2018 Catalog

Easergy P3

Network Protection Relays

easergy.schneider-electric.com

Life Is On Schneider Electric

Selection guide

		Feeder (P3U)		Motor (P3U)		Advanced (P3x)						
Protection functions	**ANSI code**	**P3U10 P3U20**	**P3U30**	**P3U10 P3U20**	**P3U30**	**P3F30**	**P3L30**	**P3M30**	**P3M32**	**P3G30**	**P3G32**	**P3T32**
Distance	21	-	-	-	-	-	1	-	-	-	-	-
Under-impedance	21G	-	-	-	-	-	-	-	-	2	2	-
Fault locator	21FL	-	1	-	1	1	1	-	-	-	-	-
Overfluxing	24	-	-	-	-	-	-	-	-	1	1	1
Synchro-check	25	-	2	-	2	2	2	2	2	2	2	2
Undervoltage	27	-	3	-	3	3	3	3	3	3	3	3
Positive sequence undervoltage	27P	-	-	-	-	-	-	-	-	2	2	-
Directional active underpower	32	-	2	-	2	2	2	2	2	2	2	2
Phase undercurrent	37	1	1	1	1	-	-	1	1	-	-	-
Temperature monitoring	38/49T	12 (0)(1)	12 (1)	12 (0)(1)	12 (1)	12 (1)	12 (1)	12 (1)	12 (1)	12 (1)	12 (1)	12 (1)
Loss of field	40	-	-	-	-	-	-	-	-	1	1	-
Under-reactance	21/40	-	-	-	-	-	-	-	-	2	2	-
Negative sequence overcurrent (motor, generator)	46	-	-	2	2	-	-	2	2	2	2	2
Incorrect phase sequence	46	-	-	1	1	-	-	1	1	-	-	-
Cur. unbalance, broken conductor	46BC	1	1	-	-	1	1	-	-	-	-	-
Negative sequence overvoltage protection	47	-	3	-	3	3	3	3	3	3	3	3
Excessive start time, locked rotor	48/51LR	-	-	1	1	-	-	1	1	-	-	-
Thermal overload	49	1	1	1	1	1	1	1	1	1	1	1
Phase overcurrent	50/51	3	3	3	3	3	3	3	3	3	3	3
Earth fault overcurrent	50N/51N	5	5	5	5	5	5	5	5	5	5	5
Breaker failure	50BF	1	1	1	1	1	1	1	1	1	1	1
Switch On To Fault (SOTF)	50HS	1	1	1	1	1	1	1	1	1	1	1
Capacitor bank unbalance	51C	2	2	2	2	2	2	2	2	2	2	2
Voltage dependant overcurrent	51V	-	1	-	1	1	1	-	-	1	1	-
Overvoltage	59	-	3	-	3	3	3	3	3	3	3	3
Capacitor overvoltage	59C	1	1	-	-	1	1	-	-	-	-	-
Neutral voltage displacement	59N	3	3	3	3	2	2	2	2	2	2	2
CT supervision	60	1	1	1	1	1	1	1	1	1	2	2
VT supervision	60FL	-	1	-	1	1	1	1	1	1	1	1
Restricted earth fault (low imped.)	64REF	-	-	-	-	-	-	-	-	-	1	1
Stator earth fault	64S	-	-	-	-	-	-	-	-	1	1	-
Frequent start inhibition	66	-	-	1	1	-	-	1	1	-	-	-
Directional phase overcurrent	67	-	4	-	4	4	4	4	4	4	4	4
Directional earth-fault o/c	67N	3	3	3	3	3	3	3	3	3	3	3
Transient intermittent	67NI	1	1	-	-	1	1	-	-	-	-	-
Magnetizing inrush detection	68F2	1	1	1	1	1	1	1	1	1	1	1
Fifth harmonic detection	68H5	1	1	1	1	1	1	1	1	1	1	1
Pole slip	78PS	-	-	-	-	-	-	-	-	1	1	-
Auto-recloser	79	5	5	-	-	5	5	-	-	-	-	-
Over or under frequency	81	-	2/2	-	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Rate of change of frequency	81R	-	1	-	1	1	1	1	1	1	1	1
Under frequency	81U	-	2	-	2	2	2	2	2	2	2	2
Lockout	86	1	1	1	1	1	1	1	1	1	1	1
Line differential	87L	-	-	-	-	-	2	-	-	-	-	-
Machine differential	87M	-	-	-	-	-	-	-	2	-	2	-
Transformer differential	87T	-	-	-	-	-	-	-	-	-	-	2
Programmable stages	99	8	8	8	8	8	8	8	8	8	8	8
Arc-flash detection (AFD)		-	-	-	-	8	8	8	8	8	8	8
Cold load pick-up (CLPU)		1	1	1	1	1	1	1	1	1	1	1
Programmable curves		3	3	3	3	3	3	3	3	3	3	3
Setting groups (3)		4	4	4	4	4	4	4	4	4	4	4

