ELECTRIC PROTECTION AND CONTROL

Earth leakage protection

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OUTSTANDING PRODUCTS

	RG1M	RGU-2	RGU-10B	RGMD	REC3/REC3C	RECmax LPD
						
	Earth leakage relays 1 module	Earth leakage relays 2 modules	Type-B earth leakage current monitoring relay	Earth leakage protection assembly with built-in circuit breaker protection	RCCB with self-reclosing system and output contact	Full earth leakage and circuit breaker reclosing and protection unit
Page	101	101	103	103	107	110

Delivery time: [*] immediate
[x] working weeks
[c] consult

Earth leakage protection

Table: Selection of earth leakage relays

	RG1M	WRN-22	RGE-R	WGBU	RGU-2	RGU-10	CBS-4	WRU-10	RGU-10B	IDB4	WGB-35-TB
											
Client requirements											
Continuity of service Prevents unwanted tripping	•	•	•	•	•	•	•	•	•	•	•
Control,telemanagement	–	–	–	–	•	•	•	•	•	–	–
Monitoring (display/PC)	–	–	–	–	•	•	•	•	•	–	–
Preventive maintenance, prealarm	–	–	•	•	•	•	•	•	•	–	–
Installation											
Use in single-phase installations	•	•	•	•	•	•	•	•	•	•	•
Three-phase, with and without neutral	•	•	•	•	•	•	•	•	•	•	•
WGC External earth leakage transformers	•	–	•	–	•	•	•	–	WGC-TB	–	-
Useful section diameter ø (mm)	DET	22	DET	35...210	DET	DET	DET	28	DET	–	35
Size in modules	1	3	2	–	2	3	3	3	3	4	–
Model features											
Earth leakage protection type (IEC 60755)	A	A	A	A	A	A	A	A	B	B	B
Use as instantaneous protection	•	•	•	•	•	•	•	•	–	•	•
Use as selective protection / monitoring	–	–	•	•	•	•	•	•	•	–	•
Fixed sensitivity and trip delay	•	•	–	–	–	–	–	–	–	•	•
Adjustable sensitivity and trip delay	–	–	•	•	•	•	•	•	•	–	–
RS-485Communications modbus protocol	–	–	–	–	–	•	•	–	–	–	–
External input, remote control	–	–	–	–	•	•	•	•	•	–	–
Page	101	102	101	102	101	101	102	102	103	103	103

DET - Depending on the external transformer

Delivery time: [*] immediate
[x] working weeks
[c] consult

WGC, Earth leakage transformers,



Type	Code	Useful diameter (mm)	$I_{\Delta n}$ (A)	Weight(g)
WGC-20	**[*] P10131**	20 ø	acc. relay	75
WGC-30	**[*] P10132**	30 ø	acc. relay	95
WGC-25	**[*] P10151**	25 ø	acc. relay	80
WGC-35	**[*] P10152**	35 ø	acc. relay	120
WGC-55	**[*] P10153**	55 ø	acc. relay	160
WGC-80	**[*] P10154**	80 ø	acc. relay	300
WGC-110	**[*] P10155**	110 ø	acc. relay	420
WGC-140	**[*] P10156**	140 ø	acc. relay	760
WGC-180	**[*] P10157**	180 ø	acc. relay	1480
WGC-220x105	**[c] P10158**	220 x 105	acc. relay	3740
WGC-350x150	**[c] P10159**	350 x 150	acc. relay	7800
WGC-500x200	**[c] P10160**	500 x 200	acc. relay	11300
PA-TC/WG	**[*] P19921**	DIN rail mounting accessory for WGC-25, WGC-35 and WGC-55		

UL certification for all models

TP-WGC, Split-core earth leakage transformers/core balanced



Type	Code	Useful diameter útil (mm)	$I_{\Delta n}$ (A) >0,3 A	Weight (g)
TP-WGC-58	**[c] P11121**	80 x 50	s / relé (*)	1
TP-WGC-88	**[c] P11131**	80 x 80	s / relé (*)	1,3
TP-WGC-812	**[c] P11141**	120 x 80	s / relé (*)	1,6
TP-WGC-816	**[c] P11151**	160 x 80	s / relé (*)	4,1

(*) Only for RGU-2, RGU-10/10C, CBS-4/4C

RGU-10 / RGU2 / RGE / RG1M, Earth leakage relays for WGC transformers, Type A ultra-immunised



On Request

RGU-10 series, Programmable earth leakage relay, 3 modules with display and programmable prealarm output. Auxiliary power supply 230 V_{ac} (*1)

Type	Code	Size	Communications	$I_{\Delta n}$ (A)	Delay
RGU-10	**[*] P11941**	3 modules	-	0,03 … 3 A 0,03 …30 A	0,02...10 s, INS, SEL (*2)
RGU-10C	**[*] P11944**	3 modules	RS-485	0,03 … 3 A 0,03 …30 A	0,02...10 s, INS, SEL (*2)
	[*] M5ZZF1		Panel adapter for RGU-10 and CBS-4 (72 x 72 mm)		

Possibility UL on demand



Serie RGU2, programmable earth leakage relay, 2 modules with display and static prealarm output. 230 V_{ac} Auxiliary power

Type	Code	Size	Mounting	$I_{\Delta n}$ (A)	Delay
RGU2	**[*] P11A61**	2 modules	DIN rail	0,03...5	0,1...5 s, INS, SEL (*2)



RGE series, configurable earth leakage relay, 2 modules with visual prealarm. 230 V_{ac} Auxiliary power supply

Type	Code	Size	Mounting	$I_{\Delta n}$ (A)	Delay
RGE-R1	**[*] P12231**	2 modules	DIN rail	0,03...3	0,02...1 s
RGE-R	**[*] P12232**	2 modules	DIN rail	0,03...5	0,02...5 s



RG1M serie, earth leakage relays 1 module. Auxiliary power supply 230 V_{ac}

Type	Code	Size	Mounting	$I_{\Delta n}$ (A)	Delay
RG1M-0,03	**[*] P12204**	1 modules	DIN rail	0,03	0,02 s
RG1M-0,3	**[*] P12214**	1 modules	DIN rail	0,3	0,02 s

(*1) The delay is cancelled in all relays with 0.03 A sensitivity adjustment, IEC 60947-2, Annex M
(*2) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a trip time <0.02 s
Requires an earth leakage transformer, WGC type
See the table at the end of the section to encode other parameters, such as the auxiliary power supply voltages

CBS-4, Earth leakage relay centre, Type A ultra-immunised



On Request

CBS series, Station with 4 programmable earth leakage relays, 4 modules with display and a configurable prealarm output. 230 Vac Auxiliary power supply

Type	Code	Size	Communications	Nr. Relays	$I_{\Delta n}$ (A)	Delay
CBS-4	[*] P12711	3 modules	–	4	0,03...30	0,02...10 s, INS, SEL (*2)
CBS-4C	[*] P12712	3 modules	RS-485	4	0,03...30	0,02...10 s, INS, SEL (*2)
	[*] M5ZZF1					

Only for CBS-4 230 V_{ac}, possibility of receiving the UL certification. Earth leakage transformer, WGC type

WRU , Type A ultra-immunised earth leakage relay with built-in transformer



WRU-10 series, with display, DIN rail, auxiliary power supply 230 V_{ac} (*1)

Type	Code	Size	Useful diameter (mm)	$I_{\Delta n}$ (A)	Delay
WRU-10	[*] P14035	3 modules	28	0,03 … 3 A 0,03 …30 A	0,02...10 s, INS, SEL (*2)

(*1) The delay is cancelled in all relays with 0.03 A sensitivity adjustment, IEC 60947-2, Annex M
(*2) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a trip time <0.02 s
See the table at the end of the section to encode other parameters, such as the auxiliary power supply voltages

WRN-22 , Earth leakage relay with built-in transformer, Type A



Type	Code	Useful diameter (mm)	$I_{\Delta n}$ (A)	Delay
WRN-22-0,03	[*] P14211	22	0,03	0,02 s
WRN-22-0,3	[*] P14212	22	0,3	0,02 s
WRN-22-0,01	[*] P14214	22	0,01	0,02 s

WGBU Transformer with built-in earth leakage relay, Type A



WGBU series. Configurable earth leakage relay with visual prealarm. 230 V_{ac} Auxiliary power supply

