

Tmax moulded-case circuit-breakers for distribution

Common data

Voltages		
Rated service voltage, Ue	[V]	690*
Rated impulse withstand voltage, Uimp	[kV]	8-12***
Rated insulation voltage, Ui	[V]	800...1000**
Test voltages at power frequency for 1 min.	[V]	3000...3500
Number of poles		3-4



Type of circuit-breaker		Tmax T1 1p	Tmax T1				Tmax T2		
Frame		160	160				160		
Rated ultimate short-circuit breaking capacity, Icu		B	B	C	N	N	S	H	L
(AC) 50-60 Hz 220/230 V	[kA]	25 ⁽¹⁾	25	40	50	65	85	100	120
(AC) 50-60 Hz 380/415 V	[kA]	–	16	25	36	36	50	70	85
(AC) 50-60 Hz 440 V	[kA]	–	10	15	22	30	45	55	75
(AC) 50-60 Hz 500 V	[kA]	–	8	10	15	25	30	36	50
(AC) 50-60 Hz 690 V	[kA]	–	3	4	6	6	7	8	10
(DC) 250 V-2 poles in series	[kA]	25 (at 125 V)	16	25	36	36	50	70	85
(DC) 250 V-3 poles in series	[kA]	–	20	30	40	40	55	85	100
(DC) 500 V-2 poles in series	[kA]	–	–	–	–	–	–	–	–
(DC) 500 V-3 poles in series	[kA]	–	16	25	36	36	50	70	85
(DC) 750 V-3 poles in series	[kA]	–	–	–	–	–	–	–	–
Rated service short-circuit breaking capacity, Ics (at 415 V)	[%Icu]	75%	100%	75%	75%	100%	100%	100%	75% ⁽³⁾
Rated short-circuit making capacity, Icm (415 V)	[kA]	52.5 (at 220/230 V)	32	52.5	75.6	75.6	105	154	187
Opening time (415 V)	[ms]	7	7	6	5	3	3	3	3
Rated short-time withstand current for 1 s, Icw	[kA]								
Category of use (IEC 60947-2, EN 60947-2)		A	A				A		
Isolation behaviour		•	•				•		
Reference Standard IEC 60947-2, EN 60947-2		•	•				•		
Release:									
thermomagnetic	T fixed, M fixed (10xIn) TMF	•	–				–		
	T adj., M fixed (10xIn) TMD	–	•				•		
	T adj., M adj. (5...10xIn) TMA	–	–				–		
	T adj., M fixed (3xIn) TMG	–	–				•		
	T adj., M adj. (2.5...5xIn) TMG	–	–				–		
magnetic only	M adjustable (6...12xIn) MA	–	–				• (MF up to In 12.5 A)		
electronic	PR221DS (I-LS/I)	–	–				•		
	PR221MP/PR221GP	–	–				•		
	PR222DS/P (LSI-LSIG)	–	–				–		
	PR222 MP	–	–				–		
	PR223DS/P	–	–				–		
	PR223EF	–	–				–		
	PR231/P (I-LS/I)	–	–				–		
	PR232/P (LSI)	–	–				–		
	PR331/P (LSIG)	–	–				–		
PR332/P (LI-LSI-LSIG-LSIRc)	–	–				–			
Interchangeability									
Versions		F	F				F-P		
Terminals	Fixed (F)		FC Cu	FC Cu-EF-FC CuAl-HR			F-FC Cu-FC CuAl-EF-ES-R		
	Plug-in (P)		–	–			F-FC Cu-FC CuAl-EF-ES-R		
	Withdrawable (W)		–	–			–		
Fixing on DIN rail		–	DIN EN 50022				DIN EN 50022		
Mechanical life	[No. operations /hourly oper.]	25000/240	25000/240				25000/240		
Electrical life (at 415 V)	[No. operations /hourly oper.]	8000/120	8000/120				8000/120		
Basic fixed dimensions	L	[mm]	25.4 (1 pole)	76/102			90/120		
	D	[mm]	70	70			70		
	H	[mm]	130	130			130		
Weights	fixed	3/4 poles	[kg]	0.4 (1 pole)	0.9/1.2		1.1/1.5		
	plug-in	3/4 poles	[kg]	–	–		1.5/1.9		
	Withdrawable	3/4 poles	[kg]	–	–		–		

