

SE Mejillones - 23 kV / Paño E4 / SP.E4 - PAÑO E4

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1 General Device Settings

1.1 Group Device, General Settings; Group General

Group Device, General Settings; Group General

No.	Settings	Value	Group
0610	Fault Display on LED / LCD	Display Targets on every Pickup	All
0611	Spontaneous display of flt.annunciations	NO	All
0640	Start image Default Display	image 1	All
0620	Remote firmware update	Disabled	All
0700	GOOSE-Stop	NO	All
0702A	Fast GOOSE transmission	OFF	All
0618	Direct control of open/close buttons	YES	All
0710	Threshold Fill level 1 Event Log	70 %	All
0711	Threshold Fill level 2 Event Log	90 %	All
0713A	Hot Line Tag block control command	YES	All
0714A	Password timeout (HMI)	0 min	All
0715A	Fault current memory time	2,00 sec	All

## 2 Power System Data 1

### 2.1 Group Power System Data 1; Group Power System

*Group Power System Data 1; Group Power System*

No.	Settings	Value	Group
0214	Rated Frequency	50 Hz	All
0209	Phase Sequence	A B C	All
0276	Unit of temperature measurement	Degree Celsius	All
0201	CT Starpoint	towards Line	All
0280	Holmgreen conn. (for fast sum-i-monit.)	NO	All
0213	VT Connection, three-phase	Van, Vbn, Vcn	All
0215	Distance measurement unit	km	All

### 2.2 Group Power System Data 1; Group Prot.Op. quant.

*Group Power System Data 1; Group Prot.Op. quant.*

No.	Settings	Value	Group
0250A	50, 51 Time Overcurrent with 2ph. prot.	OFF	All
0613A	Ground Overcurrent protection with	3I0 (calculated)	All
0257A	Inverse elements pickup ratio	110%	All

### 2.3 Group Power System Data 1; Group CT's

*Group Power System Data 1; Group CT's*

No.	Settings	Value	Group
0204	CT Rated Primary Current	200 A	All
0205	CT Rated Secondary Current	5A	All
0217	Ignd-CT rated primary current	200 A	All
0218	Ignd-CT rated secondary current	5A	All
0340A	CT amplitude correction factor A	1,0000	All
0341A	CT amplitude correction factor B	1,0000	All
0342A	CT amplitude correction factor C	1,0000	All
0343A	CT amplitude correction factor IGND	1,0000	All
0337A	CT Phase terminal connection	A B C	All

2.4 Group Power System Data 1; Group VT's

Group Power System Data 1; Group VT's

No.	Settings	Value	Group
0202	Rated Primary Voltage	23,00 kV	All
0203	Rated Secondary Voltage (L-L)	115 V	All
0206A	Matching ratio Phase-VT To Open-Delta-VT	1,73	All
0333	Rated Primary Voltage Vx	23,00 kV	All
0325	Rated Secondary Voltage Vx	115 V	All
0344A	VT phase angle correction A	0,00 °	All
0357A	VT phase angle Correction B	0,00 °	All
0358A	VT phase angle Correction C	0,00 °	All
0345A	VT phase angle correction Vx	0,00 °	All
0346A	VT amplitude correction factor A	1,0000	All
0347A	VT amplitude correction factor B	1,0000	All
0348A	VT amplitude correction factor C	1,0000	All
0349A	VT amplitude correction factor Vx	1,0000	All
0338A	VT Phase terminal connection	A B C	All

2.5 Group Power System Data 1; Group Breaker

Group Power System Data 1; Group Breaker

No.	Settings	Value	Group
0210A	Minimum TRIP Command Duration	0,15 sec	All
0211A	Maximum Close Command Duration	1,00 sec	All
0212	Closed Breaker Min. Current Threshold	0,20 A	All

3 Settings groups

3.1 Group Power System Data 2; Group General

Group Power System Data 2; Group General

No.	Settings	Value	Group
1101	Measurem:FullScaleVoltage(Equipm.rating)	23,00 kV	A
1102	Measurem:FullScaleCurrent(Equipm.rating)	200 A	A
1108	P,Q operational measured values sign	not reversed	A
1109A	Line angle	40 °	A
1114A	Average power factor	0,90	A

