSE RELAYS

Operative range against ambient temperature.



TRIP AND LOCKOUT RELAYS AND TRIP AND LOCKOUT RELAY WITH PUSH TO RESET BUTTON

Operative range against ambient temperature.



MODELS SELECTION

Latching	Type	Range	IR*	Aux. Supply Vdc or Vac.	Range LDL**
Model Selection ▶▶					
Gama de propósito general					
3 contacts relay	BF3	***			
3 contacts relay	BF3R	***			
4 contacts relay	BF4				
4 contacts relay	BF4R				
4 contacts relay	BF4RP				
8 contacts relay	BJ8				
8 contacts relay	BJ8R				
8 contacts relay	BJ8RP				
10 contacts relay	BJ10				
10 contacts relay	BJ10R				
10 contacts relay	BJ10RP				
16 contacts relay	BI16				
16 contacts relay	BI16R				
16 contacts relay	BI16RP				
Options					
Diode in parallel with the coil (only Vdc)		BB			
High Burden		HB			
Aux. Supply Vdc or Vac					
Indicate voltage level and if it is VDC or VAC (ex: 24 VDC) If AC, indicate if it is 50Hz or 60Hz					
Range LDL					
Low duty loads	No				-
	Yes				LDL

* IR indicates Reset Inhibitor
Gray shading indicates incompatibility of option IR with HB.

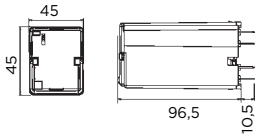
** Indicate just if LDL range is required.
*** HB option not available

DIMENSIONS OF THE RELAYS

Relay Dimensions

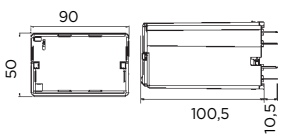
Type F

F large

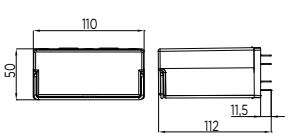


Type J

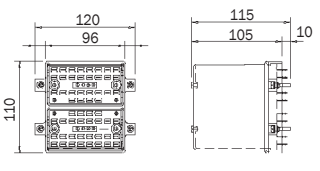
J large



Type J10



Type I



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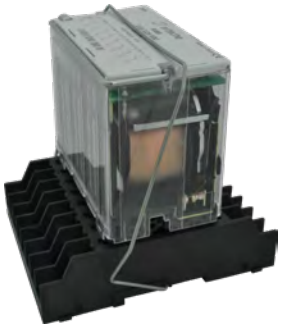
RETAINING CLIPS

RETAINING CLIPS	OP SOCKET	RELATED PLUGGED RELAY	
E0	Universal (D and F sized sockets require 2 units ; J sized sockets require 4 units)	RD; RF; RJ; TDF; TDJ; VDF; VDJ; BJ10	Universal (Bag of 20 units)
			Universal (Bag of 100 units)
E41	DN-DE IP, DN-DE 2C IP	RD OP	
E50	DN-TR OP, DN-TR 2C OP	RD OP	
E40	FN-DE IP, FN-DE 2C IP	RF OP	
E43	FN-DE IP, FN-DE 2C IP	TDF OP; VDF OP	
E42	FN-TR OP, FN-TR 2C OP	RF OP	
E44	FN-TR OP, FN-TR 2C OP	TDF OP; VDF OP	
E31	FN-DE IP, FN-DE 2C IP	BF	
E21	FN-TR OP, FN-TR 2C OP	BF	
E45	JN-DE IP, JN-DE 2C IP	RJ OP	
E47	JN-DE IP, JN-DE 2C IP	TDJ OP; VDJ OP	
E46	JN-TR OP, JN-TR 2C OP	RJ OP	
E48	JN-TR OP, JN-TR 2C OP	TDJ OP; VDJ OP	
E49	J10N-TR OP, J10N-TR 2C OP	BJ10	
E51	JN10-DE IP, J10N-DE 2C IP	BJ10	
E29	JN-DE IP, JN-DE 2C IP	BJ; UJ	
E27	JN-TR OP, JN-TR 2C OP	BJ; UJ	
OTHER ACCESSORIES			
Security pins for RD; RF; RJ; TDF; TDJ; VDF; VDJ relays (bag of 100 units)			