* 240 V for T1 1p
 ** 500 V for T1 1p
 *** only for T8

⁽¹⁾ Settings In=16 and In=20 with Icu =16 kA @ 220/230 V
⁽²⁾ Version with Icu =35 kA certified at 36 kA
⁽³⁾ 70 kA

⁽⁴⁾ 27 kA

Tmax moulded-case circuit-breakers for specific applications

			Tmax T1	Tmax T2	Tmax T3
Current-limiting					
				T2L	
Poles			-	3-4	-
Frame			-	160	-
Ue		[V]	-	690	-
Icu @ 380/415 V		[kA]	-	85	-
Icu @ 440 V		[kA]	-	75	-
Icu @ 690 V		[kA]	-	10	-
Ics/Icu		[%]	-	75% (70 kA)	-
Dimensions	L	[mm]	-	90/120	-
	D	[mm]	-	70	-
	H	[mm]	-	130	-

Advanced zone selectivity

Poles		[No]	-	-	-
Frame			-	-	-
Ue	(AC) 50-60 Hz	[V]	-	-	-
EFDZ Zone selectivity			-	-	-
ZS Zone selectivity			-	-	-

Motor protection

				T2	T3
Poles			-	3	3
Frame			-	160	250
Ue		[V]	-	690	690
Magnetic only release	M fixed		-	• (up to In 12.5)	-
Magnetic only release	M adjustable		-	• (from In 20)	•
Electronic release	PR221MP		-	•	-
Electronic release	PR221DS-I, IEC 60947-2		-	•	-
Electronic release	PR222MP, IEC 60947-4-1		-	-	-
Electronic release	PR231/P-I, IEC 60947-2		-	-	-

Cbs for use up to 1150 V AC and 1000 V DC

Poles			-	-	-
Frame			-	-	-
Icu @ 1000 V AC		[kA]	-	-	-
Icu @ 1150 V AC		[kA]	-	-	-
Icu @ 1000 V DC	4 poles in series	[kA]	-	-	-

Disconnectors according to IEC 60947-3 Standard

			T1D	-	T3D
Poles			3-4	-	3-4
Frame			160	-	250
Ie AC23		[A]	125	-	200
Ue	(AC) 50-60 Hz	[V]	690	-	690
	(DC)		500	-	500
Uimp		[kV]	8	-	8
Ui		[V]	800	-	800
Icm		[kA]	2.8	-	5.3
Icw		[kA]	2	-	3.6

UL/CSA (UL 489 and CSA C22.2)

			T1	T2	T3
Poles			1-3-4	3-4	3-4
Frame			100	100	225
Maximum Ampere Interrupting Capacity \cong 480 V		[kA]	22	35-65	25-35
Maximum Ampere Interrupting Capacity \cong 600 V/347 V AC		[kA]	10	-	10
Maximum Ampere Interrupting Capacity \cong 600 V		[kA]	-	-	-
Thermal-magnetic trip unit			•	•	•
Magnetic only			-	•	•
Microprocessor based trip unit			-	•	-
MCCB			•	•	•
MCP			-	•	•
MCS			•	-	•

Tmax T4	Tmax T5	Tmax T6	Tmax T7	Tmax T8
T4V	T5V	T6L	T7V	
3-4	3-4	3-4	3-4	-
250/320	400/630	630/800/1000	800/1000/1250	-
690	690	690	690	-
200	200	100	150	-
180	180	80	130	-
80	80	30	60	-
100%	100%	75%	100%	-
105/140	140/184	210/280	210/280	-
103.5	103.5	103.5	154 (manual) / 178 (motorizable)	-
205	205	268	268	-

