

**PFRS / PFRT  
DFRS / DFRT**

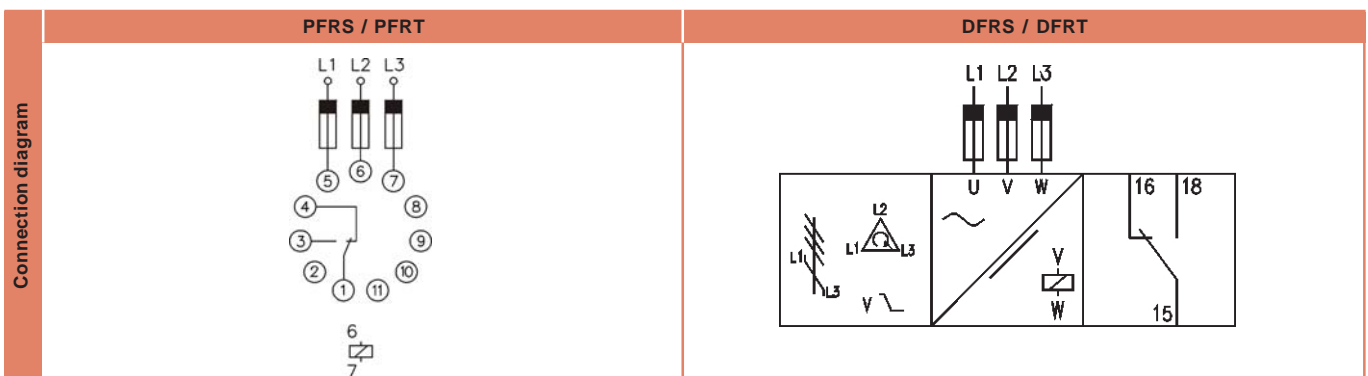
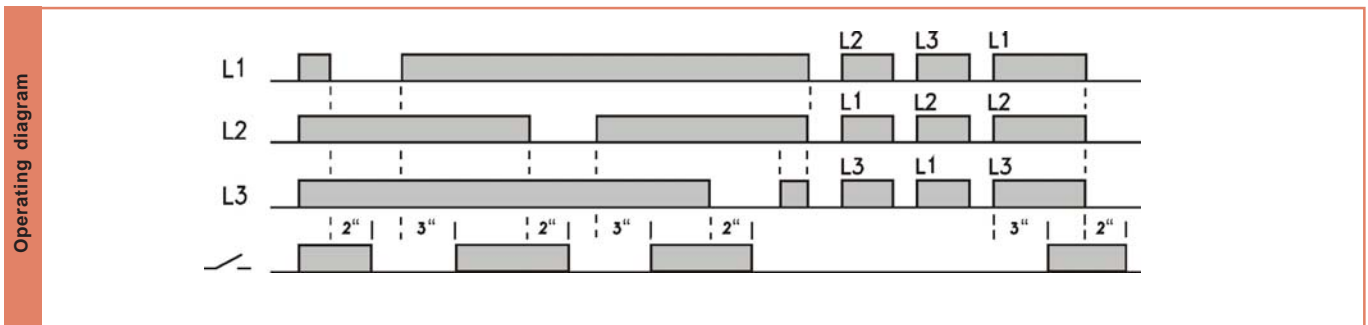


**PHASE RELAY WITH  
DELAY ON DETECTION  
AND DELAY ON RELEASE**

Function	Phase failure relay. Delay on detection and delay on release.
Difference	Succession, voltage fault, unbalance and rotation angle.
Operating principle	The three-phase line is connected to terminals 5, 6 and 7 (PFRS/T) or U, V and W (DFRS/T) in the order indicated in the connection diagram. While there is no anomaly the relay remains operated, and it releases for any of the following causes: . If the phase voltage is not correct. . If one or more phases are not present. . If the voltage drop in one or all the phases exceeds 20% of nominal voltage. . If rotation angle between phases is unbalanced in $\pm 15\%$ .
Contacts	PFRS - 1 SPDT PFRT - 2 DPDT
Leds indication	Power on: Green Relay on: Red
Delay on detection	2 Seg. approx., fix.
Delay on release	3 Seg. approx., fix.
Direction by	Voltage drop -20% Angle variation $\pm 15\%$ .

	HOUSING	FUNCTION	OUTPUT	VOLTAGE	RANGES
Reference	P Plg-inn	FR Phase relay	S SPDT T DPDT	110 3 x 110 VAC	50 50 Hz 60 60 Hz
	D DIN rail			220 3 x 220 VAC 400 3 x 400 VAC 440 3 x 440 VAC 500 3 x 500 VAC	

To compose the reference, select one option of each column. Example: **PFRS 110 50**



		PFRS	PFRT	DFRS	DFRT	
Output relays						
	Resistive load	AC	10 A / 250 V	8 A / 250 V	10 A / 250 V	8 A / 250 V
		DC	0,4 A / 200 V 10 A / 24 V	0,25 A / 200 V 8 A / 24 V	0,4 A / 200 V 10 A / 24 V	0,25 A / 200 V 8 A / 24 V
	Inductive load	AC	5 A / 250 V	2,5 A / 250 V	5 A / 250 V	2,5 A / 250 V
		DC	5 A / 24 V	4 A / 24 V	5 A / 24 V	4 A / 24 V
	Mechanical life		> 30 x 10 <sup>6</sup> operations		> 30 x 10 <sup>6</sup> operations	
	Max. switching rate, mech.		72.000 operations / hour		72.000 operations / hour	
	Electrical life at full load		360 operations / hour		360 operations / hour	
	Contact material		AgNi 90/10		AgNi 90/10	
	Maximum voltage		440 VAC		440 VAC	
	Operating voltage		250 VAC		250 VAC	
	Volt. between changeovers		2500 VAC		2500 VAC	
	Voltage between contacts		1000 VAC		1000 VAC	
	Voltage coil/contact		5000 VAC		5000 VAC	
Distance coil/contact		10 mm		10 mm		
Isolation resistance		> 10 <sup>4</sup> MΩ		> 10 <sup>4</sup> MΩ		

Supply	AC	
	PFRS/PFRT	DFRS/DFRT
	Galvanic isolation	
	Yes	
	Frequency	
50 / 60 Hz		
Operating margins		
±10% -15%		
Positive		
-		
Protected polarity		
-		

Constructive and environmental data	PFRS / PFRT	DFRS / DFRT	
	Voltage phase-neutral	300 V	300 V
	Oversvoltage category	III	III
	Rated impulse voltage	4 kV	4 kV
	Pollution degree	2	3
	Protection	IP 20 B	IP 20
	Approximate weight	250 g	280 g
	Storage temperature	-50°C +85°C	-50°C +85°C
	Operating temperature	-20°C +50°C	-20°C +50°C
	Humidity	30~85% HR	30~85% HR
	Housing	Cyclopy - Light grey	Cyclopy - Light grey
	Socket	Lexan - Light grey	-
	Visor leds	Lexan - Transparent	Lexan - Transparent
	Button, terminal block, clip	Technyl - Dark blue	Technyl - Dark blue
Pins of the socket	Nickel brass	-	
Pins of the terminal block	-	Brass	
Approvals	Designed and manufactured under EEC standards. Electromagnetic compatibility, directives 89/366/EEC and 92/31/EEC. Electric safety, directive 73/23/EEC. Plastics: UL 91 V0		

Dimensions	PFRS / PFRT	DFRS / DFRT

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