IMPIANTO DI RETE PER LA CONNESSIONE 15kV PER L'IMPIANTO DI PRODUZIONE DA FONTE SOLARE "CASTEL MAGGIORE"

UBICATO IN COMUNE DI CASTEL MAGGIORE (BO)
VIA GIACOMO MATTEOTTI

PROCEDURA AUTORIZZATIVA LEGGE REGIONALE 10/1993 - Art. 2 Comma 2 e 5

PROGETTO DEFINITIVO

DOCUMENTAZIONE DI PROGETTO ELETTRICO PER LA REALIZZAZIONE DELLA CONNESSIONE

RACCOLTA ELEMENTI COSTRUTTIVI

IDENTIFICAZIONE ELABORATO

Livello prog.	Codice Rintracciabilità	Tipo docum.	N° elaborato	N° foglio	Tot. fogli	NOME FILE	DATA	SCALA
PD	496321334	RT	08	1	45	-	15/06/2026	-

REVISIONI

REV.	DATA	DESCRIZIONE	ESEGUITO	VERIFICATO	APPROVATO
0	11/03/2026	PRIMA EMISSIONE	D.S.	L.M.	D.S.
1	10/06/2026	SECONDA EMISSIONE	D.S.	L.M.	D.S.
2	15/06/2026	TERZA EMISSIONE	D.S.	L.M.	D.S.

PROGETTAZIONE:

SYNIERGY.
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Firmato digitalmente da: DAVIDE STANGALINO
Limitazioni d'uso: Explicit Text:
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GESTORE RETE ELETTRICA

FIRMA RICHIEDENTE

RICHIEDENTE

Cedro

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65125 Pescara (PE)

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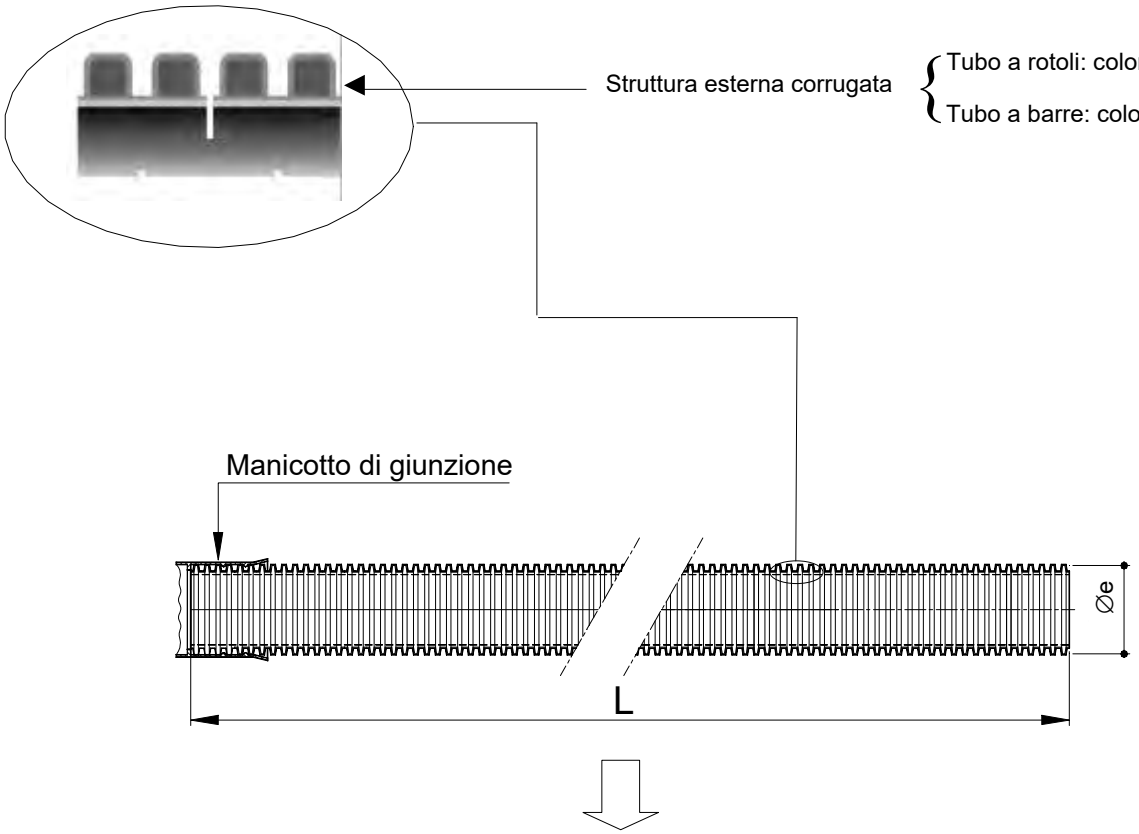
15:38:47
GMT+02:00

FIRMA RICHIEDENTE

PROTEZIONI MECCANICHE: TUBI IN POLIETILENE



Conformi alle Norme CEI EN 50086-2-4 (23-46) (tubo "N" normale)

- resistenza all'urto:
  - tubo Øe 25450 mm: 15 J;
  - tubo Øe 63 mm: 20 J;
  - tubo Øe 125 mm: 28 J;
  - tubo Ø**e 160 mm: 40 J.**

