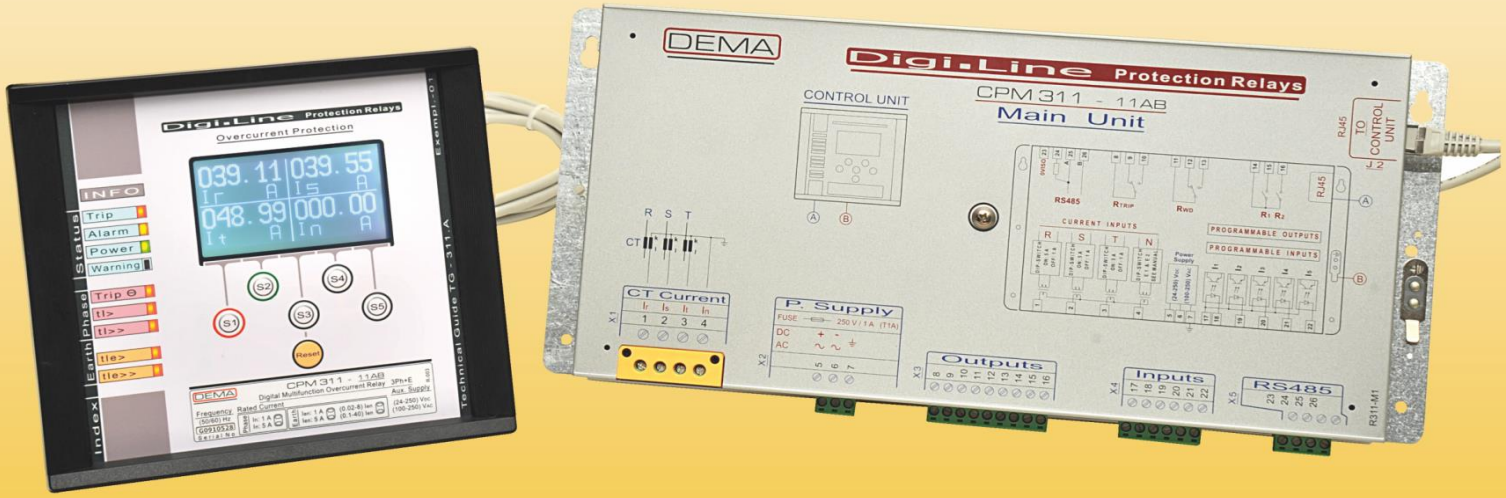
CPM 311
DIGITAL OVERCURRENT PROTECTION RELAY
MODBUS RTU MAPPING GUIDE
v1.0



DEMA CPM 311 Digital Overcurrent Protection Relay

MODBUS Mapping Guide

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MODBUS Parameter Tables

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Page
Block_selections_2	10	2 bytes	2nd settings group parameter that defines functions to be blocked.	R/W	65535	0	-	-	12
language	12	1 byte	Language selection.	R/W	1	0	-	-	12
lcd_backlight	13	1 byte	LCD backlighting options parameter.	R/W	1	0	-	-	12
phase_rotation	14	1 byte	Phase rotation options parameter.	R/W	1	0	-	-	12
active_group	15	1 byte	Active settings group determination parameter.	R/W	1	0	-	-	12

relay_address / Comm_options	16	2 bytes	CPM 311 communications address and options.	R/W	109	0	-	-	13
CT_Sec_phase / CT_sec_Earth	18	2 bytes	Phase CTs nominal secondary value and earth CT nominal secondary value.	R/W	261	0	-	-	14
CT_Pri_Phase	20	2 bytes	Phase CTs nominal primary value.	R/W	9999	1	-	-	←
CT_Pri_Earth	22	2 bytes	Earth CT nominal primary value.	R/W	9999	1	-	-	←
Frequency_type	24	1 byte	Nominal power frequency value.	R/W	1	0	-	-	14
Relay_definition	25, 27, 29, 31	8 bytes	Relay definition.	R/W	-	-	-	-	14
Password	33	2 bytes	Access, control and modification password.	R/W	9999	0	-	-	←
Last_event_no	35	2 bytes	The value of the latest recorded event no.	R	149	0	-	-	←
Alarm_warning_settings	37	1 byte	Active alarm settings options value.	R/W	3	0	-	-	15
ΣA_set_value	38	2 bytes	The decimal part of set total amperes value.	R/W	12000	0	-	-	←
ΣA_set_value_e	40	1 byte	The superscript part of set total amperes value.	R/W	4	0	-	-	←
ΣA2_set_value	41	2 bytes	The decimal part of set total ampere-squares value.	R/W	30000	0	-	-	←
ΣA2_set_value_e	43	1 byte	The superscript part of set total ampere-squares value.	R/W	8	0	-	-	←
cb_open_numarator_set_value	44	2 bytes	CB trip numerator set value.	R/W	65535	0	-	-	←
measure_cb_open_numarator	46	2 bytes	Measured CB tripping quantity.	R/W	65535	0	-	-	←
Protection_status_G1	48	2 bytes	1st settings group activated protection functions information.	R/W	38911	0	-	-	15
CLP_status	50	2 bytes	Protection functions to be effected by cold load pickup function.	R/W	1015	0	-	-	16
CLP_level	52	2 bytes	Cold load pickup current threshold setting value.	R/W	500	25	%	1	←
CLP_time	54	2 bytes	Cold load pickup activity duration time setting value.	R/W	36000	1	s	0,01	←
Trip_selections	56	2 bytes	Parameter that defines functions that are allowed to trip.	R/W	65535	0	-	-	16
Block_selections_1	58	2 bytes	Parameter that defines functions that are to be blocked by the 1st settings group.	R/W	65535	0	-	-	17
Logic_selections_1	60	2 bytes	Parameter that defines functions that are to be delayed by the 1st settings group.	R/W	54	0	-	-	17
Logic_selections_time_1	62	2 bytes	1st settings group delaying logic selectivity time setting value.	R/W	50000	0	s	0,01	←
input_selections	64, 66, 68, 70	7 byte	Parameter that describes the functions that are appointed to inputs.	R/W	6168	0	-	-	18
AUX_1_time_level	71	2 bytes	1st auxiliary timer time setting value.	R/W	60000	0	s	0,01	←
AUX_2_time_level	73	2 bytes	2nd auxiliary timer time setting value.	R/W	60000	0	s	0,01	←
active_inputs_mask	75	1 byte	Defines the level of logic at which the inputs are to be evaluated as "active".	R/W	127	0	-	-	18
Latch_selections	76	2 bytes	Defines which functions are to be latched once occurred.	R/W	8191	0	-	-	19
Relay_Latch_selections	78	2 bytes	Defines which output relays are to be latched once activated.	R/W	63	0	-	-	19
output_relay_settings	80 ... 110	31 bytes	Defines the functions that are appointed to the output relays.	R/W	63	0	-	-	20
auto_control_protection_status	111	2 bytes	Defines the automatic control functions to be "active" or "passive".	R/W	127	0	-	-	21
cb_open_fail_time / cb_close_fail_time	113	2 bytes	CB trip and close time supervision limit values.	R/W	25700	85	-	-	21
cb_open_pulse_time / cb_close_pulse_time	115	2 bytes	CB trip pulse and close pulse duration values.	R/W	12850	257	-	-	22
spring_fail_time	117	2 bytes	CB charging spring supervision time setting value.	R/W	60000	10	s	0,01	←
Trip_circuit_fail_time	119	2 bytes	CB trip circuit supervision time setting value.	R/W	150	1	s	0,1	←
total_reclose_numerator	122	2 bytes	Keeps the total number of auto-reclose shots.	R/W	65535	1	times	1	←
Parameter Name	**Parameter No.**	**Length**	**Description**	**Type**	**Max.**	**Min.**	**Unit**	**Mult.**	**Page**
reclose_bloke_numerator	124	2 bytes	Keeps the total number of auto-reclose blockages.	R/W	65535	1	times	1	←
reclose_cycles_selections_G1	128 ... 134	8 bytes	1st settings group protection functions to be available for auto-reclosing.	R/W	255	0	-	-	22
reclose_cycles_numerator_[0]	136	2 bytes	Keeps the total number of 1st cycle auto-reclose shots.	R/W	65535	0	times	1	←
reclose_cycles_numerator_[1]	138	2 bytes	Keeps the total number of 2nd cycle auto-reclose shots.	R/W	65535	0	times	1	←
reclose_cycles_numerator_[2]	140	2 bytes	Keeps the total number of 3rd cycle auto-reclose shots.	R/W	65535	0	times	1	←
reclose_cycles_numerator_[3]	142	2 bytes	Keeps the total number of 4th cycle auto-reclose shots.	R/W	65535	0	times	1	←
reclose_dead_times_G1_[0]	144	2 bytes	1st settings group 1st cycle auto-reclose dead-time.	R/W	30000	1	s	0,01	←
reclose_dead_times_G1_[1]	146	2 bytes	1st settings group 2nd cycle auto-reclose dead-time.	R/W	30000	1	s	0,01	←

reclose_dead_times_G1_[2]	148	2 bytes	1st settings group 3rd cycle auto-reclose dead-time.	R/W	30000	1	s	0,01	←
reclose_dead_times_G1_[3]	150	2 bytes	1st settings group 4th cycle auto-reclose dead-time.	R/W	30000	1	s	0,01	←
reclose_reclaim_time _G1	152	2 bytes	1st settings group auto-reclose reset time.	R/W	60000	20	s	0,01	←
reclose_inhibit_time_G1	154	2 bytes	1st settings group auto-reclose inhibition time.	R/W	60000	20	s	0,01	←
RO_password	158	2 bytes	Keeps the password value that enables read-only user activities.	R/W	9999	0	-	-	←
I> Delay Type_G1	160	2 bytes	1st settings group I> (Phase overcurrent 1st threshold) delay curve type value.	R/W	3328	0	-	-	23
I> Threshold_G1	161	2 bytes	1st settings group I> (Phase overcurrent 1st threshold) current threshold value.	R/W	2500	10	In	0,01	←
I>Delay_time_G1	163	2 bytes	1st settings group I> (Phase overcurrent 1st threshold) trip time delay.	R/W	-	-	-	-	23
I>T_reset _G1	165	2 bytes	1st settings group I> (Phase overcurrent 1st threshold) reset time value.	R/W	-	-	-	-	24
I> Reset_Type_G1	167	2 bytes	1st settings group I> (Phase overcurrent 1st threshold) reset curve type value.	R/W	3328	0	-	-	24
I>> Delay Type_G1	176	2 bytes	1st settings group I>> (Phase overcurrent 2nd threshold) delay curve type value.	R/W	3328	0	-	-	25
I>> Threshold_G1	177	2 bytes	1st settings group I>> (Phase overcurrent 2nd threshold) current threshold value.	R/W	4000	50	In	0,01	←
I>>Delay_time_G1	179	2 bytes	1st settings group I>> (Phase overcurrent 2nd threshold) trip time delay.	R/W	-	-	-	-	25
I>>T_reset _G1	181	2 bytes	1st settings group I>> (Phase overcurrent 2nd threshold) reset time value.	R/W	-	-	-	-	26
I>> Reset_Type_G1	183	2 bytes	1st settings group I>> (Phase overcurrent 2nd threshold) reset curve type value.	R/W	3328	0	-	-	26
Logic_selections_2	187	2 bytes	Functions to be included in 1st settings group delaying logic selectivity.	R/W	54	0	-	-	27
Logic_selections_time_2	189	2 bytes	1st settings group delaying logic selectivity time setting value.	R/W	50000	0	s	0,01	←
I>>> Delay Type_G1	192	2 bytes	1st settings group I>>> (Phase overcurrent 3rd threshold) delay curve type value.	R/W	3328	0	-	-	27
I>>> Threshold_G1	193	2 bytes	1st settings group I>>> (Phase overcurrent 3rd threshold) current threshold value.	R/W	4000	50	In	0,01	←
I>>>Delay_time_G1	195	2 bytes	1st settings group I>>> (Phase overcurrent 3rd threshold) trip time delay.	R/W	-	-	-	-	28
I>>>T_reset _G1	197	2 bytes	1st settings group I>>> (Phase overcurrent 3rd threshold) reset time value.	R/W	-	-	-	-	28
I>>> Reset_Type_G1	199	2 bytes	1st settings group I>>> (Phase overcurrent 3rd threshold) reset curve type value.	R/W	3328	0	-	-	29
I< Threshold_G1	209	2 bytes	1st settings group I< (Phase undercurrent) current threshold value.	R/W	100	2	In	0,01	←
I<Delay_time_G1	211	2 bytes	1st settings group I< (Phase undercurrent) trip time delay.	R/W	15000	1	s	0,01	←
Ie> Delay Type_G1	224	2 bytes	1st settings group Ie> (Earth overcurrent 1st threshold) delay curve type value.	R/W	3328	0	-	-	29
Ie> Threshold_G1	225	2 bytes	1st settings group Ie> (Earth overcurrent 1st threshold) current threshold value.	R/W	2500	10	In	0,01	←
Ie>Delay_time_G1	227	2 bytes	1st settings group Ie> (Earth overcurrent 1st threshold) trip time delay.	R/W	-	-	-	-	30
Ie>T_reset _G1	229	2 bytes	1st settings group Ie> (Earth overcurrent 1st threshold) reset time value.	R/W	-	-	-	-	30
Ie> Reset_Type_G1	231	2 bytes	1st settings group Ie> (Earth overcurrent 1st threshold) reset curve type value.	R/W	3328	0	-	-	31
Ie>> Delay Type_G1	240	2 bytes	1st settings group Ie>> (Earth overcurrent 2nd threshold) delay curve type value.	R/W	3328	0	-	-	31
Ie>> Threshold_G1	241	2 bytes	1st settings group Ie>> (Earth overcurrent 2nd threshold) current threshold value.	R/W	4000	50	In	0,01	←
Ie>>Delay_time_G1	243	2 bytes	1st settings group Ie>> (Earth overcurrent 2nd threshold) trip time delay.	R/W	-	-	-	-	32
Ie>>T_reset _G1	245	2 bytes	1st settings group Ie>> (Earth overcurrent 2nd threshold) reset time value.	R/W	-	-	-	-	32
Parameter Name	**Parameter No.**	**Length**	**Description**	**Type**	**Max.**	**Min.**	**Unit**	**Mult.**	**Page**
Ie>> Reset_Type_G1	247	2 bytes	1st settings group Ie>> (Earth overcurrent 2nd threshold) reset curve type value.	R/W	3328	0	-	-	33
Ie>>> Delay Type_G1	256	2 bytes	1st settings group Ie>>> (Earth overcurrent 3rd threshold) delay curve type value.	R/W	3328	0	-	-	33
Ie>>> Threshold_G1	257	2 bytes	1st settings group Ie>>> (Earth overcurrent 3rd threshold) current threshold value.	R/W	4000	50	In	0,01	←
Ie>>>Delay_time_G1	259	2 bytes	1st settings group Ie>>> (Earth overcurrent 3rd threshold) trip time delay.	R/W	-	-	-	-	34
Ie>>>T_reset _G1	261	2 bytes	1st settings group Ie>>> (Earth overcurrent 3rd threshold) reset time value.	R/W	-	-	-	-	34
Ie>>> Reset_Type_G1	263	2 bytes	1st settings group Ie>>> (Earth overcurrent 3rd threshold) reset curve type value.	R/W	3328	0	-	-	35
I2> Delay Type_G1	272	2 bytes	1st settings group I2> (Negative sequence 1st threshold) delay curve type value.	R/W	3328	0	-	-	35
I2> Threshold_G1	273	2 bytes	1st settings group I2> (Negative sequence 1st threshold) current threshold value.	R/W	4000	10	In	0,01	←
I2>Delay_time_G1	275	2 bytes	1st settings group I2> (Negative sequence 1st threshold) trip time delay.	R/W	-	-	-	-	36
I2>T_reset _G1	277	2 bytes	1st settings group I2> (Negative sequence 1st threshold) reset time value.	R/W	-	-	-	-	36
I2> Reset_Type_G1	279	2 bytes	1st settings group I2> (Negative sequence 1st threshold) reset curve type value.	R/W	3328	0	-	-	37