Type	Code	Weight(g)	Useful diameter ∅ (mm)	$I_{\Delta n}$ (A)	Delay (s)
WGBU-35	[*] P16011	380	35	0,03...3	0,02...1 s (*)
WGBU-70	[*] P16012	474	70	0,03...3	0,02...1 s (*)
WGBU-105	[*] P16013	744	105	0,03...3	0,02...1 s (*)
WGBU-140	[*] P16014	1 422	140	0,03...3	0,02...1 s (*)
WGBU-210	[*] P16015	2 240	210	0,03...3	0,02...1 s (*)



WGBU-90 series, Relay mounted at 90º. It allows to reduce the mounting space

WGBU-90-35	[*] P16021	380	35	0,03...3	0,02...1 s (*)
WGBU-90-70	[*] P16022	474	70	0,03...3	0,02...1 s (*)
WGBU-90-105	[*] P16023	744	105	0,03...3	0,02...1 s (*)
WGBU-90-140	[*] P16024	1 422	140	0,03...3	0,02...1 s (*)
WGBU-90-210	[*] P16025	2 240	210	0,03...3	0,02...1 s (*)

The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2 annex M

CODIFICATION TABLE

RGU-10, RGE, CBS-4, WRU-10

Code	Internal code											
P	1	X	X	X	X	0	0	X		X	X	
								↑		↑	↑	Delivery time
Power supply voltage												
								Standard (230 V_{ac})	0			-
								110 V_{ac}	1			1
								400 V_{ac} (Only RGE, RGU-10)	3			1
								24...48 V_{ac} 24...125 V_{dc} (Only RGE, RGU-10)	4			1
								Certificate UL (Only RGU10/10C)		0	7	2
								Certificate CCC (Only RGU10)		0	8	2

Delivery time: [*] immediate
[x] working weeks
[c] consult

RGMD, ultra-immunised earth leakage protection assembly with miniature circuit breaker





RGMD SERIES, TYPE A - 2 POLES				
Type	**Code**	**Poles**	**I_n (A)**	**Sensitivity**
RGMD-2-16-30	**[1] P13231**	2	16	30 mA
RGMD-2-25-30	**[1] P13251**	2	25	30 mA
RGMD-2-32-30	**[1] P13261**	2	32	30 mA
RGMD-2-40-30	**[1] P13271**	2	40	30 mA
RGMD-2-63-30	**[1] P13291**	2	63	30 mA
RGMD-2-16-300	**[1] P13233**	2	16	300 mA
RGMD-2-25-300	**[1] P13253**	2	25	300 mA
RGMD-2-32-300	**[1] P13263**	2	32	300 mA
RGMD-2-40-300	**[1] P13273**	2	40	300 mA
RGMD-2-63-300	**[1] P13293**	2	63	300 mA
RGMD SERIES, TYPE A - 4 POLES				
RGMD-4-16-30	**[1] P13431**	4	16	30 mA
RGMD-4-25-30	**[1] P13451**	4	25	30 mA
RGMD-4-32-30	**[1] P13461**	4	32	30 mA
RGMD-4-40-30	**[1] P13471**	4	40	30 mA
RGMD-4-63-30	**[1] P13491**	4	63	30 mA
RGMD-4-16-300	**[1] P13433**	4	16	300 mA
RGMD-4-25-300	**[1] P13453**	4	25	300 mA
RGMD-4-32-300	**[1] P13463**	4	32	300 mA
RGMD-4-40-300	**[1] P13473**	4	40	300 mA
RGMD-4-63-300	**[1] P13493**	4	63	300 mA

It includes an RG1M earth leakage relay, a WGS/WGC earth leakage transformer and a C curve, 6 kA (EN 60898) circuit breaker with a 230 V_{ac} trigger coil

AC type transformers and earth leakage relays

WGC-TB, Earth leakage transformers for type-B earth leakage relays



Type	Code	Useful diameter (mm)	$I_{\Delta n}$ (A)	Weight(g)
WGS-20-TB	**[*] P11731**	20 ø	0,1	80
WGC-25-TB	**[*] P11751**	25 ø	0,1	86
WGC-35-TB	**[*] P11752**	35 ø	0,1	126
WGC-55-TB	**[*] P11753**	55 ø	0,3	180
WGC-80-TB	**[*] P11755**	80 ø	0,5	321
WGC-110-TB	**[*] P11756**	110 ø	0,5	440
WGC-140-TB	**[*] P11757**	140 ø	0,5	790
WGC-180-TB	**[*] P11758**	180 ø	0,5	1530

RGU10-B, Type-B Earth leakage current monitoring relay



RGU-10B, programmable earth leakage relay, 3 modules with display and configurable prealarm output. 230 V_{ac} Auxiliary power supply

Type	Code	Size	Attachment	$I_{\Delta n}$ (A)	Delay
RGU-10B	**[*] P11951**	3 modules	DIN rail	0,1 … 3	0,02...10 s

Requires an earth leakage transformer, WGC-TB type

IDB-4, RCCB Type B



Type	Code	Sensitivity $I_{\Delta n}$	I_n	Poles
IDB-4 4P-40A-30mA	**[*] P17221**	30 mA	40 A	4
IDB-4 4P-40A-300mA	**[*] P17222**	300 mA	40 A	4
IDB-4 4P-63A-30mA	**[*] P17231**	30 mA	63 A	4
IDB-4 4P-63A-300mA	**[*] P17232**	300 mA	63 A	4

WGB-35-TB , Relay Type B built-in earth leakage current transformer

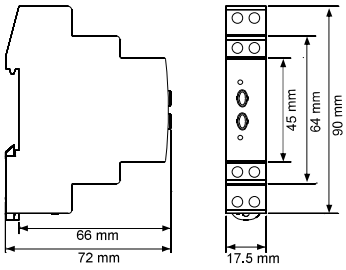


Type	Code	Sensitivity $I_{\Delta n}$	Delay
WGB-35-TB 30	**[*] P16111**	0,03 A	INS
WGB-35-TB 300	**[*] P16121**	0,3 A	INS
WGB-35-TB 300S	**[*] P16131**	0,3 A	SEL

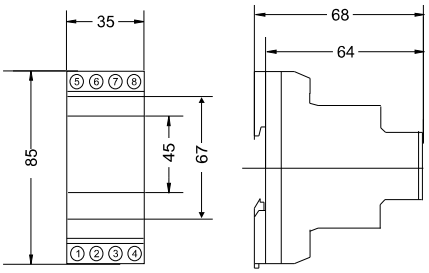
Delivery time: [*] immediate
[x] working weeks
[c] consult