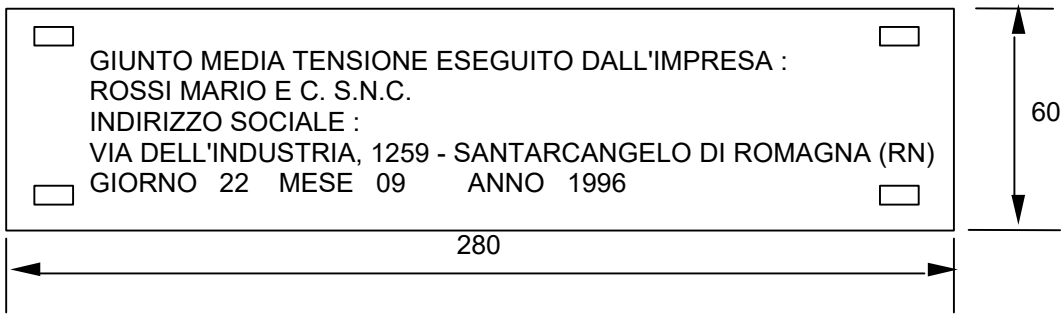
Tipo	Diametro esterno [mm]	L [m]	Marcature	Matricola[1]	Tabella
Tubo "corrugato" in rotoli	25	50	(da applicare alle estremità del tubo) • sigla o marchio del costruttore • materiale impiegato • anno di fabbricazione • CEI EN 50086-2-2 CEI EN 50086-2-4/tipo **"N"**	295510	DS 4247
	32	50		295511	
	50	50		295512	
	63	50		295513	
	125	50		295514	
	160	**25**		**295515**	
Tubo "corrugato" in barre	125	6	(da applicare sulla superficie esterna con passo = 1 m) • sigla o marchio del costruttore • diametro nominale esterno in mm • ENEL • anno di fabbricazione • marchio IMQ	295526	DS 4235
	160			**295527**	

(1) Materiale di fornitura impresa o acquistabile a catalogo on-line.

Quote in mm

ENEL·CAVI

Fig. A



(Esempio di targa identificatrice esecutore giunto)
Materiale : PVC Sp.= 4 mm o Acciaio inox Sp.= 1mm

Fig. B

Fig.	Denominazione	Matricola	Tabella
A	Nastro monitore per indicazione della presenza dei cavi elettrici interrati	85 88 33 (1)	DS 4285
B	Targa identificatrice esecutore giunto	----	----

(1) Materiale di fornitura impresa

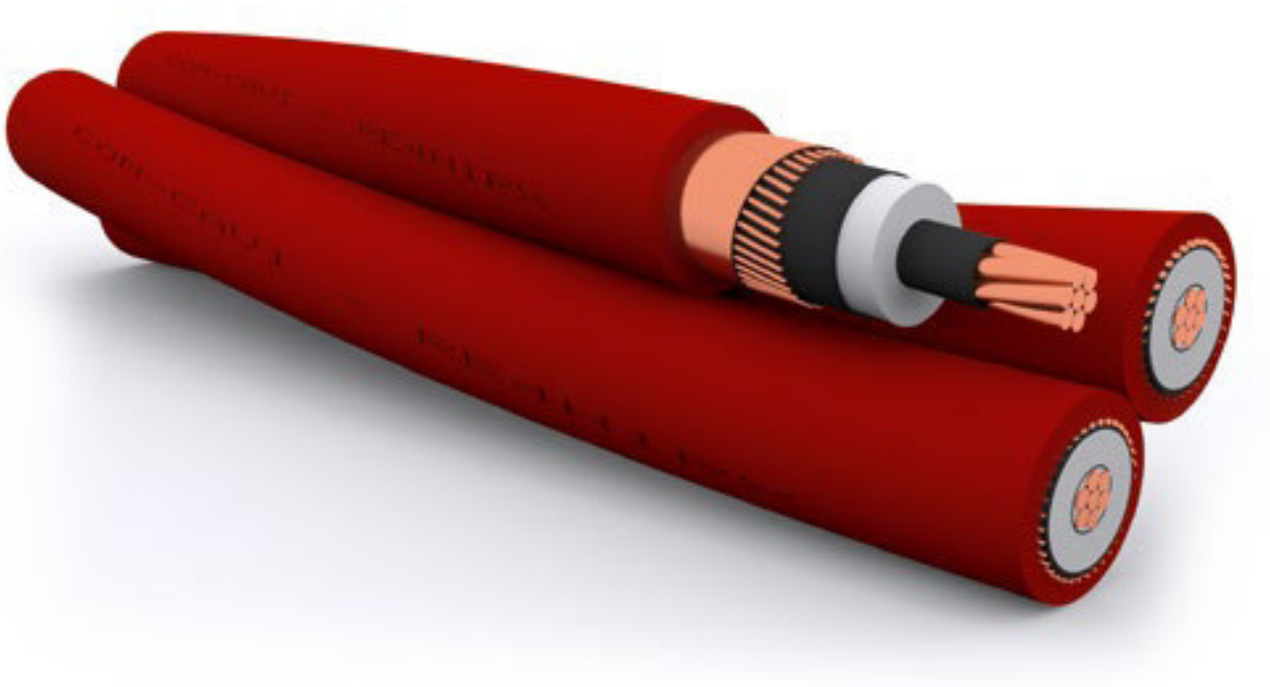
DIREZIONE RETE – SUPPORTO INGEGNERIA

RE4H1RX - Elica visibile 12/20 kV - 18/30 kV

MEDIA TENSIONE - ENERGIA
MEDIUM VOLTAGE - ENERGY

RIFERIMENTO NORMATIVO/*STANDARD REFERENCE*

Costruzione e requisiti/*Construction and specifications*	EC 60502-2
Propagazione fiamma/*Flame propagation*	CEI 20-35
Direttiva RoHS/*RoHS Directive*	2011/65/CE



CARATTERISTICHE FUNZIONALI:
- Tensione nominale Uo/U: : 12/20 kV - 18/30 kV
- Temperatura massima di esercizio: 90°C
- Temperatura minima di posa: 0°C
- Temperatura massima di corto circuito: 250°C

CARATTERISTICHE PARTICOLARI:
Cavi media tensione non propaganti la fiamma. Adatti per impianti eolici.

CONDIZIONI DI IMPIEGO:
Adatti per installazioni in canale interrato; tubo interrato; interro diretto; aria libera; interrato con protezione.