T4	T5	T6	T7	
3-4	3-4	3-4	3-4	-
250/320	400/630	630/800/1000	800/1000/1250/1600	-
690	690	690	690	-
•	•	•	-	-
-	-	-	•	-

T4	T5	T6	T7	
3	3	3	3	-
250-320	400-630	800	800/1000/1250	-
690	690	690	-	-
-	-	-	-	-
•	-	-	-	-
-	-	-	-	-
•	•	•	-	-
•	•	•	-	-
-	-	-	•	-

T4	T5	T6		
3-4	3-4	3-4	-	-
250	400-630	630-800	-	-
20	20	12	-	-
12	12	-	-	-
40	40	40	-	-

T4D	T5D	T6D	T7D	T8
3-4	3-4	3-4	3-4	3-4
320	400/630	630-800-1000	1000/1250/1600	2000/2500/3200
320	400/630	630-800-1000	1000/1250/1600	2000/2500/3200
690	690	690	690	690
750	750	750	750	-
8	8	8	8	12
800	800	1000	1000	1000
5.3	11	30	52.5	-
3.6	6	15	20	40

T4	T5	T6	T7	T8
3-4	3-4	3-4	3-4	3-4
250	400-600	800	1000-1200	1600-2000-2500-3000
25-150	25-150	35-100	50-100	125
-	-	-	-	-
18-100	18-100	20-42	25-65	100
•	•	•	-	-
-	-	-	-	-
•	•	•	•	•
•	•	•	•	•
•	•	•	-	-
•	•	•	•	•

Main release characteristics






Combination of release - circuit-breaker

		T1	T2	T3	T4	T5	T6	T7	T8
Thermomagnetic	In	160	160	250	250/320	400/630	630/800/1000	800/1600	2000/2500/3200
	Version	F	F-P	F-P	F-P-W	F-P-W	F-W	F-W	F
	MF	-	-	-	-	-	-	-	-
	MA	-	•	•	•	-	-	-	-
	TMF	•*	-	-	-	-	-	-	-
	TMD	•	•	•	•	-	-	-	-
	TMG	-	•	•	-	•	-	-	-
TMA	-	-	-	•	•	•	-	-	
Electronic	PR221DS	-	•	-	•	•	•	-	-
	PR221GP	-	•	-	-	-	-	-	-
	PR221MP	-	•	-	-	-	-	-	-
	PR222/P- /PD	-	-	-	•	•	•	-	-
	PR222 MP	-	-	-	•	•	•	-	-
	PR223DS	-	-	-	•	•	•	-	-
	PR223EF	-	-	-	•	•	•	-	-
	PR231/P	-	-	-	-	-	-	•	-
	PR232/P	-	-	-	-	-	-	•	•**
	PR331/P	-	-	-	-	-	-	•	•
PR332/P	-	-	-	-	-	-	•	•	

* only available for T1 1p

** dedicated version only for T8

Electronic releases

	PR221DS	PR221GP	PR221MP	PR222DS/P-DS/PD	PR222MP
					
Protections available	LSI-I	LSI	LI	LSI-LSIG	LIRU
Compatible circuit-breakers	T2-T4-T5-T6	T2	T2	T4-T5-T6	T4-T5-T6
Applications	Distribution/Motor protection	Generator protection	Motor protection	Distribution	Motor protection