Dimensions

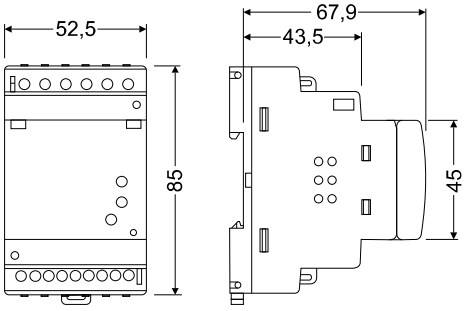
RG1M



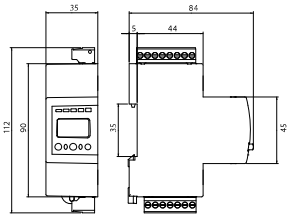
RGE



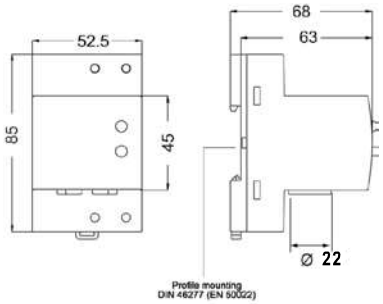
RGU-10 / CBS-4



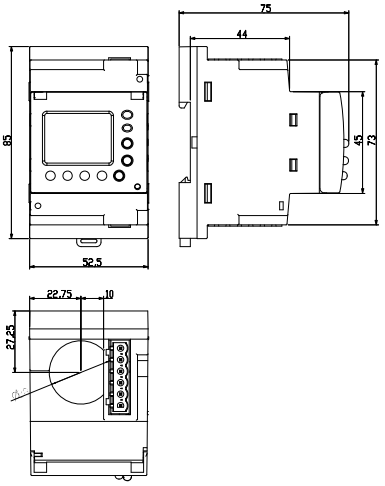
RGU2



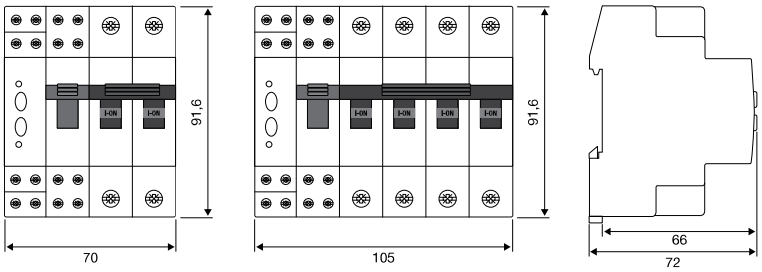
WRN-22



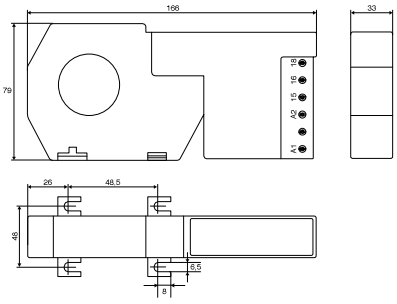
WRU-10



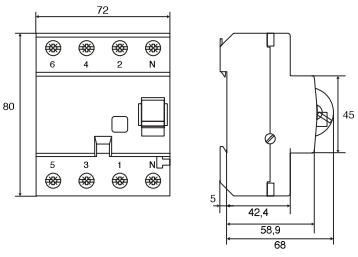
RGMD 2P / RGMD 4P



WGB-35-TB



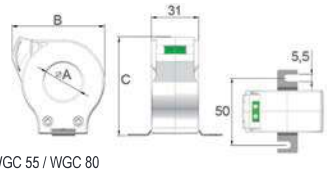
IDB-4



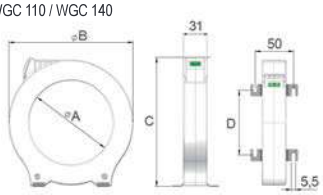
Delivery time: [*] immediate
[x] working weeks
[c] consult

WGC / WGC-TB

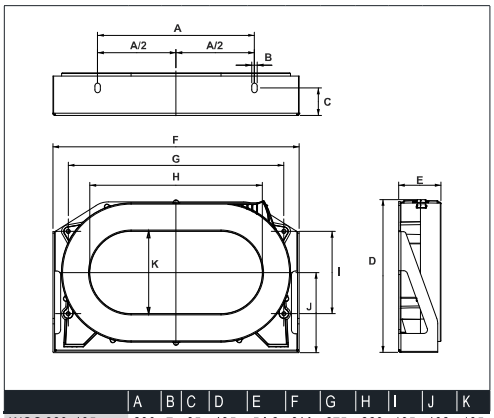
WGC 25 / WGC 35



WGC 55 / WGC 80
WGC 110 / WGC 140

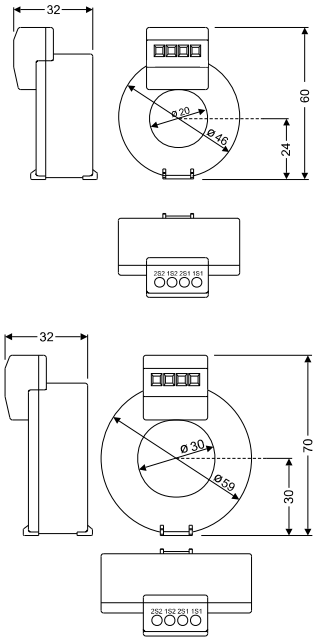


	A	B	C	D
WGC 25	25	60,5	64	
WGC 35	35	70,5	75,5	
WGC 55	55	92	98	38
WGC 80	80	124,5	130	60
WGC 110	110	163	168	84,5
WGC 140	140	201	206	110
WGC 180	180	252	256	144

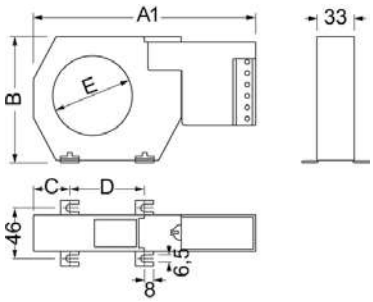


	A	B	C	D	E	F	G	H	I	J	K
WGC 220x105	200	7	35	195	54,2	314	275	220	105	102	105
WGC 350x150	340	7	30	279	50,2	479	430	350	165	143	150
WGC 500x200	460	7	40	306	64	614	550	500	180	155	200

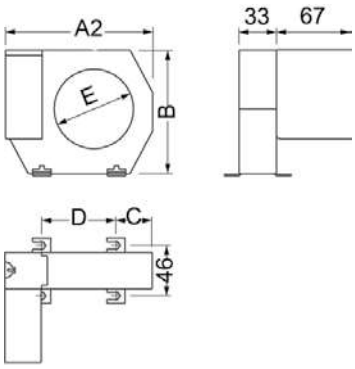
WGS



WGBU

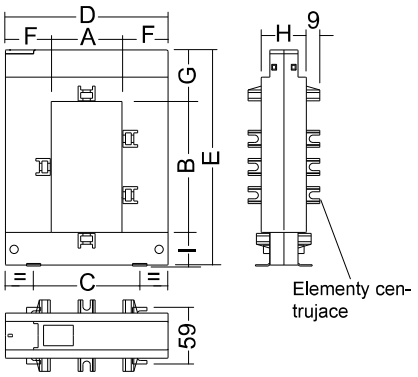


WGBU-90



	A1	A2	B	C	D	E
WGBU-35 (A1) / WGBU-90-35 (A2)	166	100	79	26	48,5	35
WGBU-70 (A1) / WGBU-90-70 (A2)	196	130	110	332	66	70
WGBU-105 (A1) / WGBU-90-105 (A2)	236	170	146	38	94	105
WGBU-140 (A1) / WGBU-90-140 (A2)	286	220	196	48,5	123	140
WGBU-210 (A1) / WGBU-90-210 (A2)	365	299	284	69	161	210

TP-WGC



Wymiary (mm)	TP-23	TP-58	TP-88	TP-812	TP-816
a	20	50	80	80	80
b	30	80	80	120	160
c	51	78	108	108	120
d	89	114	144	144	184
e	110	145	145	185	245
f	34	32	32	32	52
g	47	32	32	32	47
h	40	32	32	32	52
i	32	32	32	32	38

Uwaga: wszystkie typy posiadają elementy centrujące z wyjątkiem TP-23

Self-reclosing overcurrent and earth leakage protection

Table: Selection of self-reclosing earth leakage and circuit breaker protection units

Protection	Reclosing	Solutions	Units		Page
Earth leakage	Earth leakage	Self-reclosing RCCB	REC2 / REC3C		107
		Programmable earth leakage relay + external transformer + contactor	RGU-10 RAL	+ WGC	107
			CBS-4 RA	+ WGC	107
		Programmable earth leakage relay with built-in transformer + contactor	WRU RAL		108
Earth leakage and circuit breaker	Earth leakage	Earth leakage relay with built-in transformer + Motorized circuit breaker	WRU-10k	+ MCB.P	108
	Earth leakage and circuit breaker	Programmable earth leakage relay with circuit breaker + external transformer	RECmax-LDP	+ WGC 25/30/35	109
		Programmable earth leakage relay + external transformer + motorized circuit breaker	RGU-10 MT	+ WGC + RECmac MP + MT-FDE (I_n>63 A)	109
		Earth leakage relay with built-in transformer + motorized circuit breaker	WRU-10 MT	+ RECmax MP	110
		Compact unit, ready to be installed	WRGU-10 MTT		111
Circuit breaker	Circuit breaker	Self-reclosing circuit breaker	**RECmax P**		111
		Programmable reclosing relay + motorized switch	**RRM**	+ MT/RECmax MP (consult)	112