FUNCTIONAL CHARACTERISTICS
- *Nominal voltage Uo/U: 12/20 kV - 18/30 kV*
- *Maximum operating temperature: 90°C*
- *Minimum installation temperature: 0°C*
- *Maximum short circuit temperature: 250°C*

SPECIAL FEATURES
Medium voltage cable, not propagating flame. Suitable for wind power plants.

USE AND INSTALLATION
Suitable for installations in buried trough; buried duct; directly buried; open air; buried with protection.

RE4H1RX - Elica visibile 12/20 kV - 18/30 kV

COSTRUZIONE DEL CAVO / ***CABLE CONSTRUCTION***

	CONDUTTORE **Materiale:** Conduttore a corda rotonda compatta di rame rosso	***CONDUCTOR*** ***Material:*** *stranded wire copper*
	SEMICONDUTTIVO INTERNO **Materiale:** Mescola estrusa **Colore:** Nero	***INNER SEMICONDUCTIVE*** ***Material:*** *extruded compound* ***Colour:*** *Black*
	ISOLANTE **Materiale:** Mescola di politene reticolato **Colore:** Naturale	***INSULATION*** ***Material:*** *polyethylene compound* ***Colour****: Natural*
	SEMICONDUTTIVO ESTERNO **Materiale:** Mescola estrusa **Colore:** Nero	***OUTER SEMICONDUCTIVE*** ***Material:*** *extruded compound* ***Colour:*** *Black*
	SCHERMO **Tipo:** Fili di rame rosso e controspirale **Materiale:** Rame rosso (R max 3 Ω/km)	***SCREEN*** ***Type:*** *Copper wire* ***Colour:*** *Copper (R max 3 Ω/km)*
	GUAINA ESTERNA **Materiale:** PVC di qualità Rz/ST2 **Colore:** Rosso	***OUTER SHEATH*** ***Material:*** *PVC compound, Rz quality* ***Colour:*** *grey*

MARCATURE:

- COM-CAVI - RE4H1RX 12/20 kV - <N° COND. X SEZIONE> <ANNO> <MARCATURA METRICA>

MARKINGS

- *CCOM-CAVI - RE4H1RX 12/20 kV - <N° CONDUCT. S SECTION> <YEAR> <METRIC MARKING>*

RE4H1RX - Elica visibile 12/20 kV

12/20 kV Dati dimensionali - size characteristics

Formazione *Size*	Ø nominale conduttore *Nominal conduct. Ø*	Spessore isolante *Insulation thickness*	Spessore guaina *Sheath thickness*	Ø nominale cavo *Nominal cable Ø*	Peso nominale cavo *Nominal cable weight*	Raggio minimo di curvatura *Minimum bending radius*
n° x mm²	mm	mm	mm	mm	kg/km	mm
25	6,0	5,5	1,8	29,6	760	350
35	7,0	5,5	1,8	30,7	870	360
50	8,1	5,5	1,8	31,7	1000	380
70	9,9	5,5	1,8	33,3	1250	400
95	11,5	5,5	1,9	35,4	1520	430
120	12,9	5,5	1,9	37,0	1800	450
150	14,2	5,5	2,0	38,5	2100	470
185	15,9	5,5	2,0	40,0	2460	490
240	18,3	5,5	2,1	43,2	3050	530
300	20,7	5,5	2,2	45,8	3700	570
400	23,5	5,5	2,3	49,0	4550	610
500	26,5	5,5	2,4	52,0	5650	650
630	30,1	5,5	2,5	56,2	7000	710
3x1x25	6,0	5,5	1,8	63,9	2285	350
3x1x35	7,0	5,5	1,8	66,3	2615	360
3x1x50	8,1	5,5	1,8	68,5	3006	380
3x1x70	9,9	5,5	1,8	71,9	3758	400
3x1x95	11,5	5,5	1,9	76,5	4569	430
3x1x120	12,9	5,5	1,9	79,9	5411	450
3x1x150	14,2	5,5	2,0	83,2	6313	470
3x1x185	15,9	5,5	2,9	86,4	7395	490
3x1x240	18,3	5,5	2,1	93,3	9168	530
3x1x300	20,7	5,5	2,2	98,9	11122	570
3x1x400	23,5	5,5	2,3	105,8	13677	610
3x1x500	26,5	5,5	2,4	112,3	16984	650

Per i cavi con isolamento in G7 i dati dimensionali sono da ritenersi identici.
For cables with insulation G7 dimensional data are to be considered identical.