(0) No temperature sensors for P3U10 and 12 optional for P3U20
(1) Using external RTD module
(2) P3U10 and P3U20 offer one voltage input. Function availability depends on the connection of the voltage input
(3) Not all protection functions have 4 setting groups. See details in the manual.

Fast ordering code

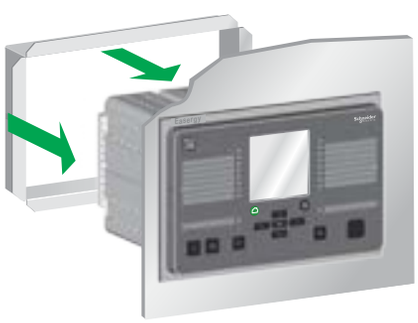
Easergy P3 Standard

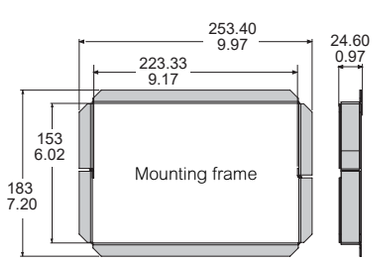
Easergy P3 Standard

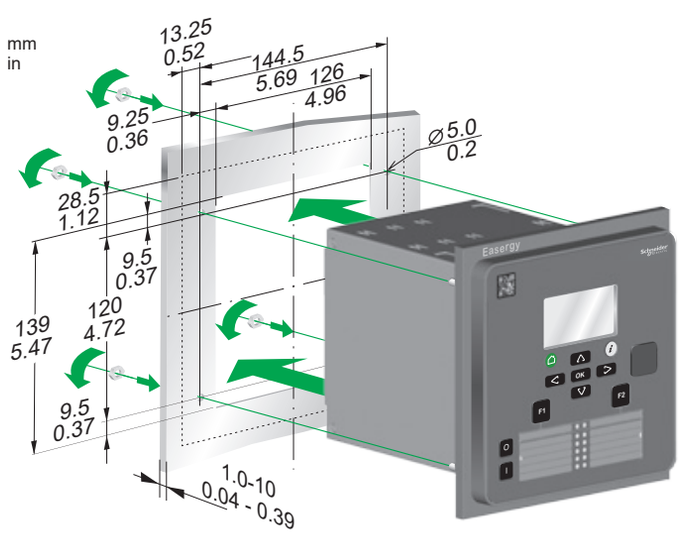
	Product Reference	Nominal Power Supply	Nominal Digital Input Voltage	Voltage Input	Nbr. Digital Input/Output	Option	Com. Port
REL52001	P3U30-5AAA3BCAA	Power A 48-230 V	220-230 Vac/dc	4	16 DI / 8 DO	Screw connector	2 x RJ45
REL52002	P3U30-5AAA3BBAA	Power A 48-230 V	220-230 Vac/dc	4	16 DI / 8 DO	Screw connector	RS485
REL52003	P3U30-5AAA1BCAA	Power A 48-230 V	24-230 Vac/dc	4	16 DI / 8 DO	Screw connector	2 x RJ45
REL52004	P3U30-5AAA2BCAA	Power A 48-230 V	110-230 Vac/dc	4	16 DI / 8 DO	Screw connector	2 x RJ45
REL52005	P3U30-5AAA1BBAA	Power A 48-230 V	24-230 Vac/dc	4	16 DI / 8 DO	Screw connector	RS485
REL52006	P3U30-5ABA1BBAA	Power B 24 V	24-230 Vac/dc	4	16 DI / 8 DO	Screw connector	RS485
REL52007	P3U30-5AAA1BDAA	Power A 48-230 V	24-230 Vac/dc	4	16 DI / 8 DO	Screw connector	2 x LC
REL52008	P3U30-6AAA2BCAA	Power A 48-230 V	110-230 Vac/dc	4	16 DI / 8 DO	Ring-lug connector	2 x RJ45
REL52009	P3U30-5ABA1BCAA	Power B 24 V	24-230 Vac/dc	4	16 DI / 8 DO	Screw connector	2 x RJ45
REL52010	P3U30-5AAA2BDAA	Power A 48-230 V	110-230 Vac/dc	4	16 DI / 8 DO	Screw connector	2 x LC