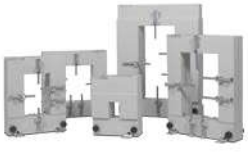
WGC, Earth leakage transformers,



Type	Code	Useful diameter (mm)	$I_{\Delta n}$ (A)	Weight(g)
WGC-20	**[*] P10131**	20 ø	acc. relay	75
WGC-30	**[*] P10132**	30 ø	acc. relay	95
WGC-25	**[*] P10151**	25 ø	acc. relay	80
WGC-35	**[*] P10152**	35 ø	acc. relay	120
WGC-55	**[*] P10153**	55 ø	acc. relay	160
WGC-80	**[*] P10154**	80 ø	acc. relay	300
WGC-110	**[*] P10155**	115 ø	acc. relay	420
WGC-140	**[*] P10156**	140 ø	acc. relay	760
WGC-180	**[*] P10157**	180 ø	acc. relay	1480
WGC-220x105	**[c] P10158**	220 x 105	acc. relay	3740
WGC-350x150	**[c] P10159**	350 x 150	acc. relay	7800
WGC-500x200	**[c] P10160**	500 x 200	acc. relay	11300
PA-TC/WG	**[*] P19921**	DIN rail mounting accessory for WGC-25, WGC-35 and WGC-55		

UL certificate all types

TP-WGC, Split-core earth leakage transformers



Type	Code	Useful diameter útil (mm)	$I_{\Delta n}$ (A) >0,3 A	Weight (g)
TP-WGC-58	**[c] P11121**	80 x 50	s / relé (*)	1
TP-WGC-88	**[c] P11131**	80 x 80	s / relé (*)	1,3
TP-WGC-812	**[c] P11141**	120 x 80	s / relé (*)	1,6
TP-WGC-816	**[c] P11151**	160 x 80	s / relé (*)	4,1

(*) Only for RGU-2, RGU-10/10C, CBS-4/4C

Delivery time: [*] immediate
[x] working weeks
[c] consult

Earth leakage protection and self-reclosing

REC3, RCCB with self-reclosing system





REC3 SERIES, TYPE A				
Type	**Code**	**Reclosing mode**	**I_n (A)**	**Sensitivity**
REC3-2P-40-30M	**[*] P26121**	Insulation	40	30 mA
REC3-2P-63-30M	**[*] P26131**	Insulation	63	30 mA
REC3-2P-40-300T	**[*] P26123**	Time	40	300 mA
REC3-2P-63-300T	**[*] P26133**	Time	63	300 mA
REC3 SERIES, TYPE A - 4 POLES				
REC3-4P-40-30M	**[*] P26221**	Insulation	40	30 mA
REC3-4P-63-30M	**[*] P26231**	Insulation	63	30 mA
REC3-4P-40-300T	**[*] P26223**	Time	40	300 mA
REC3-4P-63-300T	**[*] P26233**	Time	63	300 mA

3 reclosures: 3, 20, 180 s. in accordance with EN 50557

REC3C, RCCB with self-reclosing system and output contact





REC3C - 2 POLES, TYPE A				
Type	**Code**	**Reclosing mode**	**I_n (A)**	**Sensitivity**
REC3C 2P-40-30M	**[*] P26811**	Insulation	40	30 mA
REC3C 2P-63-30M	**[*] P26814**	Insulation	63	30 mA
REC3C 2P-40-300T	**[*] P26721**	Time	40	300 mA
REC3C 2P-63-300T	**[*] P26724**	Time	63	300 mA
REC3C - 4 POLES, TYPE A				
REC3C 4P-40-30M	**[*] P26812**	Insulation	40	30 mA
REC3C 4P-63-30M	**[*] P26815**	Insulation	63	30 mA
REC3C 4P-63-300T	**[*] P26722**	Time	40	300 mA
REC3C 4P-63-300T	**[*] P26725**	Time	63	300 mA

3 reclosures: 3, 20, 180 s. in accordance with EN 50557

Programmable earth leakage relays, used with an external earth leakage transformer and contactor

Complete set formed by: Earth leakage relay + Contactor + WGC transformer

RGU-10 RAL, Reclosing protection relays and earth leakage reclosing with WGC external transformer



RGU10-RAL,Type A ultra-immunised earth leakage relay that can be programmed in 3 modules with display and locking status release by reclosing. 230 V_{ac} Auxiliary power supply

Type	**Code**	**Breaking element**	**Communications**	**$I_{\Delta n}$ (A)**	**Delay (s) (*1)**	**Nr. reclosures**
RGU-10 RAL	**[*] P24622**	Contactor	-	0,03...30	0,02...10 s, INS, SEL (*2)	Programmable
RGU-10C RAL	**[*] P24662**	Contactor	RS-485	0,03...30	0,02...10 s, INS, SEL (*2)	Programmable

CBS-4 RA, central protection and earth leakage reclosing with WGC external transformer



CBS-4 RA, Station with 4 programmable ultra-immunised Type A earth leakage relays in 4 modules with display and locking status release by reclosing. 230 V_{ac} Auxiliary power supply

Type	**Code**	**Independent relays**	**Comunic.**	**$I_{\Delta n}$ (A)**	**Delay (s) (*1)**	**Nr. reclosures**
CBS-4 RA	**[*] P24911**	4	-	0,03...30	0,02...10 s, INS, SEL (*2)	Programmable
CBS-4C RA	**[*] P24912**	4	RS-485	0,03...30	0,02...10 s, INS, SEL (*2)	Programmable

(*1) The delay is cancelled in all relays with 0.03 A sensitivity adjustment, IEC 60947-2, Annex M
(*2) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a trip time <0.02 s
Requires an earth leakage transformer, WGC type and contactor (not included)
To encode other parameters, see the table at the end of the section

Programmable earth leakage relays with built-in transformer, used with a contactor

Complete set formed by: Earth leakage relay + Contactor

WRU-10 RAL , Protection relays and earth leakage reclosing, Type A ultra-immunised with built-in transformer



WRU-10 Series, programmable earth leakage relay, 3 modules with display, prealarm output and reconnection locking system. 230 V_{ac} Auxiliary power supply

Type	Code	Useful diameter ∅ (mm)	$I_{\Delta n}$ (A)	Delay (s) (*1)	Nr. reclosures	Time between reclosures (s)
WRU-10 RAL	**[*] P24453**	28	0,03 … 3 A 0,03 …30 A	0,02...10 s, INS, SEL (*2)	Programmable	Programmable
STREET LIGHTING WITH SIGN POSTING, contactor circuit breaker						
WRU-10-RAL 0,3-1	**[*] P24457**	28	0,3...1	0,02 INS	Programmable	Programmable

(*1) The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2 annex M
(*2)INS, SEL trigger curves, in accordance with IEC 61008-1, on trigger coils, for a≤ 0.02 s updating time
The contactor is not supplied. To encode other parameters, see the table at the end of the section

Overcurrent and earth leakage protection, earth leakage self-reclosing

Programmable earth leakage relays with built-in transformer and motorized circuit breaker

Complete set formed by: Earth leakage relay K Series + MCB circuit breaker

WRU-10K, earth leakage relay with built-in transformer



WRU-10K series, Earth leakage relay that can be programmed in 3 modules, display to operate with an MCB.P circuit breaker. 230 V_{ac} Auxiliary power supply

Type	Code	Useful diameter ∅ (mm)	$I_{\Delta n}$ (A)	Delay (s) (*1)	Nr. reclosings	Time between reclosings
WRU-10K 0,03-3	**[c] P23261**	28	0,03-3	0,02...1 s	30	20 s, 40 s then every 5 min
WRU-10K	**[c] P23262**	28	0,03	INS	15	20 s, 40 s then every 13 min

(*1) The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2 annex M
Requires a motorized circuit breaker, MCB.P type (not included)

MCB, Motorized circuit breakers for overcurrent and earth leakage protection with reclosing by differential relay

MCB.P





2 Poles

Type	Code	I_n (A)
MCB.P C-2p-6A	**[*] P20210**	6
MCB.P C-2p-10A	**[*] P20211**	10
MCB.P C-2p-16A	**[*] P20213**	16
MCB.P C-2p-20A	**[*] P20214**	20
MCB.P C-2p-25A	**[*] P20215**	25
MCB.P C-2p-32A	**[*] P20216**	32
MCB.P C-2p-40A	**[*] P20217**	40
MCB.P C-2p-50A	**[*] P20218**	50
MCB.P C-2p-63A	**[*] P20219**	63

4 Poles

Type	Code	I_n (A)
MCB.P C-3p+N-10A	**[*] P20221**	10
MCB.P C-3p+N-16A	**[*] P20223**	16
MCB.P C-3p+N-20A	**[*] P20224**	20
MCB.P C-3p+N-25A	**[*] P20225**	25
MCB.P C-3p+N-32A	**[*] P20226**	32
MCB.P C-3p+N-40A	**[*] P20227**	40
MCB.P C-3p+N-50A	**[*] P20228**	50
MCB.P C-3p+N-63A	**[*] P20229**	63