RE4H1RX - Elica visibile 12/20 kV

12/20 kV Caratterisitche elettriche - electrical characteristics

Formazione *Size*	Capacità nominale *Nominal capacity*	Corrente capacitiva nominale a tensione U_0 *Nominal capacitive current at voltage U_0*	Reattanza di fase a 50 HZ *Reactance phase 50HZ*	Resistenza massima in CC del conduttore a 20°C *Conductor max electrical resist. CC at 20°C*	Resistenza massima in CC dello schermo a 20°C *Screen max electrical resist. CC at 20°C*	Resistenza massima in CA del conduttore a 90°C *Conductor max electrical resist. CA at 90°C*	Portata di corrente *Current rating* A		Corrente di corto circuito del conduttore *Short circuit current conductor* (1s)
							in aria a 30° C *in air at 30° C*	interrato a 20° C *Underground at 20° C*	
n° x mm²	mm	A/Km	Ω/Km	Ω/Km	Ω/Km	Ω/Km		Rt=1m°C/W	kA
25	0,15	0,56	0,155	0,727	3,0	0,930	170	166	3,6
35	0,16	0,65	0,147	0,524	3,0	0,670	200	195	5,0
50	0,17	0,71	0,141	0,387	3,0	0,497	247	226	7,2
70	0,20	0,80	0,132	0,268	3,0	0,344	304	277	10,0
95	0,22	0,89	0,125	0,193	3,0	0,248	370	329	13,6
120	0,24	0,96	0,120	0,153	3,0	0,196	423	370	17,2
150	0,25	1,03	0,117	0,124	3,0	0,160	484	421	21,5
185	0,28	1,12	0,112	0,0991	3,0	0,128	551	473	26,5
240	0,30	1,23	0,108	0,0754	3,0	0,098	646	545	34,3
300	0,33	1,34	0,105	0,0601	3,0	0,080	732	616	42,9
400	0,37	1,48	0,101	0,0470	3,0	0,064	846	709	57,2
500	0,40	1,62	0,098	0,0366	3,0	0,051	869	781	71,5
630	0,44	1,80	0,095	0,0283	3,0	0,042	1102	874	90,1
3x1x25	0,15	0,56	0,155	0,727	3,0	0,930	170	166	3,6
3x1x35	0,16	0,65	0,147	0,524	3,0	0,670	200	195	5,0
3x1x50	0,17	0,71	0,141	0,387	3,0	0,497	247	226	7,2
3x1x70	0,20	0,80	0,132	0,268	3,0	0,344	304	277	10,0
3x1x95	0,22	0,89	0,125	0,193	3,0	0,248	370	329	13,6
3x1x120	0,24	0,96	0,120	0,153	3,0	0,196	423	370	17,2
3x1x150	0,25	1,03	0,117	0,124	3,0	0,160	484	421	21,5
3x1x185	0,28	1,12	0,112	0,0991	3,0	0,128	551	473	26,5
3x1x240	0,30	1,23	0,108	0,0754	3,0	0,098	646	545	34,3
3x1x300	0,33	1,34	0,105	0,0601	3,0	0,080	732	616	42,9
3x1x400	0,37	1,48	0,101	0,0470	3,0	0,064	846	709	57,2
3x1x500	0,40	1,62	0,098	0,0366	3,0	0,051	869	781	71,5

Per i cavi con isolamento in G7 le portate di corrente sono da ritenersi più basse di 4-6 A.
For cables with insulation G7 current rating are to be considered more low 4-6 A.

RE4H1RX - Elica visibile - 18/30 kV

18/30 kV Dati dimensionali - size characteristics

Formazione *Size*	Ø nominale conduttore *Nominal conduct. Ø*	Spessore isolante *Insulation thickness*	Spessore guaina *Sheath thickness*	Ø nominale cavo *Nominal cable Ø*	Peso nominale cavo *Nominal cable weight*	Raggio minimo di curvatura *Minimum bending radius*
n° x mm²	mm	mm	mm	mm	kg/km	mm
35	7,0	8,0	1,9	36,0	1120	430
50	8,1	8,0	2,0	37,5	1280	460
70	9,9	8,0	2,0	39,5	1550	480
95	11,5	8,0	2,1	41,1	1850	500
120	12,9	8,0	2,1	42,5	2100	530
150	14,2	8,0	2,2	44,2	2400	550
185	15,9	8,0	2,2	45,8	2800	570
240	18,3	8,0	2,3	49,0	3400	610
300	20,7	8,0	2,4	51,5	4100	640
400	23,5	8,0	2,5	57,6	5000	690
500	26,5	8,0	2,6	57,7	6100	730
630	30,1	8,0	2,7	63,4	7780	810
3x1x35	7,0	8,0	1,9	77,8	3367	430
3x1x50	8,1	8,0	2,0	81,0	3848	560
3x1x70	9,9	8,0	2,0	85,3	4659	480
3x1x95	11,5	8,0	2,1	88,8	5561	500
3x1x120	12,9	8,0	2,1	91,8	6313	530
3x1x150	14,2	8,0	2,2	95,5	7214	550
3x1x185	15,9	8,0	2,2	98,9	8417	570
3x1x240	18,3	8,0	2,3	105,8	10220	610
3x1x300	20,7	8,0	2,4	111,2	12325	640

Per i cavi con isolamento in G7 i dati dimensionali sono da ritenersi identici.
For cables with insulation G7 dimensional data are to be considered identical.

12/20(24) kV AND 18/30(36) kV SEPARABLE CONNECTORS FOR MV CABLES

Countries I&N	
Argentina	**C. Espinoza**
Brazil	**R. Sales**
Chile	**D. Sarkis**
Colombia	**J. C. Gomez**
Italy	**L. Giansante**
Peru	**R. Sanchez**
Romania	**V. Obrejan**
Spain	**J. Gonzalez**

	Elaborated by	Verified by	Approved by
Global I&N – O&M/NCS	**L. Foddai**	**N. Cammalleri**	**M. Mazzotti**

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Revision	Data	List of modifications
00	25/11/2015	First emission.
01	23/02//2018	Material codes updated. Chapter on barcode updated, Painted semiconducting layer not allowed; New tests: UV test for outdoor accessories; Modification of requirements for resistance to fire; Modification of requirements of screen connecting plate; modification of requirements of tracking and erosion test, introduction of PE-bag packaging instead of obstruction cups. Class 24 kV for Italy and Rumania. Modification of max width for elbow type. Rated short time withstand current in the screen, Increase of the minimum section of the earthing lug for Italy, Rumania, Spain and Peru from 16 to 25 mm2
02	25/05/2018	Revised tables 8, 9 and 10.
03	09/07/2018	Tracking and erosion test withdrawn. Revised material codes for Brazil.