› E0 retaining clips

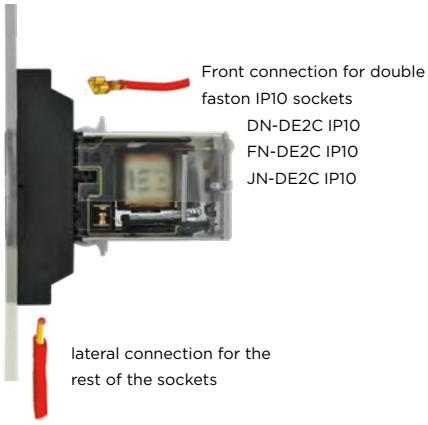


› E** retaining clips

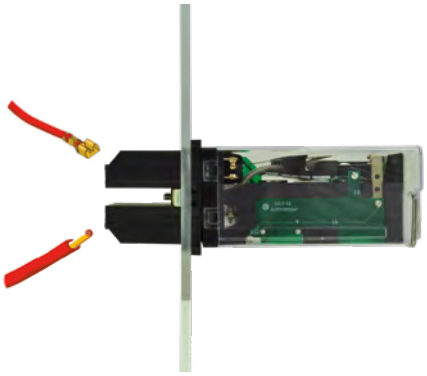
SOCKETS, DIMENSIONS AND CUT-OUT

Sockets		Accessories		
Relay	Type	Screw	Double faston	Weight (g)
F	IP10 Front connection	FN-DE IP10	FN-DE2C IP10	110
	IP20 Front connection	FN-DE IP20	FN-DE2C IP20	110
	IP10 Rear connection	FN-TR OP	FN-TR2C OP	90
	IP10 Flush mounting	F-EMP OP		300
J	IP10 Front connection	JN-DE IP10	JN-DE2C IP10	225
	IP20 Front connection	JN-DE IP20	JN-DE2C IP20	225
	IP10 Rear connection	JN-TR OP	JN-TR2C OP	180
	IP10 Flush mounting	J-EMP OP		300
J10	IP20 Front connection	J10N-DE IP20	J10N-DE2C IP20	280
	IP10 Rear connection	J10N-TR OP	J10N-TR2C OP	225
	IP10 Flush mounting	J10-EMP OP		325
I	IP10 Rear connection	I-TR	I-TR2C	500
	IP10 Flush mounting	I-EMP		500

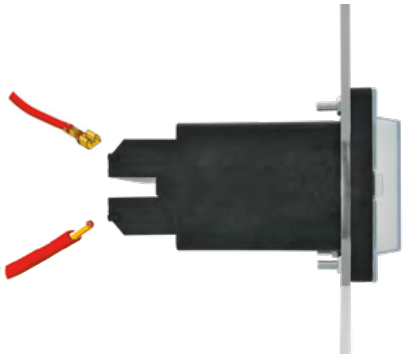
Accessories
Retaining clips
Function signs on the extraction ring