I2>> Delay Type_G1	288	2 bytes	1st settings group I2>> (Negative sequence 2nd threshold) delay curve type value.	R/W	3328	0	-	-	37
I2>> Threshold_G1	289	2 bytes	1st settings group I2>> (Negative sequence 2nd threshold) current threshold value.	R/W	4000	10	In	0,01	←
I2>>Delay_time_G1	291	2 bytes	1st settings group I2>> (Negative sequence 2nd threshold) trip time delay.	R/W	-	-	-	-	38
I2>>T_reset _G1	293	2 bytes	1st settings group I2>> (Negative sequence 2nd threshold) reset time value.	R/W	-	-	-	-	38
I2>> Reset_Type_G1	295	2 bytes	1st settings group I2>> (Negative sequence 2nd threshold) reset curve type value.	R/W	3328	0	-	-	39
IQ> Threshold_G1	305	2 bytes	1st settings group IΘ> (Thermal overload protection) current threshold value.	R/W	320	10	In	0,01	←
IQ> Te_G1	307	2 bytes	1st settings group IΘ> (Thermal overload protection) Te time constant value.	R/W	200	1	min	1	←
IQ> K_G1	309	2 bytes	1st settings group IΘ> (Thermal overload protection) k constant value.	R/W	150	100	-	0,01	←
IQ> Trip%_G1	311	1 byte	1st settings group IΘ> (Thermal overload protection) heating percentage value to trip.	R/W	200	50	%	1	←
IQ> Alarm%_G1	312	2 bytes	1st settings group IΘ> (Thermal overload protection) heating percentage value to alarm.	R/W	456	50	%	1	39
I2/I1> Threshold_G1	321	2 bytes	1st settings group %(I2/I1)> (Broken conductor protection) threshold percentage value.	R/W	100	20	%	1	←
I2/I1> Delay_Time_G1	323	2 bytes	1st settings group %(I2/I1)> (Broken conductor protection) trip time delay.	R/W	14400	1	s	1	←
KH_Threshold	353	2 bytes	CB failure current threshold value.	R/W	100	2	In	0,01	←
tKH	355	2 bytes	CB failure time delay for alarming.	R/W	1000	1	s	0,01	←
ΣA_measured_value_R	384	4 bytes	Phase R evaluated total current value.	R/W	12000	0	A	1	←
ΣA_measured_value_exp_R	388	1 byte	Phase R evaluated total current superscript value.	R/W	4	0	-	1	←
ΣA_measured_value_S	389	4 bytes	Phase S evaluated total current value.	R/W	12000	0	A	1	←
ΣA_measured_value_exp_S	393	1 byte	Phase S evaluated total current superscript value.	R/W	4	0	-	1	←
ΣA_measured_value_T	394	4 bytes	Phase T evaluated total current value.	R/W	12000	0	A	1	←
SA_measured_value_exp_T	398	1 byte	Phase T evaluated total current superscript value.	R/W	4	0	-	1	←
ΣA2_measured_value_R	399	4 bytes	Phase R evaluated total ampere-squares value.	R/W	30000	0	A	1	←
ΣA2_measured_value_exp_R	403	1 byte	Phase R evaluated total ampere-squares superscript value.	R/W	8	0	-	1	←
ΣA2_measured_value_S	404	4 bytes	Phase S evaluated total ampere-squares value.	R/W	30000	0	A	1	←
ΣA2_measured_value_exp_S	408	1 byte	Phase S evaluated total ampere-squares superscript value.	R/W	8	0	-	1	←
ΣA2_measured_value_T	409	4 bytes	Phase T evaluated total ampere-squares value.	R/W	30000	0	A	1	←
ΣA2_measured_value_exp_T	413	1 byte	Phase T evaluated total ampere-squares superscript value.	R/W	8	0	-	1	←
led_settings_0	496	4 bytes	Group 1 functions that are appointed to LED5.	R/W	231	0	-	-	40
led_settings_1	500	4 bytes	Group 1 functions that are appointed to LED6.	R/W	231	0	-	-	40
led_settings_2	504	4 byte	Group 1 functions that are appointed to LED7.	R/W	231	0	-	-	40
led_settings_3	508	4 bytes	Group 1 functions that are appointed to LED8.	R/W	231	0	-	-	40
Parameter Name	**Parameter No.**	**Length**	**Description**	**Type**	**Max.**	**Min.**	**Unit**	**Mult.**	**Page**
led_text	512	4 bytes	Texts for virtual LEDs no's 5 to 8 to be displayed on CPM 311 menus.	R/W	640034342	0	-	-	41
led_settings_2_0	516	2 bytes	Group 2 functions that are appointed to LED5.	R/W	64	0	-	-	42
led_settings_2_1	518	2 bytes	Group 2 functions that are appointed to LED6.	R/W	64	0	-	-	42
led_settings_2_2	520	2 bytes	Group 2 functions that are appointed to LED7.	R/W	64	0	-	-	42
led_settings_2_3	522	2 bytes	Group 2 functions that are appointed to LED8.	R/W	64	0	-	-	42
led_text_2	524	4 bytes	Texts for virtual LEDs no's 5 to 8 to be displayed on CPM 311 menus.	R/W	640034342	0	-	-	43
led_settings_4	528	4 bytes	Group 1 functions that are appointed to LED9.	R/W	231	0	-	-	44
led_settings_5	532	4 bytes	Group 1 functions that are appointed to LED10.	R/W	231	0	-	-	44
led_settings_6	536	4 bytes	Group 1 functions that are appointed to LED11.	R/W	231	0	-	-	44
led_settings_7	540	4 bytes	Group 1 functions that are appointed to LED12.	R/W	231	0	-	-	44
led_settings_2_4	544	2 bytes	Group 2 functions that are appointed to LED9.	R/W	64	0	-	-	45
led_settings_2_5	546	2 bytes	Group 2 functions that are appointed to LED10.	R/W	64	0	-	-	45
led_settings_2_6	548	2 bytes	Group 2 functions that are appointed to LED11.	R/W	64	0	-	-	45
led_settings_2_7	550	2 bytes	Group 2 functions that are appointed to LED12.	R/W	64	0	-	-	45

IURMS	600	2 bytes	Phase R current RMS value.	R	65535	0	-	-	46
IVRMS	601	2 bytes	Phase S current RMS value.	R	65535	0	-	-	46
IWRMS	602	2 bytes	Phase T current RMS value.	R	65535	0	-	-	46
IERMS	603	2 bytes	Earth current RMS value.	R	65535	0	-	-	46
IUH_1	604	2 bytes	Phase R current fundamental component value.	R	65535	0	-	-	47
IVH_1	605	2 bytes	Phase S current fundamental component value.	R	65535	0	-	-	47
IWH_1	606	2 bytes	Phase T current fundamental component value.	R	65535	0	-	-	47
IEH_1	607	2 bytes	Earth current fundamental component value.	R	65535	0	-	-	47
DSP_I1	608	2 bytes	Positive sequence current value.	R	65535	0	-	-	48
DSP_I2	609	2 bytes	Negative sequence current value.	R	65535	0	-	-	48
I2/I1	610	2 bytes	Negative over positive sequence current ratio value.	R	65535	0	%	1	←
Thermal_TETA	611	2 bytes	Thermal monitor measurement value.	R	65535	0	%	1	←
WUPLL	612	2 bytes	Current frequency value.	R	65535	0	Hz	0,01	←
SYS_HOUR / SYS_MIN	616	2 bytes	Hour and minute value of real time clock.	R	-	-	-	-	48
SYS_SECOND / SYS_DATE	617	2 bytes	Second and day value of real time clock.	R	-	-	-	-	48
SYS_MONTH / SYS_YEAR	618	2 bytes	Month and year value of real time clock.	R	-	-	-	-	48
INPUT_STATUS / uPSD OUTPUT STATUS	620	2 bytes	Input and output status information.	R	-	-	-	-	49
LED_OUT_STATUS / LED_FINAL_STATUS	621	2 bytes	LED status information.	R	-	-	-	-	50
R_RMS_RANGE/S_RMS_RANGE	625	2 bytes	R and S phases RMS current display format.	R	-	-	-	-	50
T_RMS_RANGE/N_RMS_RANGE	626	2 bytes	Phase T and earth RMS current display format.	R	-	-	-	-	51
R_HAR_RANGE/S_HAR_RANGE	627	2 bytes	R and S phases fundamental component current display format.	R	-	-	-	-	51
T_HAR_RANGE/N_HAR_RANGE	628	2 bytes	Phase T and earth fundamental component current display format.	R	-	-	-	-	51
R_MAX_RMS_range/ S_MAX_RMS_range	629	2 bytes	R and S phases max. RMS current display format.	R	-	-	-	-	52
T_MAX_RMS_range/ N_MAX_RMS_range	630	2 bytes	Phase T and earth max. RMS current display format.	R	-	-	-	-	52
I_1_RANGE/ I_2_RANGE	637	2 bytes	Positive and negative sequence current display format.	R	-	-	-	-	52
Protection_status_G2	640	2 bytes	2nd settings group activated protection functions information.	R/W	38911	0	-	-	53
reclose_cycles_selections_G2	642 ... 648	8 bytes	2nd settings group protection functions to be available for auto-reclosing.	R/W	255	0	-	-	53
Parameter Name	**Parameter No.**	**Length**	**Description**	**Type**	**Max.**	**Min.**	**Unit**	**Mult.**	**Page**
reclose_dead_times_G2_[0]	658	2 bytes	2nd settings group 1st cycle auto-reclose dead-time.	R/W	30000	1	s	0,01	←
reclose_dead_times_G2_[1]	660	2 bytes	2nd settings group 2nd cycle auto-reclose dead-time.	R/W	30000	1	s	0,01	←
reclose_dead_times_G2_[2]	662	2 bytes	2nd settings group 3rd cycle auto-reclose dead-time.	R/W	30000	1	s	0,01	←
reclose_dead_times_G2_[3]	664	2 bytes	2nd settings group 4th cycle auto-reclose dead-time.	R/W	30000	1	s	0,01	←
reclose_reclaim_time _G2	666	2 bytes	2nd settings group auto-reclose reset-time.	R/W	60000	20	s	0,01	←
reclose_inhibit_time_G2	668	2 bytes	2nd settings group auto-reclose inhibition time.	R/W	60000	20	s	0,01	←
I> Delay Type_G2	672	2 bytes	2nd settings group I> (Phase overcurrent 1st threshold) delay curve type value.	R/W	3328	0	-	-	54
I> Threshold_G2	673	2 bytes	2nd settings group I> (Phase overcurrent 1st threshold) current threshold value.	R/W	2500	10	In	0,01	←
I>Delay_time_G2	675	2 bytes	2nd settings group I> (Phase overcurrent 1st threshold) trip time delay.	R/W	-	-	-	-	54
I>T_reset _G2	677	2 bytes	2nd settings group I> (Phase overcurrent 1st threshold) reset time value.	R/W	-	-	-	-	55
I> Reset_Type_G2	679	2 bytes	2nd settings group I> (Phase overcurrent 1st threshold) reset curve type value.	R/W	3328	0	-	-	55
I>> Delay Type_G2	682	2 bytes	2nd settings group I>> (Phase overcurrent 2nd threshold) delay curve type value.	R/W	3328	0	-	-	56
I>> Threshold_G2	683	2 bytes	2nd settings group I>> (Phase overcurrent 2nd threshold) current threshold value.	R/W	4000	50	In	0,01	←
I>>Delay_time_G2	685	2 bytes	2nd settings group I>> (Phase overcurrent 2nd threshold) trip time delay.	R/W	-	-	-	-	56
I>>T_reset _G2	687	2 bytes	2nd settings group I>> (Phase overcurrent 2nd threshold) reset time value.	R/W	-	-	-	-	57
I>> Reset_Type_G2	689	2 bytes	2nd settings group I>> (Phase overcurrent 2nd threshold) reset curve type value.	R/W	3328	0	-	-	57
I>>> Delay Type_G2	692	2 bytes	2nd settings group I>>> (Phase overcurrent 3rd threshold) delay curve type value.	R/W	3328	0	-	-	58

