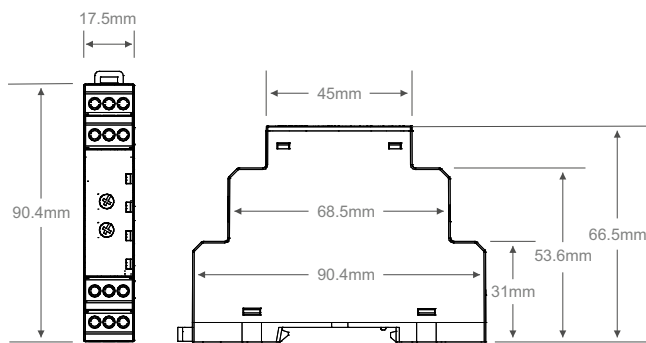
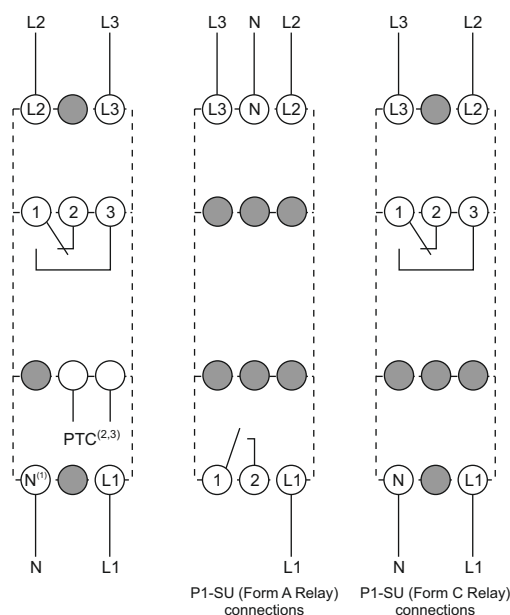


Klemsan® P Series Protection Relays

Operating voltage (U _N)	85 .. 320V AC (P1 Series, except P1-P) 18 .. 320V AC/DC (P1-P) 150 .. 500V AC (P1D Series) 180 .. 265V AC (220V P1-SU Series) 90 .. 150V AC (110V P1-SU Series)
Supply input	L1 - N (P1 Series) L2 - L3 (P1D Series) L3 - N (P1-SU Series)
Operating frequency	35 .. 70 Hz (P1, P1D Series) 50 .. 60 Hz (P1-SU Series)
Voltage measurement range	U _N
Unbalance delay	2 second
Unbalance threshold	± %20 (P1, P1D Series) - %40 (P1-SU Series)
Unbalance hysteresis	%3 x 230V AC (P1 Series) %3 x 400V AC (P1D Series)
PTC alarm threshold	≈1100Ω
Over over voltage threshold	310V AC (P1 Series) 510V AC (P1D Series)
Under under voltage threshold	140V AC (P1 Series) 240V AC (P1D Series)
Output contact	1 C/O (P1, P1D, P1-SU Series) 1 NO (P1-SU Series)
Maximum switching current	10A
Maximum switching voltage	250V AC
Maximum switching power	1250VA
Operating temperature	-20°C .. 60°C
Storage temperature	-40°C .. 75°C
Protection class	IP20
Connection	Rail mounted



Dimensions



- (1) : This terminal is closed in the devices without neutral connection
- (2) : PTC terminals must be shorted when not used
- (3) : This terminals are closed in the devices without PTC protection

Connections

FAILURE TYPE	LED INDICATION	DESCRIPTION
phase failure	A1: A2:	L1: L2: L3: R:
phase sequence error	A1: A2:	L1: L2: L3: R:
unbalance	A1: A2: devices with neutral connection $A(\%) = \frac{V_{LN(max)} - V_{LN(min)}}{230V} \times 100$ devices without neutral connection $A(\%) = \frac{V_{LL(max)} - V_{LL(min)}}{400V} \times 100$	L1: L2: L3: R:
PTC error	A1: A2:	PTC sensor R:
over over voltage	A2:	L1: L2: L3: R:
under under voltage	A1:	L1: L2: L3: R:
frequency error (F < 32Hz or F > 100Hz)	ON:	Freq. R:

type	neutral connection	phase failure	phase squence	unbalance	PTC protection	over over/under under voltage protection	form a relay	form c relay	order no
P1-A	✓	✓		✓		✓	✓		270 150
P1-P	✓				✓			✓	270 151
P1-S	✓	✓	✓				✓		270 152
P1-SP	✓	✓	✓		✓		✓		270 153
P1-SA	✓	✓	✓	✓		✓	✓		270 154
P1-SAP	✓	✓	✓	✓	✓	✓	✓		270 155
P1D-SA		✓	✓	✓	✓	✓	✓		270 254
P1D-SAP		✓	✓	✓	✓	✓	✓		270 255
P1-SU 230A	✓	✓	✓	✓	✓		✓		270 400
P1-SU 230C	✓	✓	✓	✓	✓		✓		270 401
P1-SU 115A	✓	✓	✓	✓			✓		270 402
P1-SU 115C	✓	✓	✓	✓			✓		270 403