Auxiliary contact for MCB (overcurrent protection indication) **[*] P29001**

Only for operation with WRU-10K
C curve circuit breaker with 6 kA (EN 60898) cut off power, possibility of D curve (up to 32 A), with a supplement of 10%

Delivery time: [*] immediate
[x] working weeks
[c] consult

Overcurrent and earth leakage protection and reclosing

Programmable earth leakage relays with circuit breaker and external transformer

Set composed of: Earth leakage relay with built-in circuit breaker + WG Transformer

RECmax-LPd, Self-reclosing earth leakage relay with circuit breaker, used with an external earth leakage transformer





2 POLES

C Curve			D Curve		
Type	**Code**	**$I_{\Delta n}$ (A)**	**Type**	**Code**	**$I_{\Delta n}$ (A)**
RECmax-LPD-C2-6	**[c] P2A110**	6	**RECmax-LPD-D2-6**	**[c] P2A130**	**6**
RECmax-LPD-C2-10	**[c] P2A111**	10	**RECmax-LPD-D2-10**	**[c] P2A131**	**10**
RECmax-LPD-C2-16	**[c] P2A112**	16	**RECmax-LPD-D2-16**	**[c] P2A132**	**16**
RECmax-LPD-C2-20	**[c] P2A113**	20	**RECmax-LPD-D2-20**	**[c] P2A133**	**20**
RECmax-LPD-C2-25	**[c] P2A114**	25	**RECmax-LPD-D2-25**	**[c] P2A134**	**25**
RECmax-LPD-C2-32	**[c] P2A115**	32	**RECmax-LPD-D2-32**	**[c] P2A135**	**32**
RECmax-LPD-C2-40	**[c] P2A116**	40	**RECmax-LPD-D2-40**	**[c] P2A136**	**40**
RECmax-LPD-C2-50	**[c] P2A117**	50	**RECmax-LPD-D2-50**	**[c] P2A137**	**50**
RECmax-LPD-C2-63	**[c] P2A118**	63	**RECmax-LPD-D2-63**	**[c] P2A138**	**63**
4 POLES					
RECmax-LPD-C4-6	**[c] P2A120**	6	**RECmax-LPD-D4-6**	**[c] P2A140**	6
RECmax-LPD-C4-10	**[c] P2A121**	10	**RECmax-LPD-D4-10**	**[c] P2A141**	10
RECmax-LPD-C4-16	**[c] P2A122**	16	**RECmax-LPD-D4-16**	**[c] P2A142**	16
RECmax-LPD-C4-20	**[c] P2A123**	20	**RECmax-LPD-D4-20**	**[c] P2A143**	20
RECmax-LPD-C4-25	**[c] P2A124**	25	**RECmax-LPD-D4-25**	**[c] P2A144**	25
RECmax-LPD-C4-32	**[c] P2A125**	32	**RECmax-LPD-D4-32**	**[c] P2A145**	32
RECmax-LPD-C4-40	**[c] P2A126**	40	**RECmax-LPD-D4-40**	**[c] P2A146**	40
RECmax-LPD-C4-50	**[c] P2A127**	50	**RECmax-LPD-D4-50**	**[c] P2A147**	50
RECmax-LPD-C4-63	**[c] P2A128**	63	**RECmax-LPD-D4-63**	**[c] P2A148**	63

Earth leakage relay with adjustable sensitivity (0.03 to 1 A), adjustable delay (by curve, INS/SEL, or defined time span from 0.1 to 1 s) and automatic programmable reclosing.
Sensitivity adjustment to 0.03 A cancels the defined time span delay, IEC 60947-2, Annex M
Earth leakage transformer, WGS-20/30 and WGC-25/35 types
C/D curve circuit breakers with 6 kA (EN 60898) cut off power. Please contact us for other specifications.

Programmable earth leakage relay with built-in transformer + motorized circuit breaker

Complete set formed by: Earth leakage relay + WG/WGC Transformer + RECmax MP / MT-FDE

RGU-10 MT, Reclosing earth leakage relay for motorized circuit breakers



Type	Code	Comunic.	$I_{\Delta n}$ (A)	Delay (s) (*1)	Nr. reclosings	Time between reclosings
RGU-10 MT	**[*] P24642**	-	0,03...30	0,02...10 INS, SEL (*2)	Programmable	Programmable
RGU-10C MT	**[*] P24652**	RS-485	0,03...30	0,02...10 INS, SEL (*2)	Programmable	Programmable

(*1) The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2 annex M
(*2)INS, SEL trigger curves, in accordance with IEC 61008-1, on trigger coils, for a≤ 0.02 s updating time
WGS / WGC earth leakage transformer. To operate with RECmax MP (In≤63 A), with MT-FDE (In>63 A)
To encode other parameters, see the table at the end of the section

RGU-10/C RAL / RGU-10/C MT

Code						Internal code					Delivery time
P	**2**	**X**	**X**	**X**	**X**	**0**	**0**	**X**	**X**	**X**	
Power supply voltage			Standard (230 V_{ac})					0			-
			24...48 V_{ac} 24...125 V_{dc} (RGU-10/C RAL RGU-10/C MT)					4			1
			Certificate UL (Only RGU-10C MT)						0	7	2

Delivery time: [*] immediate
[x] working weeks
[c] consult

Programmable earth leakage relay with built-in transformer + motorized circuit breaker

Complete set formed by: Earth leakage relay + RECmax MP / MT

WRU-10 MT,Modular self-reclosing for motorized overcurrent



SERIES WRU-10 MT Programmable earth leakage relay in 3 modules, display with prealarm output and reclosing locking system. 230 V_{ac} Auxiliary Power Supply

Type	Code	Useful diameter ∅ (mm)	$I_{\Delta n}$ (A)	Delay (s) (*1)	Nr. reclosings	Time between reclosings
WRU-10 MT	**[*] P24275**	28	0,03 … 3 A 0,03 …30 A	0,02...10 s, INS, SEL (*2)	Programmable	Programmable

(*1) The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2 annex M
(*2) INS, SEL trigger curves, in accordance with IEC 61008-1, on trigger coils, for a≤ 0.02 s updating time
To operate with RECmax MP (I_n≤63 A), with MT-FDE (I_n>63 A)
To encode other parameters, see the table at the end of the section

RECmax MP, Motorized circuit breakers (up to 63 A)





2 POLES

C curve			D Curve		
Type	**Code**	$I_{\Delta n}$ (A)	**Type**	**Code**	$I_{\Delta n}$ (A)
RECmax MP-C2-6	**[1] P27110**	6	**RECmax MP-D2-6**	**[1] P27130**	**6**
RECmax MP-C2-10	**[1] P27111**	10	**RECmax MP-D2-10**	**[1] P27131**	**10**
RECmax MP-C2-16	**[1] P27112**	16	**RECmax MP-D2-16**	**[1] P27132**	**16**
RECmax MP-C2-20	**[1] P27113**	20	**RECmax MP-D2-20**	**[1] P27133**	**20**
RECmax MP-C2-25	**[1] P27114**	25	**RECmax MP-D2-25**	**[1] P27134**	**25**
RECmax MP-C2-32	**[1] P27115**	32	**RECmax MP-D2-32**	**[1] P27135**	**32**
RECmax MP-C2-40	**[1] P27116**	40	**RECmax MP-D2-40**	**[1] P27136**	**40**
RECmax MP-C2-50	**[1] P27117**	50	**RECmax MP-D2-50**	**[1] P27137**	**50**
RECmax MP-C2-63	**[1] P27118**	63	**RECmax MP-D2-63**	**[1] P27138**	**63**
4 POLES					
RECmax MP-C4-6	**[1] P27120**	6	**RECmax MP-D4-6**	**[1] P27140**	6
RECmax MP-C4-10	**[1] P27121**	10	**RECmax MP-D4-10**	**[1] P27141**	10
RECmax MP-C4-16	**[1] P27122**	16	**RECmax MP-D4-16**	**[1] P27142**	16
RECmax MP-C4-20	**[1] P27123**	20	**RECmax MP-D4-20**	**[1] P27143**	20
RECmax MP-C4-25	**[1] P27124**	25	**RECmax MP-D4-25**	**[1] P27144**	25
RECmax MP-C4-32	**[1] P27125**	32	**RECmax MP-D4-32**	**[1] P27145**	32
RECmax MP-C4-40	**[1] P27126**	40	**RECmax MP-D4-40**	**[1] P27146**	40
RECmax MP-C4-50	**[1] P27127**	50	**RECmax MP-D4-50**	**[1] P27147**	50
RECmax MP-C4-63	**[1] P27128**	63	**RECmax MP-D4-63**	**[1] P27148**	63

Contact us for more information about impulse inputs
C/D curve circuit breakers with 6 kA (EN 60898) cut off power. Please contact us for other specifications.