3.2 Group 50/51 Phase/Ground Overcurrent; Group General

Group 50/51 Phase/Ground Overcurrent; Group General

No.	Settings	Value	Group
1201	50, 51 Phase Time Overcurrent	ON	A
1213A	Manual Close Mode	Inactive	A
1215A	50 Drop-Out Time Delay	0,00 sec	A
1301	50N, 51N Ground Time Overcurrent	ON	A
1313A	Manual Close Mode	Inactive	A
1315A	50N Drop-Out Time Delay	0,00 sec	A

3.3 Group 50/51 Phase/Ground Overcurrent; Group 50

Group 50/51 Phase/Ground Overcurrent; Group 50

No.	Settings	Value	Group
1219A	50-3 measurement of	Fundamental component	A
1216A	50-3 active	Always	A
1217	50-3 Pickup	100,00 A	A
1218	50-3 Time Delay	oo sec	A
1220A	50-2 measurement of	Fundamental component	A
1214A	50-2 active	Always	A
1202	50-2 Pickup	oo A	A
1203	50-2 Time Delay	oo sec	A



Group 50/51 Phase/Ground Overcurrent; Group 50(2)

No.	Settings	Value	Group
1221A	50-1 measurement of	Fundamental component	A
1204	50-1 Pickup	oo A	A
1205	50-1 Time Delay	oo sec	A
1272A	50 Hotline Tag measurement of	Fundamental component	A
1270	50 Hotline Tag Pickup	oo A	A
1271	50 Hotline Tag Time Delay	oo sec	A

### 3.4 Group 50/51 Phase/Ground Overcurrent; Group 51

Group 50/51 Phase/Ground Overcurrent; Group 51

No.	Settings	Value	Group
1222A	51 measurement of	Fundamental component	A
1207	51 Pickup	1,00 A	A
1208	51 Time Dial	0,68 sec	A
1210	Drop-out characteristic	Instantaneous	A
1211	IEC Curve	Extremely Inverse	A
1223	51V Voltage Influence	NO	A
1224	51V V< Threshold for Release Ip	50,0 V	A
1225A	Constant time adder 51	0,00 sec	A

### 3.5 Group 50/51 Phase/Ground Overcurrent; Group 50N

Group 50/51 Phase/Ground Overcurrent; Group 50N

No.	Settings	Value	Group
1319A	50N-3 measurement of	Fundamental component	A
1317	50N-3 Pickup	100,00 A	A
1318	50N-3 Time Delay	oo sec	A
1320A	50N-2 measurement of	Fundamental component	A
1302	50N-2 Pickup	oo A	A
1303	50N-2 Time Delay	oo sec	A
1321A	50N-1 measurement of	Fundamental component	A
1304	50N-1 Pickup	oo A	A
1305	50N-1 Time Delay	oo sec	A
1314A	50N-2 active	Always	A
1316A	50N-3 active	Always	A
1372A	50N Hotline Tag measurement of	Fundamental component	A



Group 50/51 Phase/Ground Overcurrent; Group 50N(2)

No.	Settings	Value	Group
1370	50N Hotline Tag Pickup	oo A	A
1371	50N Hotline Tag Time Delay	oo sec	A

3.6 Group 50/51 Phase/Ground Overcurrent; Group 51N

Group 50/51 Phase/Ground Overcurrent; Group 51N

No.	Settings	Value	Group
1322A	51N measurement of	Fundamental component	A
1307	51N Pickup	0,50 A	A
1308	51N Time Dial	0,18 sec	A
1310	Drop-Out Characteristic	Instantaneous	A
1311	IEC Curve	Normal Inverse	A
1325A	Constant time adder 51N	0,00 sec	A

3.7 Group Measurement Supervision; Group General

Group Measurement Supervision; Group General

No.	Settings	Value	Group
8101	Measurement Supervision	ON	A
5310	Block protection by 60VTS	YES	A
5501	46 Broken Conductor	OFF	A
5510	60VTS Voltage Transformer Supervision	OFF	A
5520	60CTS Current Transformer Supervision	OFF	A