Basic protections

	PR221DS	PR221GP	PR221MP	PR222DS/P-DS/PD	PR222MP
L	(DS) I1=0.4-1 In (DS) t1=3-12 s (t1=3-6 s T2) t=k/I2	(DS) I1=0.4-1 In (DS) t1=0.7-5.5 s t=k/I2	(DS) I1=0.65-1 In (DS) t1=2.77-11.1 s t=k/I2	(DS) (E) I1=0.4-1 In (DS) (E) t1=3-18 s t=k/I2	(DS) (E) I1=0.4-1 In (DS) (E) t1=3-18 s t=k/I2
S	(DS) I2=1-10 In (DS) t2=0.1-0.25 s t=k/I2	(DS) I2=1-2.5 In (DS) t2=0.07-0.75 s t=k/I2 or t=k	-	(DS) (E) I2=0.6-10 In (DS) (E) t2=0.05-0.5 s t=k/I2 or t=k	-
I	(DS) I3=1-10 In t3=instantaneous	(DS) I3=4 I2-Fixed t3=instantaneous t=k	(DS) I3=2.5-17.5 In t3=instantaneous t=k	(DS) (E) I3=1.5-12 In t3=instantaneous t=k	(DS) (E) I3=6-13 In t3=instantaneous t=k
G	-	-	-	(DS) (E) I4=0.2-1 In (DS) (E) t4=0.1-0.8 s t=k/I2	-
Rc	RC221 (T2)-RC222 (T2-T4-T5) RC223 (T4)-RCQ SACE (T6)	RC221-RC222	RC221-RC222	RC222 (T4-T5)-RC223 (T4) RCQ SACE (T6)	RC222 (T4-T5)-RC223 (T4) RCQ SACE (T6)
OT	-	-	-	-	-
U	-	-	-	-	(DS) (E) I6=0.4 I1 (DS) (E) t6=1-10 s



Advanced protections

UV	-	-	-	-	-
OV	-	-	-	-	-
RV	-	-	-	-	-
RP	-	-	-	-	-
UF	-	-	-	-	-
OF	-	-	-	-	-
S2	-	-	-	-	(DS) (E) I5=3-10 I1 (DS) (E) t5=1-10 s
Communication	-	-	-	Dialogue unit integrated with protocol Modbus-PR021/K remote signalling only on DS/PD	PR021/K remote signalling
Measurements	-	-	-	Basic-with PR010T or BT030 for DS/P standard for DS/PD	Basic-with PR010T
NOTES	-	-	Motor protection with powers up to 55kW	Setting (E) with PR010T or with BT030-Interface front of panel HMI030 on PD version	Setting (E) with PR010T

Thermomagnetic releases



	MF	MA	TMF	TMD	TMG	TMA
						
Compatible circuit-breakers:	T2	T2-T3-T4	T1_1p	T1-T2-T3-T4	T2-T3-T5	T4-T5-T6
Applications	Motor protection		Distribution	Distribution	Generator protection	Distribution
Basic protections						
L	-		I1=In	(M) I1=0.7-1 In	(M) I1=0.7-1 In	(M) I1=0.7-1 In
I	(M) I3=13 In (M) I3=(6-12 In T2 T3) (6-14 In T4)		I3=10 In	(M) I3=10 In	(M) I3=3 In (I3=2.5-5 In T5)	(M) I3=5-10 In
Rc	RC221 (T2-T3) RC222/RC223 (T4)		RC221	RC221 (T1-T2-T3)-RC222 (T1-T2-T3-T4)-RC223 (T3-T4)	RC221 (T2-T3)-RC222 (T2-T3-T5)-RC223 (T3)	RC222 (T4-T5)-RC223 (T4) RCQ (T6)

KEY



L-Protection against overload S-Selective protection against short-circuit I- Instantaneous protection against short-circuit G-Protection against earth faults Rc-Protection against residual current OT-Protection against overtemperature U-Protection against phase unbalance UV-Undervoltage protection	OV-Overvoltage protection RV-Protection against residual voltage RP-Protection against reverse active power UF-Protection against under frequency OF-Protection against over frequency S2-Selective protection against short-circuit D-Protection against directional short-circuit R-Protection against rotor blocking	PR021K-Signalling unit (M)-Manual setting (DS)-Setting with Dip Switch (E)-Electronic setting with external apparatus (BT030 or PR010T) or remotely with communication (ME)-Manual electronic setting on front of panel RC_ _-External residual current release for moulded-case circuit-breakers RCQ SACE-Panel residual current with toroid and opening coil	Advanced Measurements Currents (phase, Neutral, Earth) Phase voltages (phase-phase, phase-neutral, residual) Power (Active, Reactive, Apparent) Power factor Frequency and Peak Factor Energy (Active, Reactive, Apparent)
t=k relation t=f(I)		PR010T-Test and Configuration Unit PR_ _-D-M-Communication module mod-bus PR_ _-V Measurement module BT030-Wireless communication unit	Version F- Fixed P- Plug-in W- Withdrawable
t=k/I2 relation t=f(I)			