MT-FDE, Motorized circuit breaker for currents exceeding 63 A



3 poles				4 poles			
Type	**Code**	I_n (A)	**Weight(kg)**	**Type**	**Code**	I_n (A)	**Weight(kg)**
MT-FDE-80A	**[1] P20D60**	80	2,9	**MT-FDE-80A**	**[1] P20D70**	80	3,4
MT-FDE-100A	**[1] P20D61**	100	2,9	**MT-FDE-100A**	**[1] P20D71**	100	3,4
MT-FDE-125A	**[1] P20D62**	125	2,9	**MT-FDE-125A**	**[1] P20D72**	125	3,4
MT-FDE-160A	**[1] P20D63**	160	2,9	**MT-FDE-160A**	**[1] P20D73**	160	3,4
MT-FEE-250A	**[1] P20E64**	250	3,8	**MT-FEE-250A**	**[1] P20E74**	250	4,6

Delivery time: [*] immediate
[x] working weeks
[c] consult

WRGU-10 MTT, Full earth leakage and circuit breaker reclosing and protection unit, panel



2 Poles			4 Poles		
Type	Code	$I_{\Delta n}$ (A)	Type	Code	$I_{\Delta n}$ (A)
WRGU-10-MTT-C-2-6 A	[c] P21810	6	**WRGU-10-MTT-C-4-6 A**	[c] P21820	6
WRGU-10-MTT-C-2-10 A	[c] P21811	10	**WRGU-10-MTT-C-4-10 A**	[c] P21821	10
WRGU-10-MTT-C-2-16 A	[c] P21812	16	**WRGU-10-MTT-C-4-16 A**	[c] P21822	16
WRGU-10-MTT-C-2-20 A	[c] P21813	20	**WRGU-10-MTT-C-4-20 A**	[c] P21823	20
WRGU-10-MTT-C-2-25 A	[c] P21814	25	**WRGU-10-MTT-C-4-25 A**	[c] P21824	25
WRGU-10-MTT-C-2-32 A	[c] P21815	32	**WRGU-10-MTT-C-4-32 A**	[c] P21825	32
WRGU-10-MTT-C-2-40 A	[c] P21816	40	**WRGU-10-MTT-C-4-40 A**	[c] P21826	40
WRGU-10-MTT-C-2-50 A	[c] P21817	50	**WRGU-10-MTT-C-4-50 A**	[c] P21827	50
WRGU-10-MTT-C-2-63 A	[c] P21818	63	**WRGU-10-MTT-C-4-63 A**	[c] P21828	63

Certificat by Telecom (Telefónica)
Earth leakage relay with adjustable sensitivity (0.03 to 1 A), adjustable delay (by curve, INS/SEL, or defined time span from 0.1 to 1 s) and automatic reclosing with 15 attempts after the detection of an earth leakage and 2 attempts with circuit breaker.

Overcurrent self-reclosing

Self-reclosing circuit breaker

RECmax-P, Motorized circuit breakers, up to 63 A



2 POLES

C Curve			D Curve		
Type	Code	$I_{\Delta n}$ (A)	Type	Code	$I_{\Delta n}$ (A)
RECmax P-C2-6	**[1] P28110**	6	**RECmax P-D2-6**	**[1] P28130**	**6**
RECmax P-C2-10	**[1] P28111**	10	**RECmax P-D2-10**	**[1] P28131**	**10**
RECmax P-C2-16	**[1] P28112**	16	**RECmax P-D2-16**	**[1] P28132**	**16**
RECmax P-C2-20	**[1] P28113**	20	**RECmax P-D2-20**	**[1] P28133**	**20**
RECmax P-C2-25	**[1] P28114**	25	**RECmax P-D2-25**	**[1] P28134**	**25**
RECmax P-C2-32	**[1] P28115**	32	**RECmax P-D2-32**	**[1] P28135**	**32**
RECmax P-C2-40	**[1] P28116**	40	**RECmax P-D2-40**	**[1] P28136**	**40**
RECmax P-C2-50	**[1] P28117**	50	**RECmax P-D2-50**	**[1] P28137**	**50**
RECmax P-C2-63	**[1] P28118**	63	**RECmax P-D2-63**	**[1] P28138**	**63**



4 POLES

RECmax P-C4-6	**[1] P28120**	6	**RECmax P-D4-6**	**[1] P28140**	6
RECmax P-C4-10	**[1] P28121**	10	**RECmax P-D4-10**	**[1] P28141**	10
RECmax P-C4-16	**[1] P28122**	16	**RECmax P-D4-16**	**[1] P28142**	16
RECmax P-C4-20	**[1] P28123**	20	**RECmax P-D4-20**	**[1] P28143**	20
RECmax P-C4-25	**[1] P28124**	25	**RECmax P-D4-25**	**[1] P28144**	25
RECmax P-C4-32	**[1] P28125**	32	**RECmax P-D4-32**	**[1] P28145**	32
RECmax P-C4-40	**[1] P28126**	40	**RECmax P-D4-40**	**[1] P28146**	40
RECmax P-C4-50	**[1] P28127**	50	**RECmax P-D4-50**	**[1] P28147**	50
RECmax P-C4-63	**[1] P28128**	63	**RECmax P-D4-63**	**[1] P28148**	63

Contact us for more information about impulse inputs
C/D curve circuit breakers with 6 kA (EN 60898) cut off power. Please contact us for other specifications

Programmable reclosing relay + motorized switch

Complete set formed by: RRM + MT-E62/E64

RRM,Overcurrent tripping relay with self-reclosing system



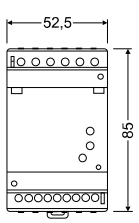
RRM RELAYS

Type	Code	Communications	Nr. reclosings	Time between reclosings
RRM-P	[*] P25130	-	adjustable: 0,1,2,4,6,8	0.5,1,2,3,4,5 min
RRM-C	[*] P25131	RS-485	adjustable: 0,1,2,4,6,8	0.5,1,2,3,4,5 min