I>>> Threshold_G2	693	2 bytes	2nd settings group I>>> (Phase overcurrent 3rd threshold) current threshold value.	R/W	4000	50	In	0,01	←
I>>>Delay_time_G2	695	2 bytes	2nd settings group I>>> (Phase overcurrent 3rd threshold) trip time delay.	R/W	-	-	-	-	58
I>>>T_reset _G2	697	2 bytes	2nd settings group I>>> (Phase overcurrent 3rd threshold) reset time value.	R/W	-	-	-	-	59
I>>> Reset_Type_G1	699	2 bytes	2nd settings group I>>> (Phase overcurrent 3rd threshold) reset curve type value.	R/W	3328	0	-	-	59
I< Threshold_G2	703	2 bytes	2nd settings group I< (Phase undercurrent) current threshold value.	R/W	100	2	In	0,01	←
I<Delay_time_G2	705	2 bytes	2nd settings group I< (Phase undercurrent) trip time delay.	R/W	15000	1	s	0,01	←
Ie> Delay Type_G2	712	2 bytes	2nd settings group Ie> (Earth overcurrent 1st threshold) delay curve type value.	R/W	3328	0	-	-	60
Ie> Threshold_G2	713	2 bytes	2nd settings group Ie> (Earth overcurrent 1st threshold) current threshold value.	R/W	2500	10	In	0,01	←
Ie>Delay_time_G1	715	2 bytes	2nd settings group Ie> (Earth overcurrent 1st threshold) trip time delay.	R/W	-	-	-	-	60
Ie>T_reset _G1	717	2 bytes	2nd settings group Ie> (Earth overcurrent 1st threshold) reset time value.	R/W	-	-	-	-	61
Ie> Reset_Type_G2	719	2 bytes	2nd settings group Ie> (Earth overcurrent 1st threshold) reset curve type value.	R/W	3328	0	-	-	61
Ie>> Delay Type_G2	722	2 bytes	2nd settings group Ie>> (Earth overcurrent 2nd threshold) delay curve type value.	R/W	3328	0	-	-	62
Ie>> Threshold_G2	723	2 bytes	2nd settings group Ie>> (Earth overcurrent 2nd threshold) current threshold value.	R/W	4000	50	In	0,01	←
Ie>>Delay_time_G2	725	2 bytes	2nd settings group Ie>> (Earth overcurrent 2nd threshold) trip time delay.	R/W	-	-	-	-	62
Ie>>T_reset _G2	727	2 bytes	2nd settings group Ie>> (Earth overcurrent 2nd threshold) reset time value.	R/W	-	-	-	-	63
Ie>> Reset_Type_G2	729	2 bytes	2nd settings group Ie>> (Earth overcurrent 2nd threshold) reset curve type value.	R/W	3328	0	-	-	63
Ie>>> Delay Type_G2	732	2 bytes	2nd settings group Ie>>> (Earth overcurrent 3rd threshold) delay curve type value.	R/W	3328	0	-	-	64
Ie>>> Threshold_G2	733	2 bytes	2nd settings group Ie>>> (Earth overcurrent 3rd threshold) current threshold value.	R/W	4000	50	In	0,01	←
Ie>>>Delay_time_G2	735	2 bytes	2nd settings group Ie>>> (Earth overcurrent 3rd threshold) trip time delay.	R/W	-	-	-	-	64
Ie>>>T_reset _G2	737	2 bytes	2nd settings group Ie>>> (Earth overcurrent 3rd threshold) reset time value.	R/W	-	-	-	-	65
Ie>>> Reset_Type_G2	739	2 bytes	2nd settings group Ie>>> (Earth overcurrent 3rd threshold) reset curve type value.	R/W	3328	0	-	-	65
I2> Delay Type_G2	742	2 bytes	2nd settings group I2> (Negative sequence 1st threshold) delay curve type value.	R/W	3328	0	-	-	66
I2> Threshold_G2	743	2 bytes	2nd settings group I2> (Negative sequence 1st threshold) current threshold value.	R/W	4000	10	In	0,01	←
I2>Delay_time_G2	745	2 bytes	2nd settings group I2> (Negative sequence 1st threshold) trip time delay.	R/W	-	-	-	-	66
Parameter Name	**Parameter No.**	**Length**	**Description**	**Type**	**Max.**	**Min.**	**Unit**	**Mult.**	**Page**
I2>T_reset _G2	747	2 bytes	2nd settings group I2> (Negative sequence 1st threshold) reset time value.	R/W	-	-	-	-	67
I2> Reset_Type_G2	749	2 bytes	2nd settings group I2> (Negative sequence 1st threshold) reset curve type value.	R/W	3328	0	-	-	67
I2>> Delay Type_G2	752	2 bytes	2nd settings group I2>> (Negative sequence 2nd threshold) delay curve type value.	R/W	3328	0	-	-	68
I2>> Threshold_G2	753	2 bytes	2nd settings group I2>> (Negative sequence 2nd threshold) current threshold value.	R/W	4000	10	In	0,01	←
I2>>Delay_time_G2	755	2 bytes	2nd settings group I2>> (Negative sequence 2nd threshold) trip time delay.	R/W	-	-	-	-	68
I2>>T_reset _G2	757	2 bytes	2nd settings group I2>> (Negative sequence 2nd threshold) reset time value.	R/W	-	-	-	-	69
I2>> Reset_Type_G2	759	2 bytes	2nd settings group I2>> (Negative sequence 2nd threshold) reset curve type value.	R/W	3328	0	-	-	69
IQ> Threshold_G2	763	2 bytes	2nd settings group IΘ> (Thermal overload protection) current threshold value.	R/W	320	10	In	0,01	←
IQ> Te_G2	765	2 bytes	2nd settings group IΘ> (Thermal overload protection) Te time constant value.	R/W	200	1	min	1	←
IQ> K_G2	767	2 bytes	2nd settings group IΘ> (Thermal overload protection) k constant value.	R/W	150	100	-	0,01	←
IQ> Trip%_G2	769	1 byte	2nd settings group IΘ> (Thermal overload protection) heating percentage value to trip.	R/W	200	50	%	1	←
IQ> Alarm%_G2	770	2 bytes	2nd settings group IΘ> (Thermal overload protection) heating percentage value to alarm.	R/W	456	50	%	1	70
I2/I1> Threshold_G2	773	2 bytes	2nd settings group %(I2/I1)> (Broken conductor protection) percentage threshold value.	R/W	100	20	%	1	←
I2/I1> Delay_Time_G2	775	2 bytes	2nd settings group %(I2/I1)> (Broken conductor protection) trip time delay.	R/W	14400	1	s	1	←
CH_SYS_HOUR / CH_SYS_MIN	4097	2 bytes	Parameter to change the hour and minute values of the real time clock.	W	-	-	-	-	70
CH_SYS_SECOND / CH_SYS_DATE	4098	2 bytes	Parameter to change the second and day values of the real time clock.	W	-	-	-	-	70
CH_SYS_MONTH / CH_SYS_YEAR	4099	2 bytes	Parameter to change the month and year values of the real time clock.	W	-	-	-	-	70
VERSION_MAJ/VER VERSION _MIN	4100	2 bytes	Parameter that keeps the software version running.	R	-	-	-	-	←
DELETE_ALARMS	4103	2 bytes	Control that deletes the active alarms.	W	-	-	-	-	70
RESET_TETA	4104	2 bytes	Control that resets the thermal monitor.	W	-	-	-	-	70

ORDER_RELAYS/PULSE_TIME	4105	2 bytes	Parameters that control the output relays.	W	-	-	-	-	71
CB_ON_OFF	4106	2 bytes	Parameters that controls the CB remotely.	W	-	-	-	-	71
RESET_CB_OPEN_NUMARATOR	4107	2 bytes	Control that resets CB trip numerator.	W	-	-	-	-	71
RESET_ΣA_R	4108	2 bytes	Control that resets evaluated total amperes of Phase R.	W	-	-	-	-	71
RESET_ΣA_S	4109	2 bytes	Control that resets evaluated total amperes of Phase S.	W	-	-	-	-	71
RESET_ΣA_T	4110	2 bytes	Control that resets evaluated total amperes of Phase T.	W	-	-	-	-	71
RESET_ΣA2_R	4111	2 bytes	Control that resets evaluated total ampere-squares of Phase R.	W	-	-	-	-	72
RESET_ΣA2_S	4112	2 bytes	Control that resets evaluated total ampere-squares of Phase S.	W	-	-	-	-	72
RESET_ΣA2_T	4113	2 bytes	Control that resets evaluated total ampere-squares of Phase T.	W	-	-	-	-	72
RESET_AR_TOTAL_CYCLE	4114	2 bytes	Control that resets auto-recloser total cycles counter.	W	-	-	-	-	72
RESET_1_CYCLE	4115	2 bytes	Control that resets auto-recloser 1st cycles counter.	W	-	-	-	-	72
RESET_2_CYCLE	4116	2 bytes	Control that resets auto-recloser 2nd cycles counter.	W	-	-	-	-	72
RESET_3_CYCLE	4117	2 bytes	Control that resets auto-recloser 3rd cycles counter.	W	-	-	-	-	72
RESET_4_CYCLE	4118	2 bytes	Control that resets auto-recloser 4th cycles counter.	W	-	-	-	-	72
RESET_AR_BLOKE_NUM	4119	2 bytes	Control that resets auto-recloser blockage counter.	W	-	-	-	-	73
ALARM_HISTORY	4110 ... 4135	50 bytes	Keeps the recorded alarm information.	R	-	-	-	-	73
Measure_cb_open_time	4159	2 bytes	Keeps the measured time for the latest CB trip.	R/W	0	0	s	0,01	73
Measure_cb_close_time	4160	2 bytes	Keeps the measured time for the latest CB close.	R/W	0	0	s	0,01	74
MAX_R_RMS	4161	2 bytes	Phase R current max. RMS value.	R	65535	0	-	-	74
MAX_S_RMS	4162	2 bytes	Phase S current max. RMS value.	R	65535	0	-	-	74
MAX_T_RMS	4163	2 bytes	Phase T current max. RMS value.	R	65535	0	-	-	74
Parameter Name	**Parameter No.**	**Length**	**Description**	**Type**	**Max.**	**Min.**	**Unit**	**Mult.**	**Page**
MAX_N_RMS	4164	2 bytes	Earth current max. RMS value.	R	65535	0	-	-	75

MODBUS Parameter Descriptions

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Block_selections_2	10	2 bytes	2nd settings group parameter that defines functions to be blocked.	R/W	65535	0	-	-	↙

(Most Significant Bit) 15 : If the bit value is "1", Pressure blockage is active.
14 : If the bit value is "1", Temperature blockage is active.
13 : If the bit value is "1", Buchholz blockage is active.
12 : If the bit value is "1", 2nd auxiliary timer blockage is active.
11 : If the bit value is "1", 1st auxiliary timer blockage is active.
10 : If the bit value is "1", %(I2/I1)> (broken conductor) blockage is active.
9 : If the bit value is "1", Thermal blockage is active.
8 : If the bit value is "1", I2>> (Negative sequence 2nd threshold) blockage is active.
7 : If the bit value is "1", I2> (Negative sequence 1st threshold) blockage is active.
6 : If the bit value is "1", Ie>>> (Earth overcurrent 3rd threshold) blockage is active.
5 : If the bit value is "1", Ie>> (Earth overcurrent 2nd threshold) blockage is active.
4 : If the bit value is "1", Ie> (Earth overcurrent 1st threshold) blockage is active.
3 : If the bit value is "1", I< (Phase undercurrent) blockage is active.
2 : If the bit value is "1", I>>> (Phase overcurrent 3rd threshold) blockage is active.
1 : If the bit value is "1", I>> (Phase overcurrent 2nd threshold) blockage is active.
(Least Significant Bit) 0 : If the bit value is "1", I> (Phase overcurrent 1st threshold) blockage is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
language	12	1 byte	Language selection.	R/W	1	0	-	-	↙

If the value is "0", "Turkish"; if the value is "1", "English" is selected.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
lcd_backlight	13	1 byte	LCD backlighting options parameter.	R/W	1	0	-	-	↙

If the value is "0", LCD backlighting goes off after a predefined time; if the value is "1", the backlighting will be always on.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details

phase_rotation	14	1 byte	Phase rotation options parameter.	R/W	1	0	-	-	↙

If the value is "0", the phase rotation is R – S – T; if the value is "1", the phase rotation is R – T – S.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
active_group	15	1 byte	Active settings group determination parameter.	R/W	1	0	-	-	↙

If the value is "0", 1st settings group is active; if the value is "1", 2nd settings group is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
relay_address / Comm_options	16	2 bytes	CPM 311 communications address and options.	R/W	109	0	-	-	↙

The most significant byte of the parameter keeps the communications address of the device, which is a value between and including 1 and 255th. The least significant byte of the parameter keeps the communications settings, which are described below.

(Most Significant Bit) 7, 6 Determines the symbolization style of the phases and earth.
- 00 : Symbolization style is "rstn".
- 01 : Symbolization style is "abce".
- 10 : Not used.
- 11 : Not used.

5, 4, 3 Determines the communications speed.
- 000 : Baudrate is 1200 bps.
- 001 : Baudrate is 2400 bps.
- 010 : Baudrate is 4800 bps.
- 011 : Baudrate is 9600 bps.
- 100 : Baudrate is 19200 bps.
- 101 : Baudrate is 38400 bps.
- 110 : Not used.
- 111 : Not used.

2, 1 Determines the communications protocol.
- 00 : DEMCOM communications protocol.
- 01 : MODBUS communications protocol.
- 10 : IEC60870-5-103 communications protocol.
- 11 : Not used.

(Least Significant Bit) 0 Determines the communications channel.
- 0 : The communications channel is RS232nd
- 1 : The communications channel is RS485th

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
CT_Sec_phase / CT_sec_Earth	18	2 bytes	Phase CTs nominal secondary value and earth CT nominal secondary value.	R/W	261	0	-	-	↙

The most significant byte of the parameter describes the Phase CT nominal secondary current value, while the least significant byte describes the earth CT nominal secondary current value.