PR223DS	PR223EF	PR231/P	PR232/P	PR331/P	PR332/P
					
LSIG	LSIG	LS/I-I	LSI-LSIG	LI-LSI-LSIG	LSIG
T4-T5-T6	T4-T5-T6	T7	T7	T7-X1-T8	T7-X1-T8
Distribution	Zone selectivity	Distribution	Distribution	Distribution	Distribution
(E) I1=0.4-1 In (E) t1=3-18 s t=k/I2	(E) I1=0.18-1 In (E) t1=3-18 s	(DS) I1=0.4-1 In (DS) t1=3-12 s t=k/I2	(DS) (E) I1=0.4-1 In (DS) (E) t1=3-18 s t=k/I2	(DS) (E) I1=0.4-1 In (DS) (E) t1=3-144 s t=k/I2	(ME) (E) I1=0.4-1 In (ME) (E) t1=3-144 s t=k/I2
(E) I2=0.6-10 In (E) t2=0.05-0.5 s t=k/I2 or t=k	(E) I2=0.6-10 In (E) t2=0.05-0.5 s t=k/I2 or t=k	(DS) I2=1-10 In (DS) t2=0.1-0.25 s t=k/I2	(DS) (E) I2=0.6-10 In (DS) (E) t2=0.1-0.8 s t=k/I2 or t=k	(DS) (E) I2=0.6-10 In (DS) (E) t2=0.1-0.8 s t=k/I2 or t=k	(ME) (E) I2=0.6-10 In (ME) (E) t2=0.05-0.8 s t=k/I2 or t=k
(E) I3=1.5-12 In t3=instantaneous t=k	(E) I3=1.5-12 In t3=instantaneous t=k	(DS) I3=1-10 In t3=instantaneous t=k	(DS) (E) I3=1.5-12 In t3=instantaneous t=k	(DS) (E) I3=1.5-15 In t3=instantaneous t=k	(ME) (E) I3=1.5-15 In t3=instantaneous t=k
(E) I4=0.2-1 In	(E) I4=0.2-1 In	-	-	(DS) (E) I4=0.2-1 In (DS) (E) t1=0.1-0.8 s t=k/I2 or t=k	(ME) (E) I4=0.2-1 In (ME) (E) t4=0.1-0.8 s t=k/I2 or t=k
(E) t4=0.1-0.8 s t=k/I2	(E) t4=0.1-0.8 s t=k/I2	-	-	-	(ME) (E) I4=0.2-1 In (ME) (E) t4=0.1-0.8 s t=k/I2 or t=k
RC222 (T4-T5)-RC223 (T4) RCQ SACE (T6)	RC222 (T4-T5)-RC223 (T4) RCQ SACE (T6)	RCQ SACE	RCQ SACE	RCQ SACE	(ME) (E) IA=3-30 A (ME) (E) tA=0.06-0.8 s t=k T=85° C t=instantaneous t=k
-	-	-	-	-	(ME) (E) I6=0.02-0.9 I1 (ME) (E) t6=0.5-60 s t=k
-	-	-	-	-	(ME) (E) U8=0.5-0.95 Un (ME) (E) t8=0.1-5 s t=k (ME) (E) U9=1.05-1.2 Un (ME) (E) t9=0.1-5 s t=k (ME) (E) U10=0.1-0.4 Un (ME) (E) t10=0.5-30 s t=k (ME) (E) P11=-0.3/-0.1 Pn (ME) (E) t11=0.5-25 s t=k (ME) (E) f12=0.90-0.99 fn (ME) (E) t12=0.5-3 s t=k (ME) (E) f13=1.01-1.10 fn (ME) (E) t13=0.5-3 s t=k
-	-	-	-	-	-
Dialogue unit available with Modbus protocol -PR021/K remote signalling	Dialogue unit available with Modbus protocol - PR021/K remote signalling	-	-	PR021/K remote signalling	With PR330/D-M -protocol Modbus- BT030 communication wireless -PR021/K remote signalling
advanced with VM210	advanced with VM210	-	Basic-with PR010T or BT030	Basic-BT030	Basic included as standard-advanced with PR330/V
Setting (E) with PR010T or with BT030-HMI030 Interface front of panel	Setting (E) with PR010T or with BT030-Protection EF ultra-rapid trip- HMI030 Interface front of panel	-	Setting (E) with PR010T or with BT030	Setting (E) with PR010T or with BT030-Interface front of panel HMI030	Adv. Prot. PR330V-Setting (E) with PR010T or with BT030-Interface front of panel HMI030