6 TYPES OF SEPARABLE CONNECTORS

The following types of separable connector are defined:

Type code	Shape				Interface			Rated voltage U_0/U (U_m) (kV)		Rated current I_n (A)		
	Elbow	Straight	Tee (symmetric or asymmetric)	Tee (symmetric with joint element)	A	B	C	12/20(24)	18/30(36)	250	400	630
GSCC006/1	X				X			X		X		
GSCC006/2	X					X		X			X	
GSCC006/3	X					X			X		X	
GSCC006/4		X			X			X		X		
GSCC006/5		X				X		X			X	
GSCC006/6		X				X			X		X	
GSCC006/7			X				X	X				X
GSCC006/8			X				X		X			X
GSCC006/9				X			X	X				X
GSCC006/10				X			X		X			X

Table 1 – Separable connector types

7 ELECTRICAL AND DIMENSIONAL CHARACTERISTICS

The following requirements apply:

Rated voltage U_0/U (U_m) (kV)	**12/20(24)**	**18/30(36)**
Rated power frequency withstand voltage (kV)	50	70
Rated impulse withstand voltage (kV)	125	170
Rated short time withstand current in the conductor (kA)	According to HD629-1 (EN 61442)	
Rated short time (0,5 s[a]) withstand current in the screen (kA)	5[b]; 10[c]	
NOTE (see Table 8): a: for E-distribuzione, E-distributie, Endesa Distribución Eléctrica the rated short time is 1 s b: for 16 mm^2 and 25 mm^2 screen (all Distribution Companies except Enel Distribución Colombia) c: for 25 mm^2 screen (only for Enel Distribución Colombia) and 50 mm^2 screen (all Distribution Companies to which applies)		

Table 2 – Electrical characteristics

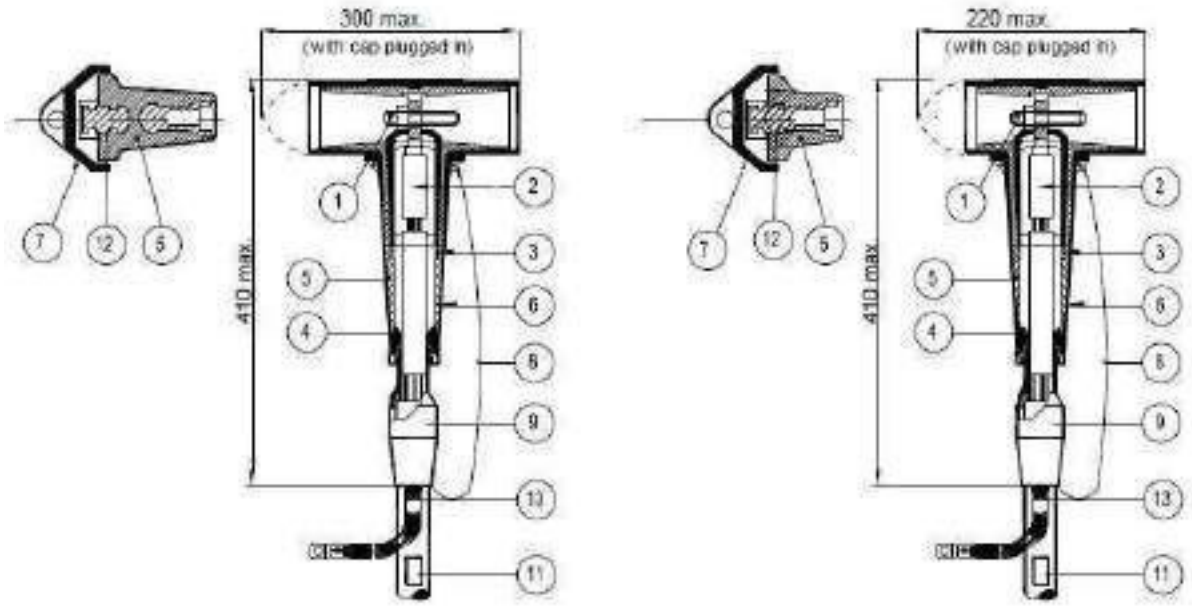
The rated voltage levels of the cables for which is foreseen the installation of the separable connectors is the following:

Rated voltage of the separable connector U_0/U (U_m) (kV)	**12/20(24)**	**18/30(36)**
Distribution Company (Country)	**Rated voltage of the cables U_0/U (U_m) (kV)**	
Enel Distribuição Ceará (Brazil) Enel Distribución Colombia (Colombia)	8.7/15(17.5)	-
Enel Distribución Chile (Chile)	8.7/15(17.5)	15/25(31)
Enel Distribución Perú (Perù)	8.7/15(17.5); 12/20(24)	-
Edesur (Argentina) Enel Distribuição Rio (Brazil) Enel Distribuição Goiás (Brazil)	8.7/15(17.5)	18/30(36)
Endesa Distribución Eléctrica (Spain)	12/20(24)	18/30(36)
E-distributie Banat (Romania); E-distributie Dobrogea (Romania); E-distributie Muntenia (Romania); E-Distribuzione (Italy)	12/20(24)	-

Table 3 – Rated voltage of the cables

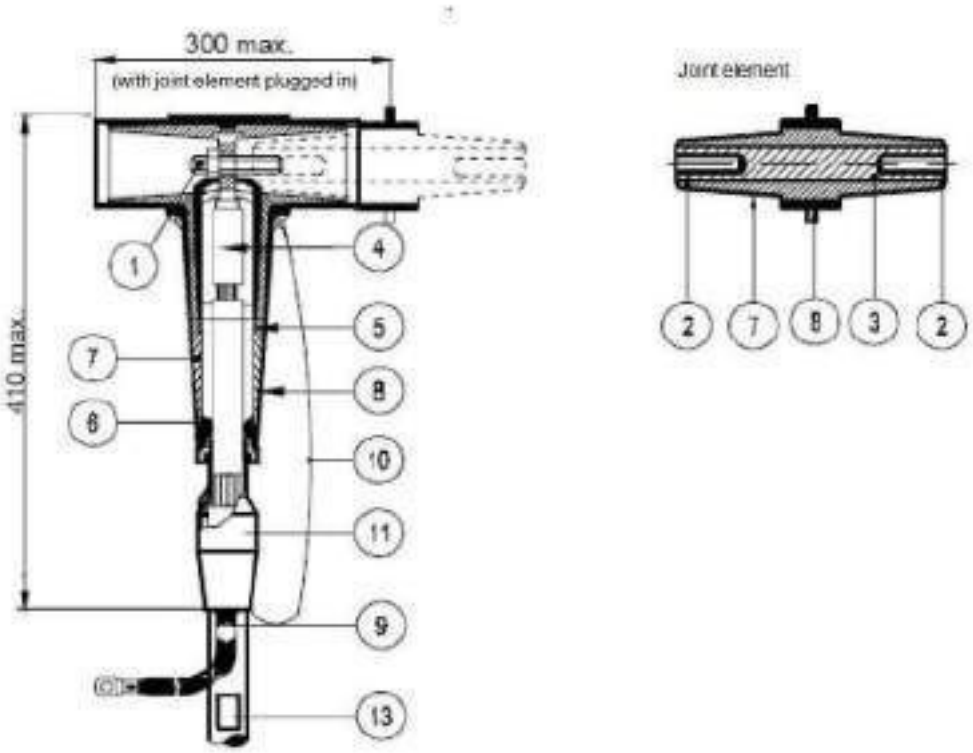
Dimensions [1]	**GSCC006/1 GSCC006/2 GSCC006/3**	**GSCC006/4 GSCC006/5 GSCC006/6**	**GSCC006/7 GSCC006/8**	**GSCC006/9 GSCC006/10**
Width max (mm)	215	-	300 [a] ; 220 [b]	300 [c]
Length max (mm)	320	-	410	410
1: refer to Figure 1, Figure 2 and Figure 3. a: symmetric with protection cap plugged-in b: asymmetric with protection cap plugged-in c: with junction element plugged-in				