REL52011	P3U20-5ABA1ACAA	Power B 24 V	24-230 Vac/dc	1	10 DI / 5 DO	Screw connector	2 x RJ45
REL52012	P3U30-5AAA2BBAA	Power A 48-230 V	110-230 Vac/dc	4	16 DI / 8 DO	Screw connector	RS485
REL52013	P3U20-5AAA1ACAA	Power A 48-230 V	24-230 Vac/dc	1	10 DI / 5 DO	Screw connector	2 x RJ45
REL52014	P3U30-5ABA1BDAA	Power B 24 V	24-230 Vac/dc	4	16 DI / 8 DO	Screw connector	2 x LC
REL52015	P3U20-6AAA2ACAA	Power A 48-230 V	110-230 Vac/dc	1	10 DI / 5 DO	Ring-lug connector	2 x RJ45
REL52016	P3U30-6AAA2BBAA	Power A 48-230 V	110-230 Vac/dc	4	16 DI / 8 DO	Ring-lug connector	RS485
REL52017	P3U30-6AAA3BCAA	Power A 48-230 V	220-230 Vac/dc	4	16 DI / 8 DO	Ring-lug connector	2 x RJ45
REL52018	P3U20-5AAA2ACAA	Power A 48-230 V	110-230 Vac/dc	1	10 DI / 5 DO	Screw connector	2 x RJ45
REL52019	P3U30-5AAA1BFAA	Power A 48-230 V	24-230 Vac/dc	4	16 DI / 8 DO	Screw connector	LC + RS232
REL52020	P3U30-6ABA1BBAA	Power B 24 V	24-230 Vac/dc	4	16 DI / 8 DO	Ring-lug connector	RS485
REL52021	P3U30-6AAA2BDAA	Power A 48-230 V	110-230 Vac/dc	4	16 DI / 8 DO	Ring-lug connector	2 x LC
REL52022	P3U30-6AAA1BCAA	Power A 48-230 V	24-230 Vac/dc	4	16 DI / 8 DO	Ring-lug connector	2 x RJ45
REL52023	P3U20-6ABA1ADAA	Power B 24 V	24-230 Vac/dc	1	10 DI / 5 DO	Ring-lug connector	2 x LC
REL52024	P3U20-5ABA1ADAA	Power B 24 V	24-230 Vac/dc	1	10 DI / 5 DO	Screw connector	2 x LC
REL52025	P3U30-5BAA2BCAA	Power A 48-230 V	110-230 Vac/dc	4	16 DI / 8 DO	Screw connector	2 x RJ45
REL52032	P3U20-5AAA1ABAA	Power A 48-230 V	24-230 Vac/dc	1	10 DI / 5 DO	Screw connector	RS485

Cut-out and mounting

Cut-out accuracy must be complied with to ensure good withstand.