Main release characteristics

Residual current releases		RC221	RC222		RC223
Sizes		T1-T2-T3	T1-T2-T3	T4 and T5	T3 and T4
	Version	3/4 Poles F	3/4 Poles-F, P, W-	4 Poles-F, P, W -	T3 4 Poles F, T4 250 4 Poles-F,P,W -
	Type	shape "L"	shape "L"	Underneath	Underneath
	Technology	With microprocessor	With microprocessor	With microprocessor	With microprocessor
	Action	Solenoid	Solenoid	Solenoid	Solenoid
	Primary operating voltage [V]	85...500	85...500	85...500	110...500
	Frequency of operation [Hz]	45...66	45...66	45...66	45...66
	Self-supply	•	•	•	•
	Field of test operation [V]	85...500	85...500	85...500	110...500
	Rated service current [A]	up to 250 A	up to 250 A	up to 500 A	up to 500 A
	Adjustable trip thresholds [A]	0.03-0.1-0.3-0.5-1-3	0.03- 0.05-0.1-0.3-0.5-1-3-5 -10	0.03- 0.05-0.1-0.3-0.5-1-3-5 -10	0.003-0.05-0.1-0.3-0.5-1
	Adjustable trip times [s]	instantaneous	instantaneous 0.1- 0.2- 0.3- 0.5- -2- 3	instantaneous 0.1- 0.2- 0.3- 0.5- -2- 3	instantaneous 0.1- 0.2- 0.3- 0.5- -2- 3
	Tolerance over trip times		± 20%	± 20%	± 20%
	Absorbed power	< 8 W at 400 V AC	< 10 W at 400 V AC	< 10 W at 400 V AC	< 10 W at 400 V AC
	Local trip indication	•	•	•	•
	OS with changeover contact for trip signalling	•	•	•	•
	Input for remote opening	-	•	•	•
	NO contact for signalling pre-alarm	-	•	•	•
	NO contact for signalling alarm	-	•	•	•
	Indication of pre-alarm from 25% I _{Δn} (tolerance ± 3%)	-	•	•	•
	Indication of alarm timing at 75% I _{Δn} (tolerance ± 3%)	-	•	•	•
	Type A for pulsating alternating current, AC direct current	•	•	•	•
	Type AE with remote release	-	•	•	•
	Type B for pulsating current and direct current	-	-	-	•
	Type S selective	-	•	•	•
	Button for insulation test	•	•	•	•
	Power supply from the top and bottom	•	•	•	•
	Assembly with three-pole circuit-breakers	•	•	-	-
	Assembly with four-pole circuit-breakers	•	•	•	•
	Conversion Kit of cb with residual current from fixed to plug-in	-	•	•	•