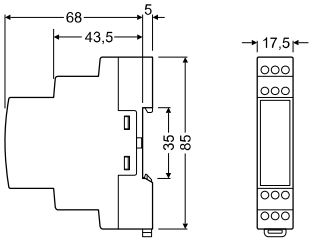
MT-E62/E64 consult

Dimensions

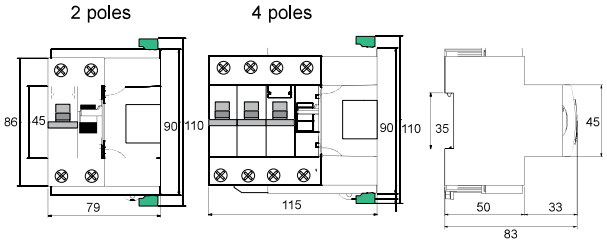
RGU-10 /CBS-4



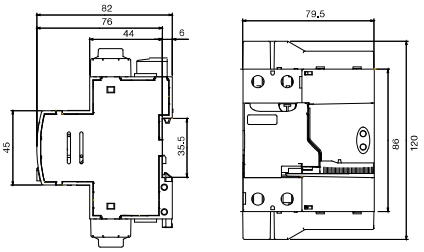
RRM



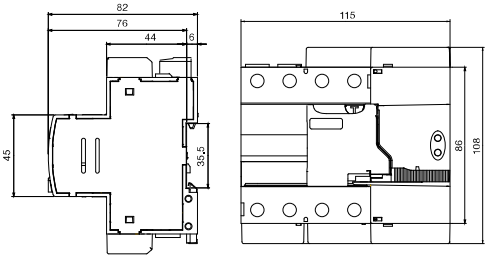
RECmax



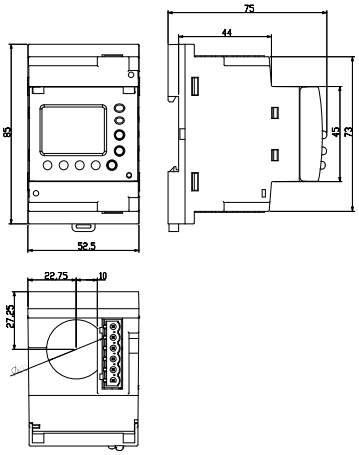
REC3C 2P / REC3C 2P



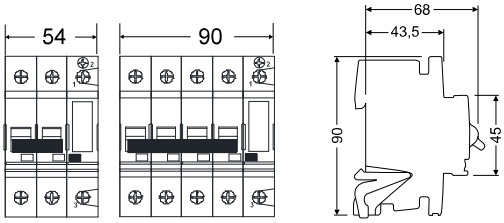
REC3C 4P / REC3C 4P



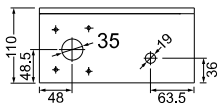
WRU-10

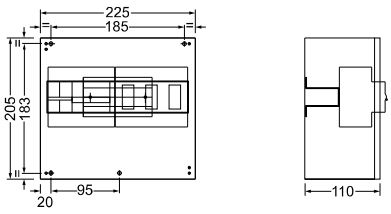


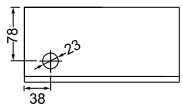
MCB.P



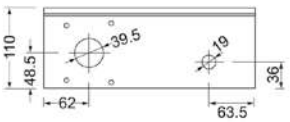
WRGU-10-MTT P2

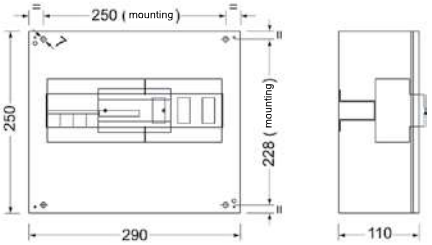


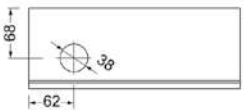




WRGU-10-MTT P4







Delivery time: [*] immediate
[x] working weeks
[c] consult

Control relays

TB, Bacon control equipment



Type	Code	Description
TB-3	[*] P30102	Programmable power between 15 ... 225 W Control of one circuit (BACON). Luminosity level controlled by means of a photocell (included with the equipment). 1 alarm relay for failure of circuit or photocell

RV / WI , Relays control



RV, Voltage detector relays (AC), DIN rail

Type	Code	System	Phase sequence
RV-M	[*] P30701	Single-phase 230 V	No
RV-T	[*] P30702	Three-phase 400/230 V	Yes
RV-TS	[*] P30704	Three-phase 400/230 V	No



WI, Current detector relay (AC), DIN rail

Type	Code	Trip time (adjustable)	Margin of setting (adjustable)
WI / 005-30	[*] P32011	0,5 ... 30 s	0,5 ... 5 A
WI / 010-30	[*] P32012	0,5 ... 30 s	1 ... 10 A
WI / 020-30	[*] P32013	0,5 ... 30 s	2 ... 20 A
WI / 050-30	[*] P32014	0,5 ... 30 s	5 ... 50 A
WI / 100-30	[*] P32015	0,5 ... 30 s	10 ... 100 A
WI / TS	[*] P32010	0,5 ... 30 s	s / transf. .../ 5 A

CDR-8, Station with 8 current relays, display and RS-485 communications

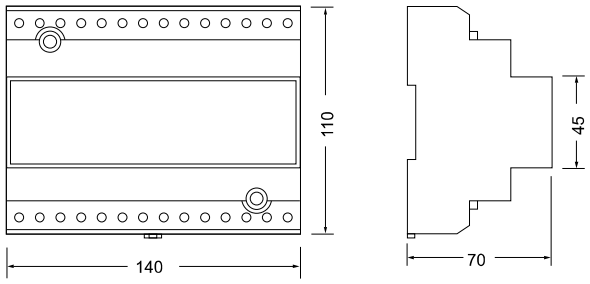


Type	Code	Description
CDR-8	[*] P32111	**8 current relays station, display, RS-485 communications** **See transformers on P1:** **30 mA ... 6,3 A WG/WGS Series** **300 mA ... 63 A WGP Series**

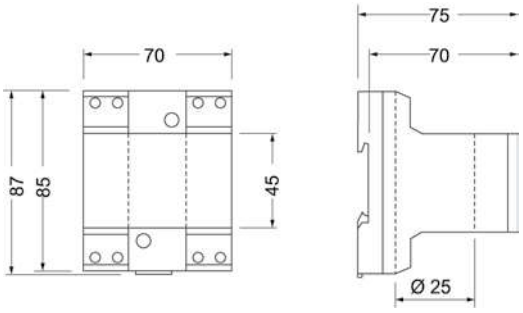
Measurement range 0.03 to 6.3 A with external transformer, model WGS/WG. Please contact us for more information
Measurement range 0.3 to 63 A with external transformer, model WGSP/WPG. Please contact us for more information

Dimensions

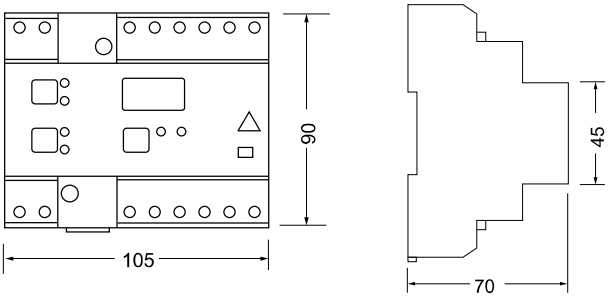
CDR-8



WI



TB-3



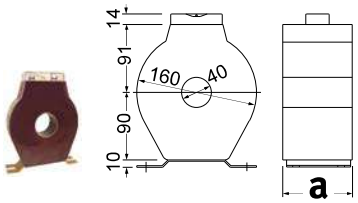
Delivery time: [*] immediate
[x] working weeks
[c] consult

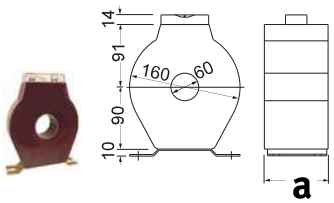
Protection current transformers

TRP model selection table, according to:
- Primary current intensity
- Maximum wiring diameter
- Assigned VA power
- Assigned accuracy/protection class

	TRP 40	TRP 60	TRP 80	TRP 100	TRP 140	TRP 180
	5P10-5P20	5P10-5P20	5P10-5P20	5P10-5P20	5P10-5P20	5P10-5P20
	Power (VA)					
100/5	**5**					
150/5	**5**	**2.5**				
200/5	**10**	**2.5**				
250/5	**10**	**5**	**5**			
300/5	**15**	**5**	**5**			
400/5	**20**	**7.5**	**7.5**			
500/5	**25**	**10**	**10**	inner		
600/5	inner	**10**	**10**	∅ **100 mm**		
750/5	∅ **40 mm**	**15**	**15**	**5**	inner	
800/5		**15**	**15**	**5**	∅ **140 mm**	
1 000/5		**20**	**20**	**7.5**	**5**	
1 200/5		inner	**25**	**10**	**5**	inner
1 250/5		∅ **60 mm**	**25**	**10**	**5**	∅ **180 mm**
1 500/5			**30**	**10**	**10**	**5**
1 600/5			**30**	**15**	**10**	**5**
1 800/5			**35**	**15**	**10**	**5**
2 000/5			inner	**15**	**10**	**7.5**
2 500/5			∅ **80 mm**	**20**	**10**	**10**
3 000/5				**25**	**15**	**10**
4 000/5					**15**	**15**
5 000/5						**15**

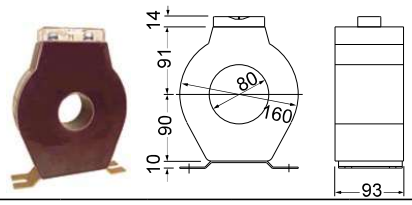
TRP, Protection transformers encapsulated in resin