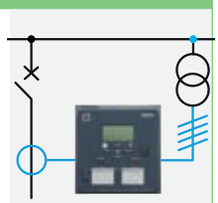
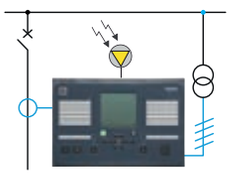
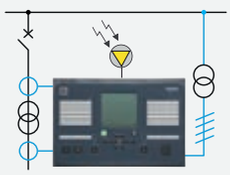






Selection guide

Easergy P3 contains
Two main devices, each with specific functions to address your needs in a one-box design, regardless of application.

		Easergy P3 Standard			Easergy P3 Advanced	
						
Feeder		P3**U10**	P3**U20**	P3**U30** with directional O/C with voltage protection	P3**F30** with directional P3**L30** line diff. & distance	-
Transformer					-	P3**T32** with differencial
Motor					P3**M30**	P3**M32** with differencial
Generator					P3**G30**	P3**G32** with differencial
Characteristics						
Measuring inputs	Phase current	1/5A CT (x3)			1/5A CT (x3)	1/5A CT (x6)
	Residual current	1/5A CT or 0.2/1A CT			(1/5A+0.2/1A) CT	2 x (1/5A+0.2/1A) CT
	Voltage	VT (x1)		VT (x4)	VT (x4)	VT (x4)
Arc-flash sensor input		-			Loop sensor: 1 Point sensor: 2, 4 or 6 (1) (2)	Loop sensor: 1 Point sensor: 2, 4 or 6 (1)
Digital	Input	2	10	16	6 to 36	6 to 16
	Output	5 + SF	5 + SF	8 + SF	10 to 21 + SF	10 to 13 + SF
Analogue	Input	-	0 or 4 (1)		0 or 4 (1)	
	Output	-	0 or 4 (1)		0 or 4 (1)	
Temperature sensor input		-	0 or 8 or 12 (1)		0 or 8 or 12 (1)	
Front port		USB type B			USB type B	
Nominal power supply		24V dc or 24–48V dc or 48-230V ac/dc (4)			24 to 48V dc or 110-240V ac/dc	
Ambient temperature, in service		-40 to 60°C (-40 to 140°F)			-40 to 60°C (-40 to 140°F)	
Communication						
Rear ports RS232, IRIG/B, RS485, Ethernet		-	●	●	●	●
Protocols	IEC61850 ed1 & ed2	-	●	●	●	●
	IEC 60870-5-101 & 103	-	●	●	●	●
	DNP3 over Ethernet	-	●	●	●	●
	DNP3 serial	-	●	●	●	●
	Modbus serial	-	●	●	●	●
	Modbus over Ethernet	-	●	●	●	●
	Ethernet IP	-	●	●	●	●
	DeviceNet	-	●	●	●	●
	Profibus DP	-	●	●	●	●
	SPAbus	-	●	●	●	●
Redundancy protocols (RSTP/PRP)		-	●	●	●	●
Others						
Control		1 object 1 display	4 objects 4 display	4 objects 8 display	5-6 objects 3-8 display	
Logic (Matrix + Logic equation)		●			●	
Withdrawable CT connector with shorting		●			-	
Remote HMI		-			●	
Hardware dimensions (W/H/D)		171 x 176 x 214(3) mm / 6.73 x 6.93 x 8.43 in			264 x 177 x 208 mm / 10.39 x 6.97 x 8.19 in	

(1) Depends on optional module
(2) P3L30 can have 1 loop or 2 point sensors only
(3) 226 mm (8.90 in) with ring-lug connectors
(4) Check the available power supply range from the device's serial number label