CT_Sec_phase
0 : Phase CT nominal secondary current value is 1A.
1 : Phase CT nominal secondary current value is 5A.
Other bits : Not used.

CT_Sec_Earth
0 : Earth CT nominal secondary type is T11A.
1 : Earth CT nominal secondary type is T15A.
2 : Earth CT nominal secondary type is T21A.
3 : Earth CT nominal secondary type is T25A.
4 : Earth CT nominal secondary type is TS1A.
5 : Earth CT nominal secondary type is TS5A.
Other bits : Not used.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Frequency_type	24	1 byte	Nominal power frequency value.	R/W	1	0	-	-	↙

0 : Nominal power frequency value is 50Hz.
1 : Nominal power frequency value is 60Hz.
Other bits : Not used.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Relay_definition	25, 27, 29, 31	8 bytes	Relay definition.	R/W	-	-	-	-	↙

Each byte of the parameter describes a character of the relay definition. The below example shows the byte values for the relay definition "Demarole".

Example For the relay definition "Demarole", the bytes of the parameter should be as follows:
1st byte : ASCII code standing for 'D',
2nd byte : ASCII code standing for 'e',
3rd byte : ASCII code standing for 'm',
4th byte : ASCII code standing for 'a',
5th byte : ASCII code standing for 'R',
6th byte : ASCII code standing for 'o',

7th byte : ASCII code standing for 'l',
8th byte : ASCII code standing for 'e'.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Alarm_warning_settings	37	1 byte	Active alarm settings options value.	R/W	3	0	-	-	↙

(Most Significant Bit) 7 : Not used.
6 : Not used.
5 : Not used.
4 : Not used.
3 : Defines whether the CB password is active or passive. If the value is 0, the password is passive; and vice versa.
2 : Defines whether the settings password is active or passive. If the value is 0, the password is passive; and vice versa.
1 : Defines whether to display disturbances on the Alarm LED or not. If the value is 0, the disturbances are not displayed; and vice versa.
(Least Significant Bits) 0 : Defines the method of alarm resetting. If the value is 0, the alarms can only be reset manually; if the value is 1, the alarms are reset automatically.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Protection_status_G1	48	2 bytes	1st settings group activated protection functions information.	R/W	38911	0	-	-	↙

(Most Significant Bit) 15 : If the bit value is "1", Auto-reclose is active.
14 : Not used.
13 : Not used.
12 : If the bit value is "1", CB Failure is active.
11 : Not used.
10 : If the bit value is "1", %(I2/I1)> (Broken conductor protection) is active.
9 : If the bit value is "1", Thermal overload protection is active.
8 : If the bit value is "1", I2>> (Negative sequence 2nd threshold protection) is active.
7 : If the bit value is "1", I2> (Negative sequence 1st threshold protection) is active.
6 : If the bit value is "1", Ie>>> (Earth overcurrent 3rd threshold protection) is active.
5 : If the bit value is "1", Ie>> (Earth overcurrent 2nd threshold protection) is active.
4 : If the bit value is "1", Ie> (Earth overcurrent 1st threshold protection) is active.
3 : If the bit value is "1", I< (Phase undercurrent protection) is active.
2 : If the bit value is "1", I>>> (Phase overcurrent 3rd threshold protection) is active.
1 : If the bit value is "1", I>> (Phase overcurrent 2nd threshold protection) is active.
(Least Significant Bit) 0 : If the bit value is "1", I> (Phase overcurrent 1st threshold protection) is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
CLP_status	50	2 bytes	Protection functions to be effected by cold load pickup function.	R/W	1015	0	-	-	↙

(Most Significant Bit) 15, 14, 13, 12, 11, 10 : Not used.
9 : If the bit value is "1", Cold load pickup for thermal overload protection is active.
8 : If the bit value is "1", Cold load pickup for I2>> (Negative sequence 2nd threshold protection) is active.
7 : If the bit value is "1", Cold load pickup for I2> (Negative sequence 1st threshold protection) is active.
6 : If the bit value is "1", Cold load pickup for Ie>>> (Earth overcurrent 3rd threshold protection) is active.
5 : If the bit value is "1", Cold load pickup for Ie>> (Earth overcurrent 2nd threshold protection) is active.
4 : If the bit value is "1", Cold load pickup for Ie> (Earth overcurrent 1st threshold protection) is active.
3 : Not used.
2 : If the bit value is "1", Cold load pickup for I>>> (Phase overcurrent 3rd threshold protection) is active.
1 : If the bit value is "1", Cold load pickup for I>> (Phase overcurrent 2nd threshold protection) is active.
(Least Significant Bit) 0 : If the bit value is "1", Cold load pickup for I> (Phase overcurrent 1st threshold protection) is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Trip_selections	56	2 bytes	Parameter that defines functions that are allowed to trip.	R/W	65535	0	-	-	↙

(Most Significant Bit) 15 : If the bit value is "1", pressure trip is active.
14 : If the bit value is "1", thermometer trip is active.
13 : If the bit value is "1", Buchholz trip is active.
12 : If the bit value is "1", 2nd auxiliary timer trip is active.
11 : If the bit value is "1", 1st auxiliary timer trip is active.
10 : If the bit value is "1", %(I2/I1)> (Broken conductor protection) trip is active.
9 : If the bit value is "1", IΘ> (Thermal overload protection) trip is active.
8 : If the bit value is "1", I2>> (Negative sequence 2nd threshold protection) trip is active.
7 : If the bit value is "1", I2> (Negative sequence 1st threshold protection) trip is active.
6 : If the bit value is "1", Ie>>> (Earth overcurrent 3rd threshold protection) trip is active.
5 : If the bit value is "1", Ie>> (Earth overcurrent 2nd threshold protection) trip is active.
4 : If the bit value is "1", Ie> (Earth overcurrent 1st threshold protection) trip is active.
3 : If the bit value is "1", I< (Phase undercurrent protection) trip is active.
2 : If the bit value is "1", I>>> (Phase overcurrent 3rd threshold protection) trip is active.
1 : If the bit value is "1", I>> (Phase overcurrent 2nd threshold protection) trip is active.
(Least Significant Bit) 0 : If the bit value is "1", I> (Phase overcurrent 1st threshold protection) trip is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Block_selections_1	58	2 bytes	Parameter that defines functions that are to be blocked by the 1st settings group.	R/W	65535	0	-	-	↙

(Most Significant Bit) 15 : If the bit value is "1", pressure blocking is active.
14 : If the bit value is "1", thermometer blocking is active.
13 : If the bit value is "1", Buchholz blocking is active.
12 : If the bit value is "1", 2nd auxiliary timer blocking is active.
11 : If the bit value is "1", 1st auxiliary timer blocking is active.
10 : If the bit value is "1", %(I2/I1)> (Broken conductor protection) blocking is active.
9 : If the bit value is "1", IΘ> (Thermal overload protection) blocking is active.
8 : If the bit value is "1", I2>> (Negative sequence 2nd threshold protection) blocking is active.
7 : If the bit value is "1", I2> (Negative sequence 1st threshold protection) blocking is active.
6 : If the bit value is "1", Ie>>> (Earth overcurrent 3rd threshold protection) blocking is active.
5 : If the bit value is "1", Ie>> (Earth overcurrent 2nd threshold protection) blocking is active.
4 : If the bit value is "1", Ie> (Earth overcurrent 1st threshold protection) blocking is active.
3 : If the bit value is "1", I< (Phase undercurrent protection) blocking is active.
2 : If the bit value is "1", I>>> (Phase overcurrent 3rd threshold protection) blocking is active.
1 : If the bit value is "1", I>> (Phase overcurrent 2nd threshold protection) blocking is active.
(Least Significant Bit) 0 : If the bit value is "1", I> (Phase overcurrent 1st threshold protection) blocking is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Logic_selections_1	60	2 bytes	Parameter that defines functions that are to be delayed by the 1st settings group.	R/W	54	0	-	-	↙

(Most Significant Bit) 15 : Not used.
14 : Not used.
13 : Not used.
12 : Not used.
11 : Not used.
10 : Not used.
9 : Not used.
8 : Not used.
7 : Not used.
6 : If the bit value is "1", Delaying logic selectivity for Ie>>> (Earth overcurrent 3rd threshold protection) is active.
5 : If the bit value is "1", Delaying logic selectivity for Ie>> (Earth overcurrent 2nd threshold protection) is active.
4 : Not used.
3 : Not used.
2 : If the bit value is "1", Delaying logic selectivity for I>>> (Phase overcurrent 3rd threshold protection) is active.
1 : If the bit value is "1", Delaying logic selectivity for I>> (Phase overcurrent 2nd threshold protection) is active.
(Least Significant Bit) 0 : Not used.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
input_selections	64, 66, 68, 70	7 byte	Parameter that describes the functions that are appointed to inputs.	R/W	6168	0	-	-	↙

Each byte of the parameter represents an input. E.g., the most significant byte of parameter no. 64 represents the 1st input, and the least significant byte of parameter no.64 represents the 2nd input. The function appointment to each of the inputs are defined by the following values:

0 : Passive,
1 : Unlatch,
2 : 52a (normally open auxiliary contact signal),
3 : 52b (normally closed auxiliary contact signal),
4 : CB Positi. (CB Position),
5 : Start tAux1 (auxiliary timer no.1),
6 : Start tAux2 (auxiliary timer no.2),
7 : Blocking 1 (Blocking selectivity input no.1),
8 : Delay Sel1 (Delaying selectivity input no.1),
9 : Start Wave (Start Waveform Recording),
10 : Cold L. Pi. (Cold Load Pickup),
11 : Spr. Fail (CB Charging Spring Failure),
12 : Group Sel. (Settings Group Altering),
13 : ARC Block. (Block Auto-recloser),
14 : %Θ Reset (Reset Thermal Monitor),
15 : TripCirSup (Trip Circuit Supervision),
16 : Start CBF (Start CB Failure Alarm),
17 : Reset LED,
18 : Press.Trip (Pressure Trip),
19 : Buch.Alarm (Buchholz Alarm),
20 : Buch.Trip (Buchholz Trip),
21 : Temp.Alarm (Temperature/Thermometer Alarm),
22 : Temp.Trip (Temperature/Thermometer Trip),
23 : Blocking 2 (Blocking selectivity input no.2),
24 : Delay Sel2 (Delaying selectivity input no.2).

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
active_inputs_mask	75	1 byte	Defines the level of logic at which the inputs are to be evaluated as "active".	R/W	127	0	-	-	↙

(Most Significant Bit) 7 : Not used.
6 : If the bit value is "1", 6th input is active at logic level 1, else at logic level 0.
5 : If the bit value is "1", 5th input is active at logic level 1, else at logic level 0.
4 : If the bit value is "1", 4th input is active at logic level 1, else at logic level 0.
3 : If the bit value is "1", 3rd input is active at logic level 1, else at logic level 0.
2 : If the bit value is "1", 2nd input is active at logic level 1, else at logic level 0.
1 : If the bit value is "1", 1st input is active at logic level 1, else at logic level 0.
(Least Significant Bit) 0 : If the bit value is "1", 0th input is active at logic level 1, else at logic level 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Latch_selections	76	2 bytes	Defines which functions are to be latched once occurred.	R/W	8191	0	-	-	↙

(Most Significant Bit) 15 : If the bit value is "1", pressure latching is active.
14 : If the bit value is "1", thermometer latching is active.

13 : If the bit value is "1", Buchholz latching is active.
12 : If the bit value is "1", 2nd auxiliary timer latching is active.
11 : If the bit value is "1", 1st auxiliary timer latching is active.
10 : If the bit value is "1", %(I2/I1)> (Broken conductor protection) latching is active.
9 : If the bit value is "1", IΘ> (Thermal overload protection) latching is active.
8 : If the bit value is "1", I2>> (Negative sequence 2nd threshold protection) latching is active.
7 : If the bit value is "1", I2> (Negative sequence 1st threshold protection) latching is active.
6 : If the bit value is "1", Ie>>> (Earth overcurrent 3rd threshold protection) latching is active.
5 : If the bit value is "1", Ie>> (Earth overcurrent 2nd threshold protection) latching is active.
4 : If the bit value is "1", Ie> (Earth overcurrent 1st threshold protection) latching is active.
3 : If the bit value is "1", I< (Phase undercurrent protection) latching is active.
2 : If the bit value is "1", I>>> (Phase overcurrent 3rd threshold protection) latching is active.
1 : If the bit value is "1", I>> (Phase overcurrent 2nd threshold protection) latching is active.
(Least Significant Bit) 0 : If the bit value is "1", I> (Phase overcurrent 1st threshold protection) latching is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Relay_Latch_selections	78	2 bytes	Defines which output relays are to be latched once activated.	R/W	63	0	-	-	↙

(Most Significant Bit) 15 : Not used.
14 : Not used.
13 : Not used.
12 : Not used.
11 : Not used.
10 : Not used.
9 : Not used.
8 : Not used.
7 : Not used.
6 : Not used.
5 : If the bit value is "1", 6th output relay latching is active.
4 : If the bit value is "1", 5th output relay latching is active.
3 : If the bit value is "1", 4th output relay latching is active.
2 : If the bit value is "1", 3rd output relay latching is active.
1 : If the bit value is "1", 2nd output relay latching is active.
(Least Significant Bit) 0 : If the bit value is "1", 1st output relay latching is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
output_relay_settings	80 ... 110	31 bytes	Defines the functions that are appointed to the output relays.	R/W	63	0	-	-	↙

Each byte of the parameters defines a function, and each bit of the bytes determines to which output(s) that function is appointed to.

Parameter Function

Byte 1 : Trip
Byte 2 : I>
Byte 3 : tI>

Bit Descriptions for Each Byte

(Most Significant Bit) 7 : Not used.
6 : Not used.
5 : If "1", function is appointed to output 6.