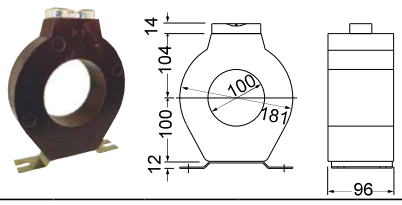




Type	TRP 40					TRP 60				
Ø inner	40 mm					60 mm				
A	V·A	5P10 Code	5P10 Weight kg	5P20 Code	5P20 Weight kg	V·A	5P10 Code	5P10 Weight kg	5P20 Code	5P20 Weight kg
100/5	5	**[4] P50311**	5,0	**[4] P50211**	9,0					
150/5	5	**[4] P50312**	5,0	**[4] P50212**	9,0	2,5	**[4] P50321**	2,6	**[4] P50221**	4,2
200/5	10	**[4] P50313**	5,0	**[4] P50213**	9,0	2,5	**[4] P50322**	2,7	**[4] P50222**	4,2
250/5	10	**[4] P50314**	5,0	**[4] P50214**	9,0	5	**[4] P50323**	2,7	**[4] P50223**	4,3
300/5	15	**[4] P50315**	5,1	**[4] P50215**	9,1	5	**[4] P50324**	2,7	**[4] P50224**	4,7
400/5	20	**[4] P50316**	5,1	**[4] P50216**	9,2	7,5	**[4] P50325**	2,8	**[4] P50225**	4,9
500/5	25	**[4] P50317**	5,2	**[4] P50217**	9,3	10	**[4] P50326**	2,8	**[4] P50226**	5,1
600/5						10	**[4] P50327**	2,9	**[4] P50227**	5,2
750/5						15	**[4] P50328**	3,0	**[4] P50228**	5,3
1 000/5						20	**[4] P50329**	3,2	**[4] P50229**	5,5

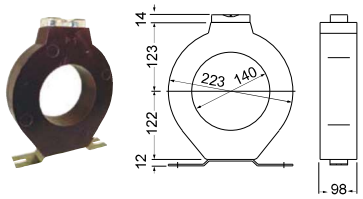
FOR OTHER PARAMETER CODING see table at the end of this section

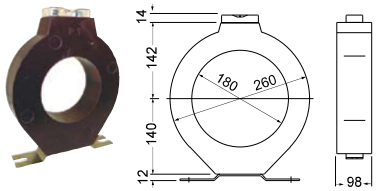




Type	TRP 80					TRP 100				
Ø inner	80 mm					100 mm				
A	V·A	5P10 Code	5P10 Weight kg	5P20 Code	5P20 Weight kg	V·A	5P10 Code	5P10 Weight kg	5P20 Code	5P20 Weight kg
250/5	5	[4] P50331	3,2	[4] P50231	5,6					
300/5	5	[4] P50332	3,3	[4] P50232	5,7					
400/5	7,5	[4] P50333	3,3	[4] P50233	5,8					
500/5	10	[4] P50334	3,4	[4] P50234	5,9					
600/5	10	[4] P50335	3,5	[4] P50235	6,1					
750/5						5	[4] P50341	3,4	[4] P50241	5,6
800/5	15	[4] P50336	3,6	[4] P50236	6,2					
1 000/5	20	[4] P50337	3,7	[4] P50237	6,3	7,5	[4] P50342	3,4	[4] P50242	5,8
1 200/5	25	[4] P50338	3,8	[4] P50238	6,6	10	[4] P50343	3,4	[4] P50243	5,9
1 500/5	30	[4] P50339	4,0	[4] P50239	6,9	10	[4] P50344	3,5	[4] P50244	6,1
2 000/5						15	[4] P50346	3,7	[4] P50246	6,4
2 500/5						15	[4] P50347	3,9	[4] P50247	6,8
3 000/5						20	[4] P50348	4,3	[4] P50248	7,3

FOR OTHER PARAMETER CODING see table at the end of P5





Type	TRP 140					TRP 180				
Ø inner	140					180				
A	V·A	5P10 Code	5P10 Weight kg	5P20 Code	5P20 Weight kg	V·A	5P10 Code	5P10 Weight kg	5P20 Code	5P20 Weight kg
1 000/5	5	[4] P50351	3,7	[4] P50251	6,2					
1 250/5	5	[4] P50352	3,8	[4] P50252	6,4					
1 500/5	10	[4] P50353	3,9	[4] P50253	6,6	5	[4] P50361	4,5	[4] P50261	7,6
2 000/5	10	[4] P50354	4,2	[4] P50254	7,1	7,5	[4] P50362	4,5	[4] P50262	7,6
2 500/5	10	[4] P50355	4,5	[4] P50255	7,5	10	[4] P50363	5,0	[4] P50263	8,5
3 000/5	15	[4] P50356	4,6	[4] P50256	8,0	10	[4] P50364	5,2	[4] P50264	8,9
4 000/5	15	[4] P50357	5,2	[4] P50257	8,9	15	[4] P50365	5,7	[4] P50265	9,7
5 000/5						15	[4] P50366	6,2	[4] P50266	10,6

FOR OTHER PARAMETER CODING see table at the end

TRP

Code			Internal Code							
P	5	X	X	X	X	0	0	X		
								↑	Delivery time	
Secondary					Standard (.../ 5 A)			0	-	
					... / 1A			1	3	

TRM, Measure current transformers encapsulated in resin, see section **Measurements and control/ Measuring current transformers and shunts**

Delivery time: [*] immediate
[x] working weeks
[c] consult

Measuring and testing equipments for substations

ASSORTED ANALYZERS AND TESTERS

	Type	Code	Description
	**GETEST, Indirect earth contact simulator**		
	GETEST	**[c] P6012300A0000**	Indirect earth contact simulator 5 ...50 A, GETEST
	Trolley GETEST	**[*] P6990A**	Transport trolley GETEST
	**CR, Relay tester**		
	CR-50	**[c] P6021100A0000**	Relay tester 50 A (carrying case version)
	CR-100	**[c] P6021200A0000**	Relay tester 100 A (carrying case version)
	CR-250	**[c] P6021300A0000**	Relay tester 250 A
	**ACCESSORIES CR-250**		
	Trafo CR-250	**[*] P69903**	Transformer 2500 A for CR-250
	Cable-CR-250	**[*] P69902**	Cable: Lenght 1,5 m / 2 500 A
	Trolley CR250	**[*] P69901**	Transport trolley CR250
	**OT2, Dielectric strenght tester**		
	OT2-60D	**[c] P6031200A0000**	Dielectric strenght tester for insulating oil 60 kV
	**MH, Microohmmeter**		
	MH-10	**[c] P6071100A0000**	Microohmmeter (Thomson Bridge)
	MH-100	**[c] P6071200A0000**	Microohmmeter 100 A
	MH-100e	**[c] P6071300A0000**	Microohmmeter 100 A
	**MI / MD, Megaohmmeters**		
	MI-5500e	**[c] P6051100A0000**	Analogue megaohmmeter 5 kV
	MD-5060e	**[c] P6052100A0000**	Digital megaohmmeter 5 kV (with memory and communications)
	MI-10kVe	**[c] P6051200A0000**	Analogue megaohmmeter 10 kV
	MI-15kVe	**[c] P6051300A0000**	Analogue megaohmmeter 15 kV
	MI-20kVe	**[c] P6051400A0000**	Analogue megaohmmeter 20 kV
	**TL, Earth resistance meter**		
	TL-5	**[c] P6062100A0000**	Earth resistance meter 4 ways
	PR-01	**[*] P69911**	Printer

CIRCUTOR calibration certificate included

Code						Internal Code			
P	6	X	X	X	X	0	0	X	
								↑	Delivery time
Certificate		ENAC calibration certificate						E	C

Delivery time: [*] immediate
[x] working weeks
[c] consult

PI-23, High voltage clamps

High voltage clamps, PI series, 36 kV, 50 Hz



Type	Code	Range of measurements (external power supply)	I_{max}	∅ max.
PI-23-50 Hz	**[*] M80132**	PI-23 + case - 50 Hz	400 A	25
PI-23-60 Hz	**[*] M801320010000**	PI-23 + case - 60 Hz	400 A	25
Pole 6 m	**[*] M89941**	6 m pole (3 x 2 m sections)		

Reactors for filtering, see section **Reactive energy compensation and harmonic filtering/ Low voltage capacitors and reactors**
In-line reactors **Reactive energy compensation and harmonic filtering/Harmonic filters**

Delivery time: [*] immediate
[x] working weeks
[c] consult