Table 4 - Dimensional characteristics



1	Contact screw	8	Equipotential connection
2	Lug	9	Cable adapter
3	Internal semiconductor layer		
4	Electric field control	11	Phase marking plate
5	Insulating layer	12	Capacitive socket
6	External semiconductor layer	13	Earthing connection
7	Protection cap		

Figure 2 – Tee (symmetric and asymmetric) separable connector



1	Contact screw	8	External semiconductor layer
2	Screw hole	9	Earthing connection
3	Copper connection	10	Equipotential connection
4	Lug	11	Cable adapter
5	Internal semiconductor layer		
6	Electric field control	13	Phase marking plate
7	Insulating layer		

Figure 3 – Tee (symmetric with joint element) separable connector

8 SERVICE CONDITIONS

8.1 General service conditions

IEC 60721-2-1. Severe ambient conditions according to IEC 60587.

8.2 Specific service conditions

For Enel Distribución Colombia (Codensa): the reference altitude is 2.700 m.

9 CONTRUCTION CHARACTERISTICS

9.1 GENERAL CHARACTERISTICS

9.1.1 Resistance to corrosion, infiltrations, moisture and dust

The external surfaces of separable connectors (including caps used in shipping and storage) shall be resistant to atmospheric conditions that can occur during normal operation (moisture, dust, UV rays, etc.). The insulating

- to protect the junction of the metallic screen
- inside the lug screws cavities

Greases and sealing compounds shall have no electrical insulating functions for the assembling of the separable connector but only provide mechanical and/or sealing features.

10 CONTENT OF THE KIT

All the necessary elements and accessory to install the separable connector on-field shall be included, namely:

- 1 (one) shear bolt lug (see 9.2.1)
- 1 (one) cable adapter (see 9.2.2)
- 1 (one) main insulating housing (see 9.2.3)
- 1 (one) capacitive socket (see 9.2.4) (except for tee symmetric with joint element)
- 1 (one) protection cap (see 9.2.5) (except for tee symmetric with joint element)
- 1 (one) contact device (see 9.2.6)
- 1 (one) earthing lug (see 9.2.8.1)
- 1 (one) plate for aluminum tape screen cables (see 9.2.8.2) (only in the Countries which use them, see Table 8)
- 1 (one) connector for copper wire screen (see 9.2.8.3.1)
- 1 (one) equipotential connection (see 9.2.9)
- 1 (one) fastening device (only for elbow and straight separable connectors) (see 9.2.10)
- 3 (three) phase marking plates (see 9.2.11)
- 1(one) joint element (only for tee symmetric with joint element) (see 9.2.7)
- Greases and sealing compounds (see 9.2.12)
- Accessories for cleaning;
- Plastic bag for collecting residual materials of installation;
- List of materials;
- Identification label (see 13.2.2);
- Installing instructions and templates (see 13.3);
- Other materials, tools and accessories (according to supplier's design).

The separable connector shall be sealed in a PE-bag in order to avoid contamination.

11 LIST OF COMPONENTS

The list of components included in this Global Standard is reported in the following tables for 12/20(24) kV and 18/30(36) kV rated voltages:

Distribution Company (Country)	**Type: GSCC006/1, GSCC006/2, GSCC006/4, GSCC006/5, GSCC006/7, GSCC006/9**					
Enel Distribuição Rio (Brazil) Enel Distribuição Ceará (Brazil) Enel Distribuição Goiás (Brazil)	6776218 a1 6812157 b1	6797083 a1 6812126 b1	6812191 a2 6812127 b2	6812160 c1 6812192 d1	6812128 c1 6812129 d1	-
Enel Distribución Chile (Chile)	-	-	-	-	-	-
Enel Distribución Colombia (Colombia)	-	6805272 b1 6811871 c1	6805270 c1	6805273 c1	-	-
Enel Distribución Perú (Perù)	6810090 c1	6812081 b1 6812082 c1 6811511 d1	-	6812280 c1 6811512 d1	6812083 c1 6811513 d1	-
Edesur (Argentine)	-	-	-	-	-	-
Endesa Distribución Eléctrica (Spain)	270006 c1 270319 d1	270118 a1 270119 a2 270121 b1 110574 d1 270005 c1	270112 c1 110575 d1	270113c1 110576 d1	270114c1 110577d1	-
E-distributie Banat (Romania); E-distributie Dobrogea (Romania); E-distributie Muntenia (Romania); E-Distribuzione (Italy)	273171 a1 273170 b1	273142 a1 273163 b1 273226 c1 273227 d1	273247 c1 273248 d1	-	-	-
Characteristics of the cable						
Cable section (mm^2)	35 ÷ 50	70 ÷ 120	150 ÷ 185	240	400	630
Min/max diameter over insulation (mm)	14.9/21.8	17.6/26.6	22.3/28	26.1/32.2	31/37.5	39.5/43.5
Rated voltage of the cables U_0/U (U_m) (kV)	See Table 3					
a1: for GSCC006/1; a2: for GSCC006/2; b1: for GSCC006/4; b2: for GSCC006/5; c1: for GSCC006/7; d1: for GSCC006/9						