Byte 4 : I>>
Byte 5 : tI>>
Byte 6 : I>>>
Byte 7 : tI>>>
Byte 8 : Ie>
Byte 9 : tIe>
Byte 10 : Ie>>
Byte 11 : tIe>>
Byte 12 : Ie>>>
Byte 13 : tIe>>>
Byte 14 : tI<
Byte 15 : tI2>
Byte 16 : tI2>>
Byte 17 : Thermal trip.
Byte 18 : Thermal alarm.
Byte 19 : CB alarm.
Byte 20 : 52 Error.
Byte 21 : Broken conductor.
Byte 22 : CB failure.
Byte 23 : CB close (Due to the general logic of CPM 311, if "CB close" is to be appointed to only one output.)
Byte 24 : Auxiliary timer 1.
Byte 25 : Auxiliary timer 2.
Byte 26 : Auto-reclose running.
Byte 27 : Auto-reclose blocked.
Byte 28 : Buchholz alarm.
Byte 29 : Buchholz trip.
Byte 30 : Thermal alarm.
Byte 31 : Thermal trip.

4 : If "1", function is appointed to output 5.
3 : If "1", function is appointed to output 4.
2 : If "1", function is appointed to output 3.
1 : If "1", function is appointed to output 2.
(Least Significant Bit) 0 : If "1", function is appointed to output 1.

Example If "thermal trip", "broken conductor" and "Buchholz alarm" functions are to be appointed to programmable relay no.4, then:
3rd bit of parameter no.96 should be written as "1" (Thermal Trip);
3rd bit of parameter no.100 should be written as "1" (Broken conductor);
3rd bit of parameter no.106 should be written as "1" (Buchholz Alarm).

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
auto_control_protection_status	111	2 bytes	Defines the automatic control functions to be "active" or "passive".	R/W	127	0	-	-	↙

(Most Significant Bit) 15 : Not used.
14 : Not used.
13 : Not used.
12 : Not used.
11 : Not used.
10 : Not used.
9 : Not used.
8 : Not used.

7 : Not used.
6 : If the bit value is "1", CB trip time supervision is active.
5 : If the bit value is "1", CB close time supervision is active.
4 : If the bit value is "1", CB charging spring supervision is active.
3 : If the bit value is "1", ΣA supervision is active.
2 : If the bit value is "1", ΣA2 supervision is active.
1 : If the bit value is "1", CB trip circuit supervision is active.
(Least Significant Bit) 0 : If the bit value is "1", CB trip numerator supervision is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
cb_open_fail_time / cb_close_fail_time	113	2 bytes	CB trip and close time supervision limit values.	R/W	25700	85	-	-	↙

The most significant byte of the parameter defines the limit time for CB trip, while the least significant byte defines the limit time for CB close.

cb_open_fail_time
Max value : 100
Min value : 5
Multiplier : 0.01
Unit : Seconds

cb_close_fail_time
Max value : 100
Min value : 5
Multiplier : 0.01
Unit : Seconds

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
cb_open_pulse_time / cb_close_pulse_time	115	2 bytes	CB trip pulse and close pulse duration values.	R/W	12850	257	-	-	↙

The most significant byte of the parameter defines the trip pulse duration of CB, while the least significant byte defines the close pulse duration of CB.

cb_open_pulse_time
Max value : 50
Min value : 1
Multiplier : 0.1
Unit : Seconds

cb_close_pulse_time
Max value : 50
Min value : 1
Multiplier : 0.1

Unit : Seconds

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
reclose_cycles_selections_G1	128 ... 134	8 bytes	1st settings group protection functions to be available for auto-reclosing.	R/W	255	0	-	-	↙

Each byte of the parameter represents a function, while each parameter value determines the auto-reclosing permissions for the 1st settings group. Details are given below.

Parameter	Function
1st Byte	: tI>
2nd Byte	: tI>>
3rd Byte	: tI>>>
4th Byte	: tIe>
5th Byte	: tIe>>
6th Byte	: tIe>>>
7th Byte	: tAux 1
8th Byte	: tAux 2

Bit Descriptions for Each Byte	
(Most Significant Bit) 7	: If "1", trip is active at 4th ARCL cycle.
6	: If "1", trip is active at 3rd ARCL cycle.
5	: If "1", trip is active at 2nd ARCL cycle.
4	: If "1", trip is active at 1st ARCL cycle.
3	: If "1", closing is active at 4th ARCL cycle.
2	: If "1", closing is active at 3rd ARCL cycle.
1	: If "1", closing is active at 2nd ARCL cycle.
(Least Significant Bit) 0	: If "1", closing is active at 1st ARCL cycle.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I> Delay Type_G1	160	2 bytes	1st settings group I> (Phase overcurrent 1st threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type value for the 1st settings group for I> (Phase overcurrent 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON

12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>Delay_time_G1	163	2 bytes	1st settings group I> (Phase overcurrent 1st threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I> Delay Type_G1 (no.160) is 0 (DMT), I>Delay_time_G1 (no.163) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I> Delay Type_G1 (no.160) is not 0 (DMT), I>Delay_time_G1 (no.163) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>T_reset _G1	165	2 bytes	1st settings group I> (Phase overcurrent 1st threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I> Reset_Type_G1 (no.167) is 0 (DMT), I>T_reset _G1 (no.165) is described as follows.
Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I> Reset_Type_G1 (no.167) is not 0 (DMT), I>T_reset _G1 (no.165) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I> Reset_Type_G1	167	2 bytes	1st settings group I> (Phase overcurrent 1st threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 1st settings group for I> (Phase overcurrent 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>> Delay Type_G1	176	2 bytes	1st settings group I>> (Phase overcurrent 2nd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 1st settings group for I>> (Phase overcurrent 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>Delay_time_G1	179	2 bytes	1st settings group I>> (Phase overcurrent 2nd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I>> Delay Type_G1 (no.176) is 0 (DMT), I>>Delay_time_G1 (no.179) is described as follows.

Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I>> Delay Type_G1 (no.176) is not 0 (DMT), I>>Delay_time_G1 (no.179) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>T_reset _G1	181	2 bytes	1st settings group I>> (Phase overcurrent 2nd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I>> Reset_Type_G1 (no.183) is 0 (DMT), I>>T_reset _G1 (no.181) is described as follows.

Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I>> Reset_Type_G1 (no.183) is not 0 (DMT), I>>T_reset _G1 (no.181) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>> Reset_Type_G1	183	2 bytes	1st settings group I>> (Phase overcurrent 2nd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 1st settings group for I>> (Phase overcurrent 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI

5 : IEC LTI
6 : SC CO2
7 : IEEE MI
8 : SD CO8
9 : IEEE VI
10 : IEEE EI
11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Logic_selections_2	187	2 bytes	Functions to be included in 1st settings group delaying logic selectivity.	R/W	54	0	-	-	↙

(Most Significant Bit) 15 : Not used.
14 : Not used.
13 : Not used.
12 : Not used.
11 : Not used.
10 : Not used.
9 : Not used.
8 : Not used.
7 : Not used.
6 : If the bit value is "1", Ie>>> (Earth overcurrent 3rd threshold) delaying logic selectivity is active.
5 : If the bit value is "1", Ie>> (Earth overcurrent 2nd threshold) delaying logic selectivity is active.
4 : Not used.
3 : Not used.
2 : If the bit value is "1", I>>> (Phase overcurrent 3rd threshold) delaying logic selectivity is active.
1 : If the bit value is "1", I>> (Phase overcurrent 2nd threshold) delaying logic selectivity is active.
(Least Significant Bit) 0 : Not used.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>> Delay Type_G1	192	2 bytes	1st settings group I>>> (Phase overcurrent 3rd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 1st settings group for I>>> (Phase overcurrent 3rd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI

3 : IEC VI
4 : IEC EI
5 : IEC LTI
6 : SC CO2
7 : IEEE MI
8 : SD CO8
9 : IEEE VI
10 : IEEE EI
11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>>Delay_time_G1	195	2 bytes	1st settings group I>>> (Phase overcurrent 3rd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I>>> Delay Type_G1 (no.192) is 0 (DMT), I>>>Delay_time_G1 (no.195) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I>>> Delay Type_G1 (no.192) is not 0 (DMT), I>>>Delay_time_G1 (no.195) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>>T_reset _G1	197	2 bytes	1st settings group I>>> (Phase overcurrent 3rd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I>>> Reset_Type_G1 (no.199) is 0 (DMT), I>>>T_reset _G1 (no.197) is described as follows.
Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I>>> Reset_Type_G1 (no.199) is not 0 (DMT), I>>>T_reset _G1 (no.197) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>> Reset_Type_G1	199	2 bytes	1st settings group I>>> (Phase overcurrent 3rd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 1st settings group for I>>> (Phase overcurrent 3rd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie> Delay Type_G1	224	2 bytes	1st settings group Ie> (Earth overcurrent 1st threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 1st settings group for Ie> (Earth overcurrent 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8

9 : IEEE VI
10 : IEEE EI
11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>Delay_time_G1	227	2 bytes	1st settings group Ie> (Earth overcurrent 1st threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of Ie> Delay Type_G1 (no.224) is 0 (DMT), Ie>Delay_time_G1 (no.227) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie> Delay Type_G1 (no.224) is not 0 (DMT), Ie>Delay_time_G1 (no.227) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>T_reset _G1	229	2 bytes	1st settings group Ie> (Earth overcurrent 1st threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of Ie> Reset_Type_G1 (no.231) is 0 (DMT), Ie>T_reset _G1 (no.229) is described as follows.
Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie> Reset_Type_G1 (no.231) is not 0 (DMT), Ie>T_reset _G1 (no.229) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie> Reset_Type_G1	231	2 bytes	1st settings group Ie> (Earth overcurrent 1st threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 1st settings group for Ie> (Earth overcurrent 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>> Delay Type_G1	240	2 bytes	1st settings group Ie>> (Earth overcurrent 2nd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 1st settings group for Ie>> (Earth overcurrent 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>Delay_time_G1	243	2 bytes	1st settings group Ie>> (Earth overcurrent 2nd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of Ie>> Delay Type_G1 (no.240) is 0 (DMT), Ie>>Delay_time_G1 (no.243) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie>> Delay Type_G1 (no.240) is not 0 (DMT), Ie>>Delay_time_G1 (no.243) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>T_reset _G1	245	2 bytes	1st settings group Ie>> (Earth overcurrent 2nd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of Ie>> Reset_Type_G1 (no.247) is 0 (DMT), Ie>>T_reset _G1 (no.245) is described as follows.
Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie>> Reset_Type_G1 (no.247) is not 0 (DMT), Ie>>T_reset _G1 (no.245) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>> Reset_Type_G1	247	2 bytes	1st settings group Ie>> (Earth overcurrent 2nd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 1st settings group for Ie>> (Earth overcurrent 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>> Delay Type_G1	256	2 bytes	1st settings group Ie>>> (Earth overcurrent 3rd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 1st settings group for Ie>>> (Earth overcurrent 3rd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>>Delay_time_G1	259	2 bytes	1st settings group Ie>>> (Earth overcurrent 3rd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of Ie>>> Delay Type_G1 (no.256) is 0 (DMT), Ie>>>Delay_time_G1 (no.259) is described as follows.

Max value : 15000

Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie>>> Delay Type_G1 (no.256) is not 0 (DMT), Ie>>>Delay_time_G1 (no.259) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>>T_reset _G1	261	2 bytes	1st settings group Ie>>> (Earth overcurrent 3rd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of Ie>>> Reset_Type_G1 (no.263) is 0 (DMT), Ie>>>T_reset _G1 (no.261) is described as follows.
Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie>>> Reset_Type_G1 (no.263) is not 0 (DMT), Ie>>>T_reset _G1 (no.261) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>> Reset_Type_G1	263	2 bytes	1st settings group Ie>>> (Earth overcurrent 3rd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 1st settings group for Ie>>> (Earth overcurrent 3rd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI

3 : IEC VI
4 : IEC EI
5 : IEC LTI
6 : SC CO2
7 : IEEE MI
8 : SD CO8
9 : IEEE VI
10 : IEEE EI
11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2> Delay Type_G1	272	2 bytes	1st settings group I2> (Negative sequence 1st threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 1st settings group for I2> (Negative sequence 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>Delay_time_G1	275	2 bytes	1st settings group I2> (Negative sequence 1st threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I2> Delay Type_G1 (no.272) is 0 (DMT), I2>Delay_time_G1 (no.275) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I2> Delay Type_G1 (no.272) is not 0 (DMT), I2>Delay_time_G1 (no.275) is described as follows.
Max value : 3200

Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>T_reset _G1	277	2 bytes	1st settings group I2> (Negative sequence 1st threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I2> Reset_Type_G1 (no.279) is 0 (DMT), I2>T_reset _G1 (no.277) is described as follows.
Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I2> Reset_Type_G1 (no.279) is not 0 (DMT), I2>T_reset _G1 (no.277) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2> Reset_Type_G1	279	2 bytes	1st settings group I2> (Negative sequence 1st threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 1st settings group for I2> (Negative sequence 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8

9 : IEEE VI
10 : IEEE EI
11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>> Delay Type_G1	288	2 bytes	1st settings group I2>> (Negative sequence 2nd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 1st settings group for I2>> (Negative sequence 2nd threshold). Details are given below.

Value Delay Curve Type
0 : DMT
1 : IEC STI
2 : IEC SI
3 : IEC VI
4 : IEC EI
5 : IEC LTI
6 : SC CO2
7 : IEEE MI
8 : SD CO8
9 : IEEE VI
10 : IEEE EI
11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>>Delay_time_G1	291	2 bytes	1st settings group I2>> (Negative sequence 2nd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I2>> Delay Type_G1 (no.288) is 0 (DMT), I2>>Delay_time_G1 (no.291) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I2>> Delay Type_G1 (no.288) is not 0 (DMT), I2>>Delay_time_G1 (no.291) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details

I2>>T_reset _G1	293	2 bytes	1st settings group I2>> (Negative sequence 2nd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I2>> Reset_Type_G1 (no.295) is 0 (DMT), I2>>T_reset _G1 (no.293) is described as follows.

Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I2>> Reset_Type_G1 (no.295) is not 0 (DMT), I2>>T_reset _G1 (no.293) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>> Reset_Type_G1	295	2 bytes	1st settings group I2>> (Negative sequence 2nd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 1st settings group for I2>> (Negative sequence 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IQ> Alarm%_G1	312	2 bytes	1st settings group IΘ> (Thermal overload protection) heating percentage value to alarm.	R/W	456	50	%	1	↙

The most significant byte of the parameter defines if IQ> (Thermal overload protection) alarm is active for the first settings group or not. If the most significant byte is "0", Thermal Overload Alarm is passive, if it is "1", Thermal Overload Alarm is active.