RCQ SACE

	Characteristics	All 3/4 poles
	Power supply voltage AC [V]/DC [V]	80...500/48...125
	Frequency of operation [Hz]	45...66
	Inrush power consumption	100 [VA]/100 [W]
	Service power consumption	6 [VA]/6 [W]
	Adjustment of trip threshold	
	1st range of Adjustments [A]	0.03-0.05-0.1-0.3-0.5
	2nd range of Adjustments [A]	1- 3-5-10-30
	Adjustment of trip times I _{Δn} [s]	instantaneous-0.1-0.2-0.3-0.5-0.7-1-2-3-5
	Adjustment of pre-alarm threshold [%] x I _{Δn}	25...75% x I _{Δn}
	Range of use of closed transformers	
	Toroidal transformer Ø 60 [mm] [A]	0.03...30
	Toroidal transformer Ø 110 [mm] [A]	0.03...30
	Toroidal transformer Ø 185 [mm] [A]	0.1...30
	Range of use of openable transformers	
	Toroidal transformer Ø 60 [mm] [A]	0.03...30
	Toroidal transformer Ø 110 [mm] [A]	0.03...30
	Toroidal transformer Ø 185 [mm] [A]	0.1...30
	Pre-threshold pre-alarm indication	Yellow flashing LED, 1 changeover contact N.O. 6A-250 V AC 50/60 Hz
	Signalling of residual relay trip	Magnetic indication and two changeover contacts (N.O. N.C. ; N.O.), 6A-250 V AC 50/60 Hz
	Remote opening control	N.O. contact Trip time 15 ms
	Connection to the toroidal transformer	By means of 4 twisted conductors. Maximum length: 5 m
	Dimensions L x H x D [mm]	96 x 96 x 131,5
	Drilling for assembly on door [mm]	92 x 92
	Degree of protection on the front	IP41
	Degree of protection on the rear	IP30

Communication/Signalling/Measurement

PR330/D-M



PR330/D-M

The PR330/D-M communication module is the solution for connecting the ABB moulded-case circuit-breakers to a Modbus network, for supervision and remote control of the circuit-breaker

SACE PR021/K



PR021/K

The SACE PR021/K is able to convert the digital signals provided by the PR222DS/PD, PR223DS, PR223EF, PR331, PR332, PR333 protection units into electric signals by means of normally open electrical contacts, and allow remote signalling of alarms and release trips.

VM210



The VM210 accessory, combined with the protection devices, provides different measurements of the electrical values of the plant. It is able to provide measurements relative to a maximum of 5 electronic releases. The connection distance between the module and the release is a maximum of 15 metres; for distances greater than 1 metre, it is necessary to use a shielded multi-pole connection cable.

HMI030



Can be used with all the protection releases fitted with dialogue, is designed to be installed on the front of the panel. It consists of a graphic display where all the measurements and alarms/events of the release are displayed. Thanks to its high precision, the device can replace traditional multi-meters without the need of current/voltage transformers. The HMI030 is connected directly to the protection release by means of a serial line and requires a 24 V DC power supply.

PR330/V



PR330/V

The internal PR330/V module can be added to the trip unit and allow the phase and neutral voltages to be measured and processed, transferring these data to the protection release itself, so that a series of protection functions and measurements can be implemented.

BT030



BT030

The BT030 is an device to be connected to the Test connector of PR222DS, PR223DS, PR223EF, PR232/P, PR331/Pand PR332/P. It allows Bluetooth communication between the protection release and a hand-held PC or a laptop with a Bluetooth port. T

PR010/T



The unit SACE PR010/T is an instrument able to carry out the Test, programming and parameter reading functions for the protection units which equip the circuit-breakers. For T4, T5, T6 and T7, the test, programming and parameter reading functions are available. It is possible to store the results of primary interest regarding the tests inside the unit itself and to send them to the PC. In both automatic and manual mode, the SACE PR010/T unit is able to test: – protection functions L, S, I, G – protection functions L, R, I, U (for PR222MP) – monitoring of correct operation of the microprocessor.