Table 9 – Material codes for 12/20(24) kV separable connectors

Distribution Company (Country)	**Type: GSCC006/3, GSCC006/6, GSCC006/8, GSCC006/10**					
Enel Distribuição Rio (Brazil) Enel Distribuição Goiás (Brazil)	-	T270004 c2	T270006 c2	T270016 c2	-	-
Enel Distribución Chile (Chile)	-	6812360 a3 6812363 b3 6812283 c2	-	6812282 c2	6812281 c2	6812284 c2
Enel Distribución Colombia (Colombia)	-	-	-	-	-	-
Enel Distribuição Ceará (Brazil)	-	-	-	-	-	-
Enel Distribución Perú (Perù)	-	-	-	-	-	-
Edesur (Argentine)	-	-	-	-	-	-
Endesa Distribución Eléctrica (Spain)	270004 c2 270320 d2	270003 c2 270321 d2	270120a3 270122b3 270115c2 110578d2	270116c2 110579d2	270117c2 110580d2	-
E-distributie Banat (Romania); E-distributie Dobrogea (Romania); E-distributie Muntenia (Romania); E-Distribuzione (Italy)	-	-	-	-	-	-
Characteristics of the cable						
Cable section (mm^2)	35 ÷ 50	70 ÷ 120	150 ÷ 185	240	400	630
Min/max diameter over insulation (mm)	21/26.6	24/30	27.3/33	31.2/37.2	34.9/42.5	41.3/49.7
Rated voltage of the cables U_0/U (U_m) (kV)	See Table 3					
a3: for GSCC006/3 b3: for GSCC006/6 c2: for GSCC006/8 d2: for GSCC006/10						

Table 10 – Material codes for 18/30(36) kV separable connectors

12 TESTS

12.1 GENERAL

Tests are classified into:

- Type tests
- Acceptance tests

They shall be carried out according to HD 629-1. Lugs shall be tested according to IEC 61238-1.

12.2 TYPE TESTS

For each material code, type tests shall be carried out on a sample installed on cables with the maximum section indicated in Table 9 and Table 10, respectively for U_o/U (U_m) 12/20(24) kV and 18/30(36) kV (e.g. 270112 shall be tested on a 185 mm^2 – 12/20(24) kV cable and 270122 on a 185 mm^2 18/30(36) kV cable).
For E-Distribuzione, E-Distributie Banat, E-Distributie Dobrogea and E-Distributie Muntenia, type tests shall be carried out on both HPTE and XLPE insulated cables.

Type tests shall be carried out at the maximum rated voltage level prescribed for separable connector (i.e. 12/20(24) kV or 18/30(36) kV).

The lugs shall be tested both for their maximum and minimum section, according to IEC 61238-1, class A.

The Supplier shall declare the resistance to fire of the main insulating housing according to IEC 60695-11-10 or another equivalent standard.

12.2.1 UV resistance test

Separable connectors shall be tested according to the IEC 62217 2012 par 9.3.2 (1000 h).

12.2.2 ADDITIONAL TYPE TESTS

For each material code, the extension of compliance from maximum section to minimum section shall be verified on a cable having the minimum diameter over insulation (or lower) specified in Table 9 and Table 10, by carrying out all the additional tests prescribed by HD 629-1, table 10, taking into account that test No. 5 must be performed, additionally to prescribed conditions, also by subjecting the samples to 63 cycles in water (to be performed according to HD 629-1, table 5, test No. 7). Additional type tests shall be carried out at the maximum rated voltage level prescribed for the separable connector (i.e. 12/20(24) kV or 18/30(36) kV).

For E-Distribuzione, E-Distributie Banat, E-Distributie Dobrogea and E-Distributie Muntenia additional type tests shall be carried out on both HPTE and XLPE insulated cables.

12.3 ACCEPTANCE TESTS

For each material code, acceptance tests shall be carried out using the smallest cable section (see Table 9 and Table 10 for reference) with the rated voltage of the cable according to Table 3, (e.g. 270120 shall be tested on a 150 mm^2 – 18/30(36) kV cable).
For Enel Distribución Peru acceptance tests shall be carried out using the smallest cable section with 12/20(24) kV rated voltage[2] (e.g. 6810090 shall be tested on a 35 mm^2 – 12/20(24) kV cable).

---

[2] Tests performed on a 12/20(24) kV cable are considered sufficient to demonstrate compliance also for the installation on a 8.7/15(17.5) kV cable with normal thickness insulation.

Acceptance tests shall be carried out at the maximum rated voltage level prescribed for the cable (see Table 3).
The samples for the acceptance tests shall be selected from among the entire batch that was prepared for testing even if made up of different material codes according to Table 11.

Acceptance test	Batch (units)		
	≤ 50 units	> 50 and ≤ 1200	> 1200
Visual inspection	2 samples for each material code prepared for testing	5 samples for each material code prepared for testing.	10 samples for each material code prepared for testing.
Accessory manufacturing specifications check*			
Accessory assembly check	1 sample for each material code prepared for testing.	2 samples for each material code prepared for testing	3 samples for each material code prepared for testing
Power frequency withstand test			
Partial discharge test at ambient temperature			
* the nominal tightening torque of shear bolts specified by the manufacturer shall be always verified.			