3.8 Group Measurement Supervision; Group MeasSupervision

Group Measurement Supervision; Group MeasSupervision

No.	Settings	Value	Group
8102	Voltage Threshold for Balance Monitoring	50 V	A
8103	Balance Factor for Voltage Monitor	0,75	A
8104	Current Threshold for Balance Monitoring	2,50 A	A
8105	Balance Factor for Current Monitor	0,50	A



### 3.9 Group Measurement Supervision; Group 46BC Monitoring

Group Measurement Supervision; Group 46BC Monitoring

No.	Settings	Value	Group
5502	46BC Delay Time	2,00 sec	A
5503	Current Factor for Broken Conductor	0,10	A
5504	Voltage Factor for Broken Conductor	0,10	A
5505	Measurement location of CT	Measurement location at Direction 1	A
5506	Measurement location of VT	Measurement location at Direction 1	A

### 3.10 Group Measurement Supervision; Group 60VT Supervis.

Group Measurement Supervision; Group 60VT Supervis.

No.	Settings	Value	Group
5511	60VTS Threshold V2	7 V	A
5513	60VTS Threshold I2	0,50 A	A
5515	60VTS Threshold I1 load	0,50 A	A
5516	60VTS Threshold I1 fault	50,00 A	A
5517	60VTS Threshold V1	15 V	A
5518	60VTS Time Delay	10,00 sec	A

### 3.11 Group Measurement Supervision; Group 60CT Supervis.

Group Measurement Supervision; Group 60CT Supervis.

No.	Settings	Value	Group
5521	60CTS Threshold V2	7 V	A
5522	60CTS Threshold I2	0,20 A	A
5523	60CTS Time Delay	10,00 sec	A



3.12 Group 79M Auto Reclosing; Group General

Group 79M Auto Reclosing; Group General

No.	Settings	Value	Group
7101	79 Auto-Reclose Function	OFF	A
7103	AR blocking duration after manual close	1,00 sec	A
7105	79 Auto Reclosing reset time	30,00 sec	A
7108	Safety Time until 79 is ready	0,50 sec	A
7113	Check circuit breaker before AR?	Check each cycle	A
7114	AR start-signal monitoring time	0,50 sec	A
7115	Circuit Breaker (CB) Supervision Time	3,00 sec	A
7116	Maximum dead time extension	100,00 sec	A
7117	Action time	oo sec	A
7118	Maximum Time Delay of Dead-Time Start	1,0 sec	A
7135	Number of Reclosing Cycles Ground	1	A
7136	Number of Reclosing Cycles Phase	1	A
7137	Close command via control device	<none>	A
7139	External 25 synchronisation	NO	A
7140	ZSC - Zone sequence coordination	OFF	A
7165	3 Pole Pickup blocks 79	NO	A

3.13 Group 79M Auto Reclosing; Group Configuration

Group 79M Auto Reclosing; Group Configuration

No.	Settings	Value	Group
7150	50-1	No influence	A
7151	50N-1	No influence	A
7152	50-2	No influence	A
7153	50N-2	No influence	A
7166	50-3	No influence	A
7167	50N-3	No influence	A
7154	51	Starts 79	A
7155	51N	Starts 79	A
7164	Binary Input	No influence	A

## 3.14 Group 79M Auto Reclosing; Group 1. cycle

Group 79M Auto Reclosing; Group 1. cycle

No.	Settings	Value	Group
7127	Dead Time 1: Phase Fault	5,00 sec	A
7128	Dead Time 1: Ground Fault	5,00 sec	A
7200	before 1. Cycle: 50-1	Set value, T=T	A
7201	before 1. Cycle: 50N-1	Set value, T=T	A
7202	before 1. Cycle: 50-2	Set value, T=T	A
7203	before 1. Cycle: 50N-2	Set value, T=T	A
7248	before 1. Cycle: 50-3	Set value, T=T	A
7249	before 1. Cycle: 50N-3	Set value, T=T	A
7204	before 1. Cycle: 51	Set value, T=T	A
7205	before 1. Cycle: 51N	Set value, T=T	A