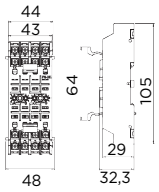
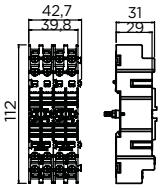
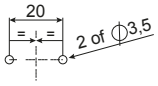
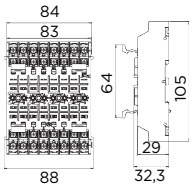
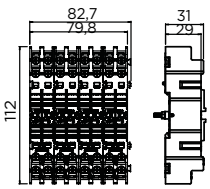
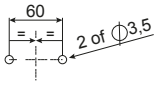
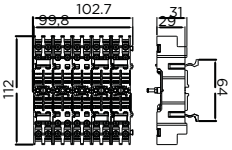
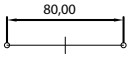
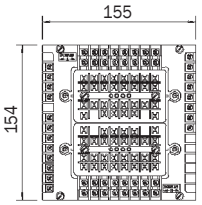
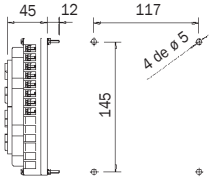
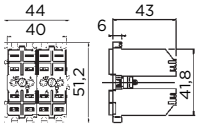
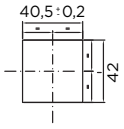
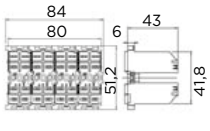
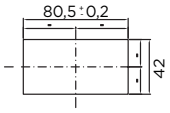
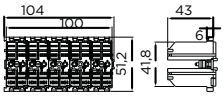
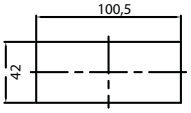
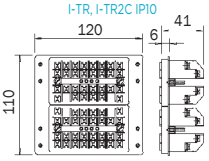
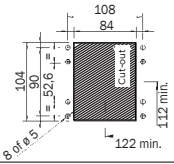
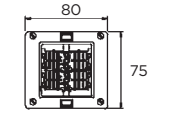
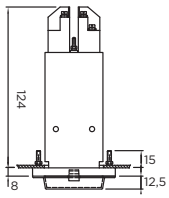
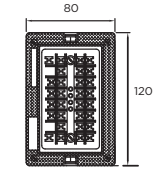
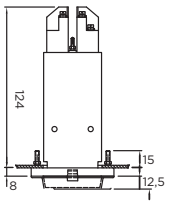
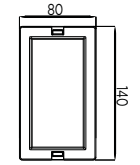
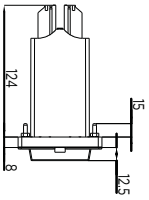
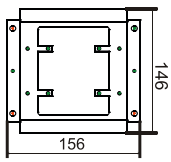
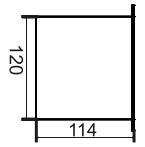
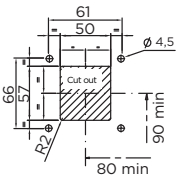
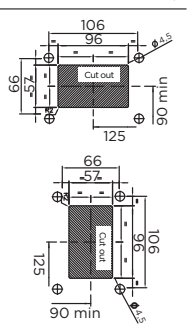
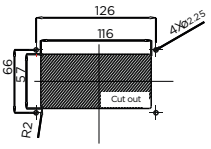
› Front connection socket



› Rear connection socket



› Flush mounting socket

	Relays type F	Relays type J	Relays type J10	Relays type I
Sockets for DIN rail (1) (2)	FN-DE IP10 • FN-DE2C IP10  FN-DE IP20 • FN-DE2C IP20  Fix Drilling 	JN-DE IP10 • JN-DE2C IP10  JN-DE IP20 • JN-DE2C IP20  Fix Drilling 	J10N DE IP20 • J10N DE2C IP20  Fix Drilling AGUJEROS DE FIJACIÓN FIX DRILLING 	I-DE IP10  Fix Drilling 
Sockets for rear connection	FN-TR OP IP10 • FN-TR2C OP IP10  	JN-TR OP IP10 • JN-TR2C OP IP10  	J10N TR OP • J10N TR2C OP  	I-TR, I-TR2C IP10  
Sockets for flush mounting	F-EMP OP IP10  	J-EMP OP IP10  	J10 EMP TR OP  	I-EMP IP10  
Cut-out				

(1) DIN rail according to EN50022 DIN46277/3

(2) Minimum distance between sockets will depend on type of relay and sockets. Please request sockets user manual for more detailed information.

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Moving together

Updates: ARTECHE_CT_LATCHING-RELAYS_EN
Version: 5.0