The least significant byte of the parameter defines the level of IQ> (Thermal overload protection) alarming level in percentage.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
led_settings_0	496	4 bytes	Group 1 functions that are appointed to LED5.	R/W	231	0	-	-	↙
led_settings_1	500	4 bytes	Group 1 functions that are appointed to LED6.	R/W	231	0	-	-	↙
led_settings_2	504	4 bytes	Group 1 functions that are appointed to LED7.	R/W	231	0	-	-	↙
led_settings_3	508	4 bytes	Group 1 functions that are appointed to LED8.	R/W	231	0	-	-	↙

(Most Significant Bit) 31 : If the bit value is "1", "tI2>" function is appointed.
30 : If the bit value is "1", "CB Failure" function is appointed.
29 : If the bit value is "1", "%I2/I1" function is appointed.
28 : If the bit value is "1", "Thermal Trip" function is appointed.
27 : If the bit value is "1", "tIe>>>" function is appointed.
26 : If the bit value is "1", "Ie>>>" function is appointed.
25 : If the bit value is "1", "tIe>>" function is appointed.
24 : If the bit value is "1", "Ie>>" function is appointed.
23 : If the bit value is "1", "tIe>" function is appointed.
22 : If the bit value is "1", "Ie>" function is appointed.
21 : If the bit value is "1", "tI>>>" function is appointed.
20 : If the bit value is "1", "I>>>" function is appointed.
19 : If the bit value is "1", "tI>>" function is appointed.
18 : If the bit value is "1", "I>>" function is appointed.
17 : If the bit value is "1", "tI>" function is appointed.
16 : If the bit value is "1", "I>" function is appointed.
15 : If the bit value is "1", "Temperature Trip" function is appointed.

14 : If the bit value is "1", "Temperature Alarm" function is appointed.
13 : If the bit value is "1", "Buchholz Trip" function is appointed.
12 : If the bit value is "1", "Buchholz Alarm" function is appointed.
11 : If the bit value is "1", "Auto-reclose Locked" function is appointed.
10 : If the bit value is "1", "Auto-reclose Running" function is appointed.
9 : If the bit value is "1", "Cold Load Pickup Running" function is appointed.
8 : If the bit value is "1", "2nd Auxiliary Timer Running" function is appointed.
7 : If the bit value is "1", "1st Auxiliary Timer Running" function is appointed.
6 : If the bit value is "1", "7th input position" is appointed.
5 : If the bit value is "1", "6th input position" is appointed.
4 : If the bit value is "1", "5th input position" is appointed.
3 : If the bit value is "1", "4th input position" is appointed.
2 : If the bit value is "1", "3rd input position" is appointed.
1 : If the bit value is "1", "2nd input position" is appointed.
(Least Significant Bit) 0 : If the bit value is "1", "1st input position" is appointed.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
led_text	512	4 bytes	LED texts to be displayed on CPM 311 menus.	R/W	640034342	0	-	-	↙

Each byte of the parameter defines the text to be displayed for the relevant virtual LED. The most significant value of the parameter is for LED5, while the least significant byte is for LED8. The definitions valid for each of the byte are given below.

Value	Display
0	I>
1	tI>
2	I>>
3	tI>>
4	I>>>
5	tI>>>
6	Ie>
7	tIe>
8	Ie>>
9	tIe>>
10	Ie>>>
11	tIe>>>
12	Thermal Trip
13	Broken Conductor
14	CB failure
15	tI2>
16	1st input
17	2nd input
18	3rd input
19	4th input

Value	Display
20	5th input
21	6th input
22	7th input
23	tAux 1
24	tAux 2
25	CLP in progress
26	ARCL in progress
27	ARCL locked
28	BUCH.Alarm
29	BUCH.trip
30	TEMP.Alarm
31	TEMP.trip
32	CB Alarm
33	I2>
34	I2>>
35	tI2>>
36	I<
37	tI<
38	Pressure trip

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
led_settings_2_0	516	2 bytes	Group 2 functions that are appointed to LED5.	R/W	64	0	-	-	↙
led_settings_2_1	518	2 bytes	Group 2 functions that are appointed to LED6.	R/W	64	0	-	-	↙
led_settings_2_2	520	2 bytes	Group 2 functions that are appointed to LED7.	R/W	64	0	-	-	↙
led_settings_2_3	522	2 bytes	Group 2 functions that are appointed to LED8.	R/W	64	0	-	-	↙

(Most Significant Bit) 15 : Not used.
14 : Not used.
13 : Not used.
12 : Not used.
11 : Not used.
10 : Not used.
9 : Not used.
8 : Not used.
7 : Not used.
6 : If the bit value is "1", "Pressure trip" function is appointed.
5 : If the bit value is "1", "tI<" function is appointed.
4 : If the bit value is "1", "I<" function is appointed.
3 : If the bit value is "1", "tI2>>" function is appointed.
2 : If the bit value is "1", "I2>>" function is appointed.
1 : If the bit value is "1", "I2>" function is appointed.
(Least Significant Bit) 0 : If the bit value is "1", "CB Alarm" function is appointed.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
led_text_2	524	4 bytes	Texts for virtual LEDs no's 5 to 8 to be displayed on CPM 311 menus.	R/W	640034342	0	-	-	↙

Each byte of the parameter defines the text to be displayed for the relevant virtual LED. The most significant value of the parameter is for LED9, while the least significant byte is for LED12. The definitions valid for each of the byte are given below.

Value	Display
0	: I>
1	: tI>
2	: I>>
3	: tI>>
4	: I>>>
5	: tI>>>
6	: Ie>
7	: tIe>
8	: Ie>>
9	: tIe>>
10	: Ie>>>
11	: tIe>>>
12	: Thermal Trip
13	: Broken Conductor
14	: CB failure
15	: tI2>
16	: 1st input
17	: 2nd input
18	: 3rd input
19	: 4th input

Value	Display
20	: 5th input
21	: 6th input
22	: 7th input
23	: tAux 1
24	: tAux 2
25	: CLP in progress
26	: ARCL in progress
27	: ARCL locked
28	: BUCH.Alarm
29	: BUCH.trip
30	: TEMP.Alarm
31	: TEMP.trip
32	: CB Alarm
33	: I2>
34	: I2>>
35	: tI2>>
36	: I<
37	: tI<
38	: Pressure trip

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
led_settings_4	528	4 bytes	Group 1 functions that are appointed to LED9.	R/W	231	0	-	-	↙
led_settings_5	532	4 bytes	Group 1 functions that are appointed to LED10.	R/W	231	0	-	-	↙
led_settings_6	536	4 bytes	Group 1 functions that are appointed to LED11.	R/W	231	0	-	-	↙
led_settings_7	540	4 bytes	Group 1 functions that are appointed to LED12.	R/W	231	0	-	-	↙

(Most Significant Bit) 31 : If the bit value is "1", "tI2>" function is appointed.
30 : If the bit value is "1", "CB Failure" function is appointed.
29 : If the bit value is "1", "%I2/I1" function is appointed.
28 : If the bit value is "1", "Thermal Trip" function is appointed.
27 : If the bit value is "1", "tIe>>>" function is appointed.
26 : If the bit value is "1", "Ie>>>" function is appointed.
25 : If the bit value is "1", "tIe>>" function is appointed.
24 : If the bit value is "1", "Ie>>" function is appointed.
23 : If the bit value is "1", "tIe>" function is appointed.
22 : If the bit value is "1", "Ie>" function is appointed.
21 : If the bit value is "1", "tI>>>" function is appointed.
20 : If the bit value is "1", "I>>>" function is appointed.
19 : If the bit value is "1", "tI>>" function is appointed.
18 : If the bit value is "1", "I>>" function is appointed.
17 : If the bit value is "1", "tI>" function is appointed.
16 : If the bit value is "1", "I>" function is appointed.
15 : If the bit value is "1", "Temperature Trip" function is appointed.
14 : If the bit value is "1", "Temperature Alarm" function is appointed.
13 : If the bit value is "1", "Buchholz Trip" function is appointed.
12 : If the bit value is "1", "Buchholz Alarm" function is appointed.
11 : If the bit value is "1", "Auto-reclose Locked" function is appointed.
10 : If the bit value is "1", "Auto-reclose Running" function is appointed.
9 : If the bit value is "1", "Cold Load Pickup Running" function is appointed.
8 : If the bit value is "1", "2nd Auxiliary Timer Running" function is appointed.
7 : If the bit value is "1", "1st Auxiliary Timer Running" function is appointed.
6 : If the bit value is "1", "7th input position" is appointed.
5 : If the bit value is "1", "6th input position" is appointed.
4 : If the bit value is "1", "5th input position" is appointed.
3 : If the bit value is "1", "4th input position" is appointed.

2 : If the bit value is "1", "3rd input position" is appointed.
1 : If the bit value is "1", "2nd input position" is appointed.
(Least Significant Bit) 0 : If the bit value is "1", "1st input position" is appointed.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
led_settings_2_4	544	2 bytes	Group 2 functions that are appointed to LED9.	R/W	64	0	-	-	↙
led_settings_2_5	546	2 bytes	Group 2 functions that are appointed to LED10.	R/W	64	0	-	-	↙
led_settings_2_6	548	2 bytes	Group 2 functions that are appointed to LED11.	R/W	64	0	-	-	↙
led_settings_2_7	550	2 bytes	Group 2 functions that are appointed to LED12.	R/W	64	0	-	-	↙

(Most Significant Bit) 15 : Not used.
14 : Not used.
13 : Not used.
12 : Not used.
11 : Not used.
10 : Not used.
9 : Not used.
8 : Not used.
7 : Not used.
6 : If the bit value is "1", "Pressure trip" function is appointed.
5 : If the bit value is "1", "tI<" function is appointed.
4 : If the bit value is "1", "I<" function is appointed.
3 : If the bit value is "1", "tI2>>" function is appointed.
2 : If the bit value is "1", "I2>>" function is appointed.
1 : If the bit value is "1", "I2>" function is appointed.
(Least Significant Bit) 0 : If the bit value is "1", "CB Alarm" function is appointed.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IURMS	600	2 bytes	Phase R current RMS value.	R	65535	0	-	-	↙

The value of the most significant byte of parameter no.625	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IVRMS	601	2 bytes	Phase S current RMS value.	R	65535	0	-	-	↙

The value of the least significant byte of parameter no.625	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IWRMS	602	2 bytes	Phase T current RMS value.	R	65535	0	-	-	↙

The value of the most significant byte of parameter no.626	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IERMS	603	2 bytes	Earth current RMS value.	R	65535	0	-	-	↙

The value of the least significant byte of parameter no.626	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IUH_1	604	2 bytes	Phase R current fundamental component value.	R	65535	0	-	-	↙

The value of the most significant byte of parameter no.627	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IVH_1	605	2 bytes	Phase S current fundamental component value.	R	65535	0	-	-	↙

The value of the least significant byte of parameter no.627	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IWH_1	606	2 bytes	Phase T current fundamental component value.	R	65535	0	-	-	↙

The value of the most significant byte of parameter no.628	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IEH_1	607	2 bytes	Earth current fundamental component value.	R	65535	0	-	-	↙

The value of the least significant byte of parameter no.628	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
DSP_I1	608	2 bytes	Positive sequence current value.	R	65535	0	-	-	↙

The value of the most significant byte of parameter no.637	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
DSP_I2	609	2 bytes	Negative sequence current value.	R	65535	0	-	-	↙

The value of the least significant byte of parameter no.637	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
SYS_HOUR / SYS_MIN	616	2 bytes	Hour and minute value of real time clock.	R	-	-	-	-	↙

The most significant byte of the parameter defines the real-time hour, while the least significant byte of the parameter defines the real-time minute.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
SYS_SECOND / SYS_DATE	617	2 bytes	Second and day value of real time clock.	R	-	-	-	-	↙

The most significant byte of the parameter defines the real-time second, while the least significant byte of the parameter defines the real-time day.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
SYS_MONTH / SYS_YEAR	618	2 bytes	Month and year value of real time clock.	R	-	-	-	-	↙

The most significant byte of the parameter defines the real-time month, while the least significant byte of the parameter defines the real-time year.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
INPUT_STATUS / uPSD OUTPUT STATUS	620	2 bytes	Input and output status information.	R	-	-	-	-	↙

The most significant byte of the parameter defines the relevant input state information, while the least significant byte of the parameter defines the relevant output state information

INPUT_STATUS Bit Descriptions

(Most Significant Bit) 7 : Not used.
6 : If the bit value is "1", 7th input is active.
5 : If the bit value is "1", 6th input is active.
4 : If the bit value is "1", 5th input is active.
3 : If the bit value is "1", 4th input is active.
2 : If the bit value is "1", 3rd input is active.
1 : If the bit value is "1", 2nd input is active.
(Least Significant Bit) 0 : If the bit value is "1", 1st input is active.

µPSD OUTPUT STATUS Bit Descriptions

(Most Significant Bit) 7 : If the bit value is "1", TRIP relay output is active.
6 : If the bit value is "1", WD relay output is active.
5 : If the bit value is "1", 6th output is active.
4 : If the bit value is "1", 5th output is active.
3 : If the bit value is "1", 4th output is active.
2 : If the bit value is "1", 3rd output is active.
1 : If the bit value is "1", 2nd output is active.
(Least Significant Bit) 0 : If the bit value is "1", 1st output is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
LED_OUT_STATUS / LED_FINAL_STATUS	621	2 bytes	LED status information.	R	-	-	-	-	↙

The most significant byte of the parameter defines the state of the 4 physical LEDs, while the least significant byte of the parameter defines the state of the first 4 virtual LEDs.

LED_OUT_STATUS Bit Descriptions

(Most Significant Bit) 7 : Not used.
6 : Not used.
5 : Not used.

4 : Not used.
3 : If the bit value is "1", DC-On LED is active.
2 : If the bit value is "1", TRIP LED is active.
1 : Not used.
(Least Significant Bit) 0 : If the bit value is "1", ALARM LED is active.