## 3.15 Group 79M Auto Reclosing; Group 2. cycle

Group 79M Auto Reclosing; Group 2. cycle

No.	Settings	Value	Group
7129	Dead Time 2: Phase Fault	0,50 sec	A
7130	Dead Time 2: Ground Fault	0,50 sec	A
7212	before 2. Cycle: 50-1	Set value, T=T	A
7213	before 2. Cycle: 50N-1	Set value, T=T	A
7214	before 2. Cycle: 50-2	Set value, T=T	A
7215	before 2. Cycle: 50N-2	Set value, T=T	A
7250	before 2. Cycle: 50-3	Set value, T=T	A
7251	before 2. Cycle: 50N-3	Set value, T=T	A
7216	before 2. Cycle: 51	Set value, T=T	A
7217	before 2. Cycle: 51N	Set value, T=T	A
7260	51 IEC Curve before 2.cycle	Normal Inverse	A
7274	51N IEC Curve before 2.cycle	Normal Inverse	A

## 3.16 Group 79M Auto Reclosing; Group 3. cycle

Group 79M Auto Reclosing; Group 3. cycle

No.	Settings	Value	Group
7131	Dead Time 3: Phase Fault	0,50 sec	A
7132	Dead Time 3: Ground Fault	0,50 sec	A

Group 79M Auto Reclosing; Group 3. cycle(2)

No.	Settings	Value	Group
7224	before 3. Cycle: 50-1	Set value, T=T	A
7225	before 3. Cycle: 50N-1	Set value, T=T	A
7226	before 3. Cycle: 50-2	Set value, T=T	A
7227	before 3. Cycle: 50N-2	Set value, T=T	A
7252	before 3. Cycle: 50-3	Set value, T=T	A
7253	before 3. Cycle: 50N-3	Set value, T=T	A
7228	before 3. Cycle: 51	Set value, T=T	A
7229	before 3. Cycle: 51N	Set value, T=T	A
7280	51 IEC Curve before 3.cycle	Normal Inverse	A
7283	51N IEC Curve before 3.cycle	Normal Inverse	A

3.17 Group 79M Auto Reclosing; Group 4. to 9. cycle

Group 79M Auto Reclosing; Group 4. to 9. cycle

No.	Settings	Value	Group
7133	Dead Time 4: Phase Fault	0,50 sec	A
7134	Dead Time 4: Ground Fault	0,50 sec	A
7236	before 4. Cycle: 50-1	Set value, T=T	A
7237	before 4. Cycle: 50N-1	Set value, T=T	A
7238	before 4. Cycle: 50-2	Set value, T=T	A
7239	before 4. Cycle: 50N-2	Set value, T=T	A
7254	before 4. Cycle: 50-3	Set value, T=T	A
7255	before 4. Cycle: 50N-3	Set value, T=T	A
7240	before 4. Cycle: 51	Set value, T=T	A
7241	before 4. Cycle: 51N	Set value, T=T	A
7300	51 IEC Curve before 4.cycle	Normal Inverse	A
7303	51N IEC Curve before 4.cycle	Normal Inverse	A

3.18 Group 50BF Breaker Failure; Group General

Group 50BF Breaker Failure; Group General

No.	Settings	Value	Group
7001	50BF Breaker Failure Protection	ON	A

3.19 Group 50BF Breaker Failure; Group 50BF

Group 50BF Breaker Failure; Group 50BF

No.	Settings	Value	Group
7004	Check Breaker contacts	ON	A
7005	TRIP-Timer	0,20 sec	A
7006	50BF Pickup current threshold	6,00 A	A
7007	50BF Pickup earth current threshold	0,50 A	A

3.20 Group Demand Measurement Setup; Group Measurement

Group Demand Measurement Setup; Group Measurement

No.	Settings	Value	Group
8301	Demand Calculation Intervals	60 Min per., 1 Sub.	A
8302	Demand Synchronization Time	On the Hour	A

3.21 Group Min/Max Measurement Setup; Group Measurement

Group Min/Max Measurement Setup; Group Measurement

No.	Settings	Value	Group
8311	Automatic Cyclic Reset Function	YES	A
8312	MinMax Reset Timer	0 min	A
8313	MinMax Reset Cycle Period	7 day(s)	A
8314	MinMax Start Reset Cycle in	1 Days	A

3.22 Group Energy; Group Measurement

Group Energy; Group Measurement

No.	Settings	Value	Group
8315	Meter resolution	Standard	A