

## RELAY TYPES THAT CAN BE TESTED

DEVICE IEEE	RELAY TYPE	PTE-20-FA	PTE-100-C	PTE-50-CE	PTE-100-V	PTE-300-V	PTE-50-CET	PTE-100-V PTE-50-CE	PTE-100-V PTE-100-C	PTE-300-V PTE-50-CE	PTE-300-V PTE-100-C	PTE-50-CET PTE-100-V	TRES	MENTOR
2	Time-Delay Starting Relay	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
21	Distance 1Ø		Plus / Pro	Pro		✓	✓	✓	✓	✓	✓	✓	✓	✓
21	Distance (open triangle)					✓	✓	✓	✓	✓	✓	✓	✓	✓
21	Distance 3Ø					✓	✓	✓	✓	✓	✓	✓	✓	✓
24	Volts / Hertz		Plus / Pro	Pro	✓	✓		✓	✓	✓	✓	✓	✓	✓
25	Synchronizing		Plus / Pro	Pro	✓	✓		✓	✓	✓	✓	✓	✓	✓
27	Undervoltage Relay AC/DC		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
32	Directional Power Relay 1Ø		Plus / Pro	Pro	✓	✓		✓	✓	✓	✓	✓	✓	✓
32	Directional Power Relay 3Ø									□	□	✓	✓	✓
37/76	DC Under/Over Voltage Relay	✓	✓						✓		✓			✓
40	Loss of Field Relay		✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
46	Reverse Phase Relay		Plus / Pro	Pro		✓	✓	✓	✓	✓	✓	✓	✓	✓
46N	Negative Sequence Overcurrent Relay		Plus / Pro	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
47	Reverse Phase Relay-Voltage		Plus / Pro	Pro		✓	✓	✓	✓	✓	✓	✓	✓	✓
49	Thermal Relay		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50	Instantaneous Overcurrent Relay		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
51	Overcurrent Relay AC		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
55	Power Factor Relay			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
59	Overvoltage Relay		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
60	Balance Relay-Voltage		Plus / Pro	Pro		✓	✓		✓	✓	✓	✓	✓	✓
64	Ground Detection Relay		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
67	Directional Overcurrent Relay		Plus / Pro	Pro	□	✓	✓	✓	✓	✓	✓	✓	✓	✓
67N	Ground Directional Overcurrent Relay		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
78	Phase Angle measuring or Out of Step Protective Relay		Plus / Pro	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
79	Reclosing Relays		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
81	Frequency Relay		Plus / Pro	Pro	✓	✓		✓	✓	✓	✓	✓	✓	✓
82	DC Reclosing Relay	✓	✓											✓
85	Carrier or Pilot Wire Relay		□	□	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
87	Differential Relay		□	□	□	✓	✓	✓	✓	✓	✓	✓	✓	✓
91	Voltage Directional Relay		Plus / Pro	□	□	✓	✓	✓	✓	✓	✓	✓	✓	✓
92	Voltage and Power Directional Relay		Plus / Pro	□	□	✓	✓	✓	✓	✓	✓	✓	✓	✓
94	Tripping Relay	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Complete, does not need other equipment nor accessories  
 □ Not all functions

## COMPARATIVE CHARACTERISTICS CHART

	PTE-100-C / Plus, Pro	PTE-50-CE / Pro	PTE-100-V	PTE-300-V	PTE-50-CET	UNO	PTE-100-V PTE-100-C	PTE-300-V PTE-50-CE	PTE-300-V PTE-100-C	PTE-50-CET PTE-100-V	TRES	MENTOR
Number of output channels	1 / 2	1 / 2	1	3	3	2	2	4	4	4	6	6 up to 12
Reversible outputs (voltage or current)	✓	1	✓	✓	✓	✓	1	✓	3	✓	✓	3 up to 6
Voltage outputs	1 / 2	2	1	3	3	2	2	4	4	4	6	6
Current outputs	1	1	1	3	3	2	2	4	4	4	6	12
Maximum voltage reached per phase	250V	150V	300V	300V	150V	300V	300V	300V	300V	300V	300V	150V
Maximum current reached per phase	250A	50A	8A	8A	50A <sup>(1)</sup>	50A	250A	50A	250A	50A <sup>(1)</sup>	50A <sup>(1)</sup>	25A
Possibility to synchronize to an external phase	-	✓	✓	✓	✓	✓	Only PTE-100-V	✓	Only PTE-300-V	✓	✓	-
Isolated outputs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manual control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Software control	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓
Output power per phase	1000 VA	100 VA	100VA	10VA	100VA	100VA	100VA	100VA	100VA	100VA	100VA	100VA
Harmonics generator	-	up to 7th	up to 7th	up to 7th	up to 7th	up to 7th	up to 7th	up to 7th	up to 7th	up to 7th	up to 7th	up to 35th
Digital chronometer	✓	✓	-	-	✓	✓	✓	-	✓	-	✓	✓
External measurement	✓	-	-	-	-	-	✓	-	✓	-	-	✓
Frequency generator	- / 40-70Hz	- / 40-70 Hz	40-420Hz	40-420Hz	-	40-420Hz	40-420Hz	40-420Hz	40-420Hz	40-420Hz	40-420Hz	0.1 a 2kHz
Fault & Transient playback	-	-	-	-	✓	-	-	-	-	✓	✓	✓
On-board dynamic faults	-	✓	✓	✓	✓	✓	Only PTE-100-V	✓	Only PTE-300-V	✓	✓	✓
On-board frequency ramp	-	-	✓	✓	-	✓	✓	✓	✓	✓	✓	✓
Auxiliary AC Voltage Output	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
Auxiliary DC Voltage Output	✓	.(2)	.(2)	.(2)	.(2)	.(2)	✓	.(2)	✓	.(2)	.(2)	✓
Number of Inputs	1	2	1	1	2	3	2	3	2	2	3	12
Phase Angle Range	- / 0-360°	0-360°	0-360°	0-360°	0-360°	0-360°	0-360°	0-360°	0-360°	0-360°	0-360°	0-360°
Phase Angle Resolution	- / 0.1°	0.1°	0.1°	0.1°	0.1°	0.1°	0.1°	0.1°	0.1°	0.1°	0.1°	0.01°

✓ Available  
<sup>(1)</sup> 150 A with 3 channels in parallel  
<sup>(2)</sup> With PTE-FCG option