LED_FINAL_STATUS Bit Descriptions

(Most Significant Bit) 7 : If the bit value is "1", LED8 is active.
6 : If the bit value is "1", LED7 is active.
5 : If the bit value is "1", LED6 is active.
4 : If the bit value is "1", LED5 is active.
3 : Not used.
2 : Not used.
1 : Not used.
(Least Significant Bit) 0 : Not used.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
R_RMS_RANGE/S_RMS_RANGE	625	2 bytes	R and S phases RMS current display format.	R	-	-	-	-	↙

The most significant byte of the parameter defines the unit of the measured RMS value of phase R, while the least significant byte defines the unit of the measured RMS value of phase S. The table below explains the configuration of a byte.

Value	Current Display Format	Current Unit
0	X.XX	A
1	X.X	A
2	X.XXX	kA
3	X.XXX	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
T_RMS_RANGE/N_RMS_RANGE	626	2 bytes	Phase T and earth RMS current display format.	R	-	-	-	-	↙

The most significant byte of the parameter defines the unit of the measured RMS value of phase T, while the least significant byte defines the unit of the measured RMS value of the neutral. The table below explains the configuration of a byte.

Value	Current Display Format	Current Unit
0	X.XX	A
1	X.X	A
2	X.XXX	kA

3	X.XXX	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
R_HAR_RANGE/S_HAR_RANGE	627	2 bytes	R and S phases fundamental component current display format.	R	-	-	-	-	↙

The most significant byte of the parameter defines the unit of the measured fundamental harmonic value of phase R, while the least significant byte defines the unit of the measured fundamental harmonic value of phase S. The table below explains the configuration of a byte.

Value	Current Display Format	Current Unit
0	X.XX	A
1	X.X	A
2	X.XXX	kA
3	X.XXX	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
T_HAR_RANGE/N_HAR_RANGE	628	2 bytes	Phase T and earth fundamental component current display format.	R	-	-	-	-	↙

The most significant byte of the parameter defines the unit of the measured fundamental harmonic value of phase T, while the least significant byte defines the unit of the measured fundamental harmonic value of the neutral. The table below explains the configuration of a byte.

Value	Current Display Format	Current Unit
0	X.XX	A
1	X.X	A
2	X.XXX	kA
3	X.XXX	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
R_MAX_RMS_range/ S_MAX_RMS_range	629	2 bytes	R and S phases max. RMS current display format.	R	-	-	-	-	↙

The most significant byte of the parameter defines the unit of the measured MAX RMS value of phase R, while the least significant byte defines the unit of the measured MAX RMS value of phase S. The table below explains the configuration of a byte.

Value	Current Display Format	Current Unit
0	X.XX	A
1	X.X	A
2	X.XXX	kA
3	X.XXX	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
T_MAX_RMS_range/ N_MAX_RMS_range	630	2 bytes	Phase T and earth max. RMS current display format.	R	-	-	-	-	↙

The most significant byte of the parameter defines the unit of the measured MAX RMS value of phase T, while the least significant byte defines the unit of the measured MAX RMS value of the neutral. The table below explains the configuration of a byte.

Value	Current Display Format	Current Unit
0	X.XX	A
1	X.X	A
2	X.XXX	kA
3	X.XXX	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I_1_RANGE/ I_2_RANGE	637	2 bytes	Positive and negative sequence current display format.	R	-	-	-	-	↙

The most significant byte of the parameter defines the unit of the measured positive sequence value, while the least significant byte defines the unit of the measured negative sequence value. The table below explains the configuration of a byte.

Value	Current Display Format	Current Unit
0	X.XX	A
1	X.X	A
2	X.XXX	kA
3	X.XXX	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Protection_status_G2	640	2 bytes	2nd settings group activated protection functions information.	R/W	38911	0	-	-	↙

(Most Significant Bit) 15 : If the bit value is "1", "Auto-reclose" is active.
14 : Not used.
13 : Not used.
12 : If the bit value is "1", "CB Failure" is active.
11 : Not used.
10 : If the bit value is "1", %(I2/I1)> (Broken conductor protection) is active.
9 : If the bit value is "1", thermal overload protection is active.
8 : If the bit value is "1", I2>> (Negative sequence 2nd threshold protection) is active.
7 : If the bit value is "1", I2> (Negative sequence 1st threshold protection) is active.
6 : If the bit value is "1", Ie>>> (Earth overcurrent 3rd threshold protection) is active.
5 : If the bit value is "1", Ie>> (Earth overcurrent 2nd threshold protection) is active.

4 : If the bit value is "1", Ie> (Earth overcurrent 1st threshold protection) is active.
3 : If the bit value is "1", I< (Phase undercurrent protection) is active.
2 : If the bit value is "1", I>>> (Phase overcurrent 3rd threshold protection) is active.
1 : If the bit value is "1", I>> (Phase overcurrent 2nd threshold protection) is active.
(Least Significant Bit) 0 : If the bit value is "1", I> (Phase overcurrent 1st threshold protection) is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
reclose_cycles_selections_G2	642 ... 648	8 bytes	2nd settings group protection functions to be available for auto-reclosing.	R/W	255	0	-	-	↙

Each byte of the parameter represents a function, while each parameter value determines the auto-reclosing permissions for the 2cd settings group. Details are given below.

Parameter	Function
1st Byte	: tI>
2nd Byte	: tI>>
3rd Byte	: tI>>>
4th Byte	: tIe>
5th Byte	: tIe>>
6th Byte	: tIe>>>
7th Byte	: Auxiliary ti
8.Byte	: Auxiliary ti

Bit Descriptions for Each Byte

(Most Significant Bit) 7 : If "1", trip is active for 4th cycle of ARCL.
6 : If "1", trip is active for 3rd cycle of ARCL..
5 : If "1", trip is active for 2nd cycle of ARCL..
4 : If "1", trip is active for 1st cycle of ARCL.
3 : If "1", trip is active for 4th cycle of ARCL.
2 : If "1", trip is active for 3rd cycle of ARCL.
1 : If "1", trip is active for 2nd cycle of ARCL.
(Least Significant Bit) 0 : If "1", trip is active for 1st cycle of ARCL.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I> Delay Type_G2	672	2 bytes	2nd settings group I> (Phase overcurrent 1st threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 2nd settings group for I> (Phase overcurrent 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON

12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>Delay_time_G2	675	2 bytes	2nd settings group I> (Phase overcurrent 1st threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I> Delay Type_G2 (no.672) is 0 (DMT), I>Delay_time_G2 (no.675) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I> Delay Type_G2 (no.672) is not 0 (DMT), I>Delay_time_G2 (no.675) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>T_reset _G2	677	2 bytes	2nd settings group I> (Phase overcurrent 1st threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I> Reset_Type_G2 (no.679) is 0 (DMT), I>T_reset _G2 (no.677) is described as follows.
Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I> Reset_Type_G2 (no.679) is not 0 (DMT), I>T_reset _G2 (no.677) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I> Reset_Type_G2	679	2 bytes	2nd settings group I> (Phase overcurrent 1st threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 2nd settings group for I> (Phase overcurrent 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>> Delay Type_G2	682	2 bytes	2nd settings group I>> (Phase overcurrent 2nd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 2nd settings group for I>> (Phase overcurrent 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>Delay_time_G2	685	2 bytes	2nd settings group I>> (Phase overcurrent 2nd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I>> Delay Type_G2 (no.682) is 0 (DMT), I>>Delay_time_G2 (no.685) is described as follows.

Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I>> Delay Type_G2 (no.682) is not 0 (DMT), I>>Delay_time_G2 (no.685) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>T_reset _G2	687	2 bytes	2nd settings group I>> (Phase overcurrent 2nd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I>> Reset_Type_G2 (no.689) is 0 (DMT), I>>T_reset _G2 (no.687) is described as follows.

Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I>> Reset_Type_G2 (no.689) is not 0 (DMT), I>>T_reset _G2 (no.687) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>> Reset_Type_G2	689	2 bytes	2nd settings group I>> (Phase overcurrent 2nd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 2nd settings group for I>> (Phase overcurrent 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI

5 : IEC LTI
6 : SC CO2
7 : IEEE MI
8 : SD CO8
9 : IEEE VI
10 : IEEE EI
11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>> Delay Type_G2	692	2 bytes	2nd settings group I>>> (Phase overcurrent 3rd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 2nd settings group for I>>> (Phase overcurrent 3rd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>>Delay_time_G2	695	2 bytes	2nd settings group I>>> (Phase overcurrent 3rd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I>>> Delay Type_G2 (no.692) is 0 (DMT), I>>>Delay_time_G2 (no.695) is described as follows.

Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I>>> Delay Type_G2 (no.692) is not 0 (DMT), I>>>Delay_time_G2 (no.695) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>>T_reset _G2	697	2 bytes	2nd settings group I>>> (Phase overcurrent 3rd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I>>> Reset_Type_G2 (no.699) is 0 (DMT), I>>>T_reset _G2 (no.697) is described as follows.

Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I>>> Reset_Type_G2 (no.699) is not 0 (DMT), I>>>T_reset _G2 (no.697) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I>>> Reset_Type_G1	699	2 bytes	2nd settings group I>>> (Phase overcurrent 3rd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 2nd settings group for I>>> (Phase overcurrent 3rd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI

11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie> Delay Type_G2	712	2 bytes	2nd settings group Ie> (Earth overcurrent 1st threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 2nd settings group for Ie> (Earth overcurrent 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>Delay_time_G1	715	2 bytes	2nd settings group Ie> (Earth overcurrent 1st threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of Ie> Delay Type_G2 (no.713) is 0 (DMT), Ie>Delay_time_G2 (no.715) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie> Delay Type_G2 (no.713) is not 0 (DMT), Ie>Delay_time_G2 (no.715) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>T_reset _G1	717	2 bytes	2nd settings group Ie> (Earth overcurrent 1st threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of Ie> Reset_Type_G2 (no.719) is 0 (DMT), Ie>T_reset _G2 (no.717) is described as follows.

Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie> Reset_Type_G2 (no.719) is not 0 (DMT), Ie>T_reset _G2 (no.717) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie> Reset_Type_G2	719	2 bytes	2nd settings group Ie> (Earth overcurrent 1st threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 2nd settings group for Ie> (Earth overcurrent 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>> Delay Type_G2	722	2 bytes	2nd settings group Ie>> (Earth overcurrent 2nd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 2nd settings group for Ie>> (Earth overcurrent 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>Delay_time_G2	725	2 bytes	2nd settings group Ie>> (Earth overcurrent 2nd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of Ie>> Delay Type_G2 (no.722) is 0 (DMT), Ie>>Delay_time_G2 (no.725) is described as follows.

Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie>> Delay Type_G2 (no.722) is not 0 (DMT), Ie>>Delay_time_G2 (no.725) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>T_reset _G2	727	2 bytes	2nd settings group Ie>> (Earth overcurrent 2nd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of Ie>> Reset_Type_G2 (no.729) is 0 (DMT), Ie>>T_reset _G2 (no.727) is described as follows.

Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie>> Reset_Type_G2 (no.729) is not 0 (DMT), Ie>>T_reset _G2 (no.727) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>> Reset_Type_G2	729	2 bytes	2nd settings group Ie>> (Earth overcurrent 2nd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 2nd settings group for Ie>> (Earth overcurrent 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>> Delay Type_G2	732	2 bytes	2nd settings group Ie>>> (Earth overcurrent 3rd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 2nd settings group for Ie>>> (Earth overcurrent 3rd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>>Delay_time_G2	735	2 bytes	2nd settings group Ie>>> (Earth overcurrent 3rd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of Ie>>> Delay Type_G2 (no.732) is 0 (DMT), Ie>>>Delay_time_G2 (no.735) is described as follows.

Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie>>> Delay Type_G2 (no.732) is not 0 (DMT), Ie>>>Delay_time_G2 (no.735) is described as follows.

Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>>T_reset _G2	737	2 bytes	2nd settings group Ie>>> (Earth overcurrent 3rd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of Ie>>> Reset_Type_G2 (no.739) is 0 (DMT), Ie>>>T_reset _G2 (no.737) is described as follows.

Max value : 10000

Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of Ie>>> Reset_Type_G2 (no.739) is not 0 (DMT), Ie>>>T_reset _G2 (no.737) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Ie>>> Reset_Type_G2	739	2 bytes	2nd settings group Ie>>> (Earth overcurrent 3rd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 2nd settings group for Ie>>> (Earth overcurrent 3rd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2> Delay Type_G2	742	2 bytes	2nd settings group I2> (Negative sequence 1st threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 2nd settings group for I2> (Negative sequence 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI

3 : IEC VI
4 : IEC EI
5 : IEC LTI
6 : SC CO2
7 : IEEE MI
8 : SD CO8
9 : IEEE VI
10 : IEEE EI
11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>Delay_time_G2	745	2 bytes	2nd settings group I2> (Negative sequence 1st threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I2> Delay Type_G2 (no.742) is 0 (DMT), I2>Delay_time_G2 (no.745) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I2> Delay Type_G2 (no.742) is not 0 (DMT), I2>Delay_time_G2 (no.745) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>T_reset _G2	747	2 bytes	2nd settings group I2> (Negative sequence 1st threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I2> Reset_Type_G2 (no.749) is 0 (DMT), I2>T_reset _G2 (no.747) is described as follows.
Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I2> Reset_Type_G2 (no.749) is not 0 (DMT), I2>T_reset _G2 (no.747) is described as follows.
Max value : 3200

Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2> Reset_Type_G2	749	2 bytes	2nd settings group I2> (Negative sequence 1st threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 2nd settings group for I2> (Negative sequence 1st threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>> Delay Type_G2	752	2 bytes	2nd settings group I2>> (Negative sequence 2nd threshold) delay curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the delay curve type for the 2nd settings group for I2>> (Negative sequence 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8

9 : IEEE VI
10 : IEEE EI
11 : SA SEMICON
12 : SE CO-C3H
13 : SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>>Delay_time_G2	755	2 bytes	2nd settings group I2>> (Negative sequence 2nd threshold) trip time delay.	R/W	-	-	-	-	↙

If the parameter value of I2>> Delay Type_G2 (no.752) is 0 (DMT), I2>>Delay_time_G2 (no.755) is described as follows.
Max value : 15000
Min value : 1
Multiplier : 0.01
Unit : Seconds

If the parameter value of I2>> Delay Type_G2 (no.752) is not 0 (DMT), I2>>Delay_time_G2 (no.755) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
I2>>T_reset _G2	757	2 bytes	2nd settings group I2>> (Negative sequence 2nd threshold) reset time value.	R/W	-	-	-	-	↙

If the parameter value of I2>> Reset_Type_G2 (no.759) is 0 (DMT), I2>>T_reset _G2 (no.757) is described as follows.
Max value : 10000
Min value : 4
Multiplier : 0.01
Unit : Seconds

If the parameter value of I2>> Reset_Type_G2 (no.759) is not 0 (DMT), I2>>T_reset _G2 (no.757) is described as follows.
Max value : 3200
Min value : 25
Multiplier : 0.001
Unit : None

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details

I2>> Reset_Type_G2	759	2 bytes	2nd settings group I2>> (Negative sequence 2nd threshold) reset curve type value.	R/W	3328	0	-	-	↙

The most significant byte of the parameter defines the reset curve type for the 2nd settings group for I2>> (Negative sequence 2nd threshold). Details are given below.

Value	Delay Curve Type
0	: DMT
1	: IEC STI
2	: IEC SI
3	: IEC VI
4	: IEC EI
5	: IEC LTI
6	: SC CO2
7	: IEEE MI
8	: SD CO8
9	: IEEE VI
10	: IEEE EI
11	: SA SEMICON
12	: SE CO-C3H
13	: SB DI

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
IQ> Alarm%_G2	770	2 bytes	2nd settings group IΘ> (Thermal overload protection) heating percentage value to alarm.	R/W	456	50	%	1	↙

The most significant byte of the parameter defines if IQ> (Thermal overload protection) alarm is active for the second settings group or not. If the most significant byte is "0", Thermal Overload Alarm is passive, if it is "1", Thermal Overload Alarm is active.

The least significant byte of the parameter defines the level of IQ> (Thermal overload protection) alarming level in percentage.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
CH_SYS_HOUR / CH_SYS_MIN	4097	2 bytes	Parameter to change the hour and minute values of the real time clock.	W	-	-	-	-	↙

The most significant byte of the parameter modifies the real-time hour, while the least significant byte of the parameter modifies the real-time minute.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
CH_SYS_SECOND / CH_SYS_DATE	4098	2 bytes	Parameter to change the second and day values of the real time clock.	W	-	-	-	-	↙

The most significant byte of the parameter modifies the real-time second, while the least significant byte of the parameter modifies the real-time day.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
CH_SYS_MONTH / CH_SYS_YEAR	4099	2 bytes	Parameter to change the month and year values of the real time clock.	W	-	-	-	-	↙

The most significant byte of the parameter modifies the real-time month, while the least significant byte of the parameter modifies the real-time year.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
DELETE_ALARMS	4103	2 bytes	Control that deletes the active alarms.	W	-	-	-	-	↙

If the parameter value is set to 255, all stored alarms are erased; if the parameter value is set between 0 and 49, the alarms with IDs within the set range are erased.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_TETA	4104	2 bytes	Control that resets the thermal monitor.	W	-	-	-	-	↙

If the parameter value is set to 0, the thermal monitor value is reset to 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
ORDER_RELAYS/PULSE_TIME	4105	2 bytes	Parameters that control the output relays.	W	-	-	-	-	↙

The most significant byte of the parameter defines which output is to be controlled; while the least significant byte of the parameter defines the duration of control.

ORDER_RELAYS Bit Descriptions

(Most Significant Bit) 7 : Not used.
6 : Not used.
5 : If "1", 1st relay is active.
4 : If "1", 2nd relay is active.
3 : If "1", 3rd relay is active.
2 : If "1", 4th relay is active.
1 : If "1", 5th relay is active.
(Least Significant Bit) 0 : If "1", 6th relay is active.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
CB_ON_OFF	4106	2 bytes	Parameters that controls the CB remotely.	W	-	-	-	-	↙

If the parameter value is set to 0, the CB is closed; while the CB is tripped when the value is set to 1.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_CB_OPEN_NUMARATOR	4107	2 bytes	Control that resets CB trip numerator.	W	-	-	-	-	↙

The trip numerator of the CB is reset to 0 if the parameter value is modified to 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_ΣA_R	4108	2 bytes	Control that resets evaluated total amperes of Phase R.	W	-	-	-	-	↙

The evaluated total amperes (ΣA) value for phase R is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_ΣA_S	4109	2 bytes	Control that resets evaluated total amperes of Phase S.	W	-	-	-	-	↙

The evaluated total amperes (ΣA) value for phase S is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_ΣA_T	4110	2 bytes	Control that resets evaluated total amperes of Phase T.	W	-	-	-	-	↙

The evaluated total amperes (ΣA) value for phase T is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_ΣA2_R	4111	2 bytes	Control that resets evaluated total ampere-squares of Phase R.	W	-	-	-	-	↙

The evaluated total amperes-square (ΣA^2) value for phase R is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_ΣA2_S	4112	2 bytes	Control that resets evaluated total ampere-squares of Phase S.	W	-	-	-	-	↙

The evaluated total amperes-square (ΣA^2) value for phase S is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_ΣA2_T	4113	2 bytes	Control that resets evaluated total ampere-squares of Phase T.	W	-	-	-	-	↙

The evaluated total amperes-square (ΣA^2) value for phase T is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_AR_TOTAL_CYCLE	4114	2 bytes	Control that resets auto-recloser total cycles counter.	W	-	-	-	-	↙

The evaluated total number of ARCL cycles is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_1_CYCLE	4115	2 bytes	Control that resets auto-recloser 1st cycles counter.	W	-	-	-	-	↙

The evaluated total number of 1st cycle auto-reclosings is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details

RESET_2_CYCLE	4116	2 bytes	Control that resets auto-recloser 2nd cycles counter.	W	-	-	-	-	↙

The evaluated total number of 2nd cycle auto-reclosings is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_3_CYCLE	4117	2 bytes	Control that resets auto-recloser 3rd cycles counter.	W	-	-	-	-	↙

The evaluated total number of 3rd cycle auto-reclosings is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_4_CYCLE	4118	2 bytes	Control that resets auto-recloser 4th cycles counter.	W	-	-	-	-	↙

The evaluated total number of 4th cycle auto-reclosings is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
RESET_AR_BLOKE_NUM	4119	2 bytes	Control that resets auto-recloser blockage counter.	W	-	-	-	-	↙

The evaluated total number of auto-reclosing blockings is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
ALARM_HISTORY	4110 ... 4135	50 bytes	Keeps the recorded alarm information.	R	-	-	-	-	↙

Each byte of the parameter defines a recorded alarm. Alarms are sorted according to their recording ID number. If the byte value is 255, it means that there are no recorded alarms for that ID. If the byte value is different than 255, the alarm code for that value is evaluated as per the table below.

Alarm Code	Display	Alarm Code	Display	Alarm Code	Display
1	ARCL Successful	24	tI>>>T	48	tI<T
2	I<	25	tI>>>S	49	%I2/I1>
3	I2>>	26	tI>>>R	50	Output Relay Latched
4	I2>	27	tI>>T	51	Spring Failure
5	Ie>>>	28	tI>>S	52	CB Trip Time Error
6	Ie>>	29	tI>>R	53	CB Close Time Error
7	Ie>	30	tI>T	54	CB Numerator Error
8	I>>>T	31	tI>S	55	ΣA Alarm R
9	I>>>S	32	tI>R	56	ΣA Alarm S
10	I>>>R	33	Battery Low	57	ΣA Alarm T
11	I>>T	34	Temperature Trip	58	ΣA2 Alarm R
12	I>>S	35	Temperature Alarm	59	ΣA2 Alarm S
13	I>>R	36	Buchholz Trip	60	ΣA2 Alarm T
14	I>T	37	Buchholz Alarm	61	ARCL Settings Error
15	I>S	38	tAux2	62	Pressure Trip
16	I>R	39	tAux1		
17	tI<S	40	CB Alarm		

18	tI< R	41	t%(I2/I1)>		
19	tI2>>	42	CB Failure		
20	tI2>	44	Trip Circuit Supervision		
21	tIe>>>	45	ARCL Locked		
22	tIe>>	46	Thermal Trip		
23	tIe>	47	Thermal Alarm		

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Measure_cb_open_time	4159	2 bytes	Keeps the measured time for the latest CB trip.	R/W	0	0	s	0,01	↙

The measured value of the latest CB opening time is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
Measure_cb_close_time	4160	2 bytes	Keeps the measured time for the latest CB close.	R/W	0	0	s	0,01	↙

The measured value of the latest CB closing time is reset to 0 if the value of the parameter is modified as 0.

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
MAX_R_RMS	4161	2 bytes	Phase R current max. RMS value.	R	65535	0	-	-	↙

If the parameter value is set to 0, the measured MAX RMS value for Phase R is reset to 0. The parameter range and units are explained on the table below.

The value of the most significant byte of parameter no.	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
MAX_S_RMS	4162	2 bytes	Phase S current max. RMS value.	R	65535	0	-	-	↙

If the parameter value is set to 0, the measured MAX RMS value for Phase S is reset to 0. The parameter range and units are explained on the table below.

The value of the least significant byte of parameter no.	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
MAX_T_RMS	4163	2 bytes	Phase T current max. RMS value.	R	65535	0	-	-	↙

If the parameter value is set to 0, the measured MAX RMS value for Phase T is reset to 0. The parameter range and units are explained on the table below.

The value of the most significant byte of parameter no.630	Multiplier	Unit

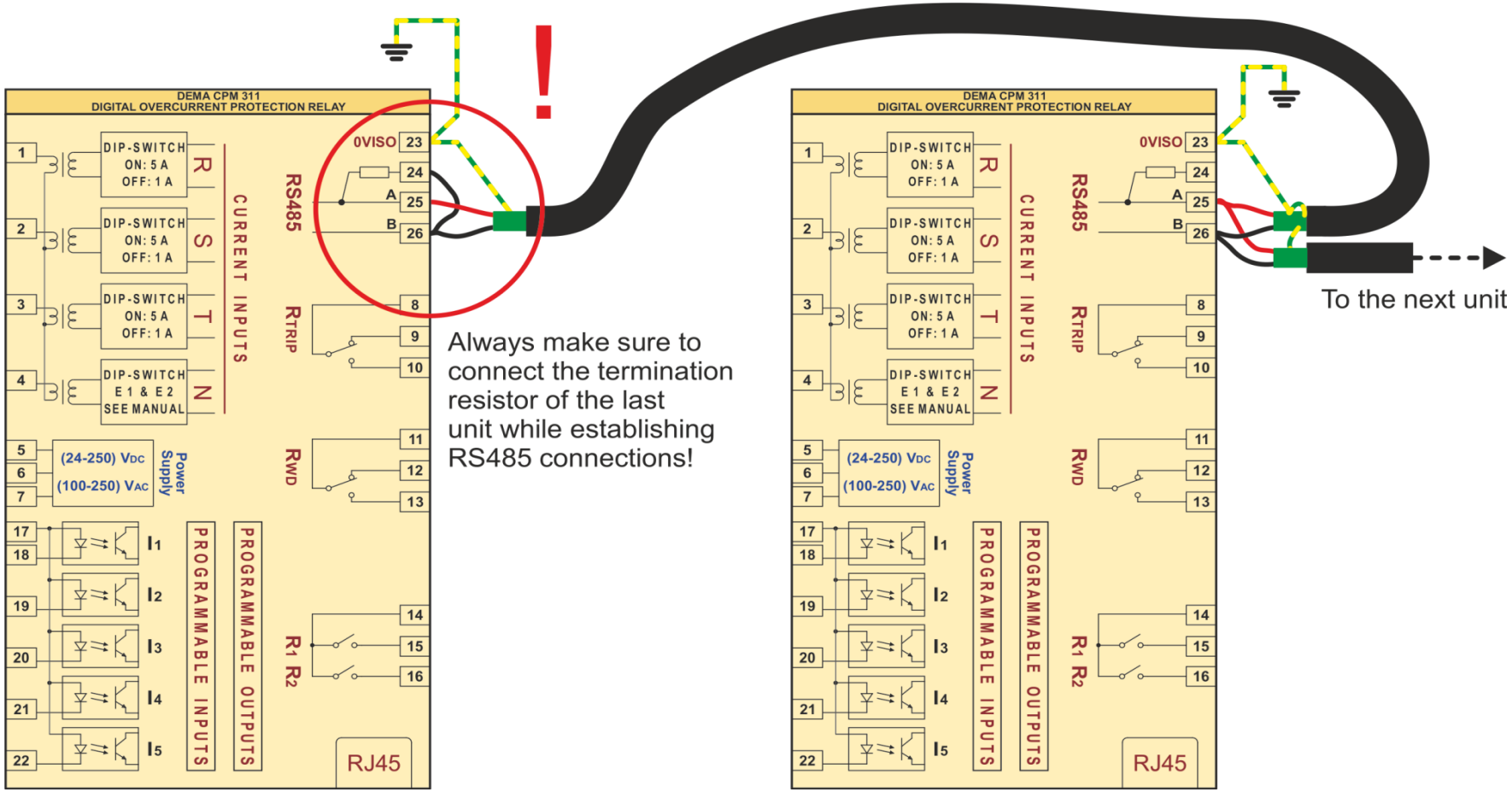
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

Parameter Name	Parameter No.	Length	Description	Type	Max.	Min.	Unit	Mult.	Details
MAX_N_RMS	4164	2 bytes	Earth current max. RMS value.	R	65535	0	-	-	↙

If the parameter value is set to 0, the measured MAX RMS value for neutral is reset to 0. The parameter range and units are explained on the table below.

The value of the least significant byte of parameter no.630	Multiplier	Unit
0	0,01	A
1	0,1	A
2	0,001	kA
3	0,001	MA

RS485 Cabling Schema



RS 485 Cabling Schema for DEMA CPM 311 Digital Overcurrent Protection Relay