Table 11 – Samples for acceptance tests

In all cases, the acceptance number will be 0 and the rejection number will be 1.

On the scheduled acceptance testing date the supplier shall prepare the cables, stripped as required by the assembly instructions of separable connector being tested. This will facilitate the assembly of the separable connector and reduce the testing time, which benefits both parties.

12.4 RETIE Certification (only apply to Enel Distribución Colombia)

For Codensa (Colombia), RETIE certification shall be also provided according to local regulation (see 3.3.4). It is requested that this certification be made under the scheme 5 (ISO IEC 17067).

13 SUPPLY REQUIREMENTS

13.1 LABELLING

The separable connector and its accessories must bear the following information:
a) name of the manufacturer;
b) rated current in A;
c) maximum voltage U_m in kV;
d) year and month of manufacture (e.g.: 15/2);

In particular, this information shall be placed on the external surface of the main insulating housing of the separable connector by means of indelible and permanent screen printing or an equivalent method accepted by the Distribution Companies of Enel Group.

13.2 PACKAGING

Separable connectors shall be supplied in individual packages which shall bear the following information:
- Material code assigned by the Distribution Companies of Enel Group;
- name of the manufacturer;
- type of separable connector (e.g. elbow separable connector);
- type of cables for which the accessory is intended, section and conductive material allowed;
- year and month of packaging;
- progressive identification number assigned by the manufacturer (or serial number);
- barcode (only for E-distribuzione and Endesa Distribucion, see 13.2.1) ;
- production batch number;

- identification abbreviation;
- maximum voltage U_m in kV;
- expiry date (year/month) of the materials.

Furthermore, the packages shall contain a self-adhesive label with the following information (only for E-distribuzione and Endesa Distribucion):

- manufacturer identification code (CUI);
- material code assigned by the Distribution Companies of Enel Group;
- year and month of manufacture (e.g.: 15/2);
- progressive identification number (assigned by the manufacturer);
- barcode (only for E-distribuzione and Endesa Distribucion, see 13.2.1)

For E-distribuzione, shipping (of several individual packages) shall meet the requirements of the packaging in compliance with GUI 101 specifications.

13.2.1 Barcode (only for E-Distribuzione and Endesa Distribucion)

The characteristics of the barcode are listed in E-Distribuzione specification PVR 006.

13.2.2 Identification label

It shall include blank fields to be filled after installation:

Name: .....
Date: .....
Company: .....

13.3 INSTALLATION INSTRUCTIONS AND TEMPLATES

The instruction for the preparation of the cable shall be written in compliance with Enel Global Standard GSCC015. For E-distribuzione the technical specification DJ4580 also applies.

Accessory assembly instructions shall be written on A4 paper, and the various stages of construction of the termination shall be illustrated by photographs or diagrams in color.

Templates shall be included for the following types of cables:

- Extruded cables with aluminum tape screen (only for the Country listed in table Table 6)
- Extruded cables with copper wires screen

Furthermore, for processing steps that require the use of a special tool, the description of these operations shall be accompanied by the Distribution Companies of Enel Group material code/type code[3] for the tool and a color photograph.

Additionally a QR code shall be included in the instructions to provide a web-link to demonstration videos and tutorials on the related separable connector. They shall be in the local language of the Country of delivery.

Installing instruction and templates shall be in the local language of the Country of delivery and shall be approved by Distribution Companies of Enel Group.

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[3] This information, if any, will be provided by Distribution Companies of Enel Group during the examination of the installation instructions (before the certification process)

Box in calcestruzzo armato prefabbricato per apparecchiature elettriche per altitudini fino a 1000 metri sul livello del mare

STANDARD BOX DISTRIBUZIONE – STANDARD BOX SATELLITE – STANDARD BOX CLIENTE

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Edizione	Data	Natura della modifica
07.1	10/02/2012	Errata Corrige: Modifiche redazionali Introdotto Sistema passacavi da parete per cavi antenne
08	15/09/2016	Riduzione dimensione del foro a pavimento per quadri MT compatti in SF_6 Introduzione altezza massima box Rimozione dalla dotazione di cabina dei passacavi Introduzione specifiche tecniche aggiornate/di nuova edizione DS918 - DS920 – DY3021 Introduzione nella dotazione di cabina dell'armadio rack (DY3005) e del supporto QBT (DS3055) Modifica della dimensione del sistema passacavo per cavi temporanei Introduzione disegno costruttivo telaio per quadri BT con fissaggio sia inferiore che superiore Introduzione inserti per fissaggio quadro rack Introduzione prove di tipo e accettazione sullo spessore zincatura telaio per quadri BT Introduzione della verifica di isolamento degli elementi metallici accessibili dall'esterno Introduzione prova di accettazione provini cls Introduzione prova sclerometrica non distruttiva del cls indurito Introduzione richiesta di certificato di conformità impianto elettrico (D.M. 22 gennaio 2008, n.37) Introduzione della documentazione di tipo C "cabine box da terzi"
09	Settembre 2021	Adeguamento al D.M. 17 gennaio 2018 Introduzione Standard Box Satellite Introduzione Standard Box Cliente Introduzione Standard Box Cliente Rid Introduzione impiego cls fibrorinforzato Adeguamento normativa CPR per cavi impianto elettrico Adeguamento alla UNI EN ISO 1461 per elementi zincati Introduzione lampada di emergenza Introduzione tavolino Introduzione pittura pavimento

	Emissione	Collaborazioni	Verifiche	Approvazione
Unità	**DIS-ESM-PCS-STD**		**DIS-ESM-PCS-STD**	**DIS-ESM-PCS**
	S. Di Cesare		**L. Giansante**	**G. Valtorta**

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STANDARD BOX DISTRIBUZIONE

STANDARD BOX CLIENTE RID

STANDARD BOX SATELLITE

STANDARD BOX CLIENTE

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Descrizione	Tipologia	Matricola
Standard Box Distribuzione con porte vetroresina	DG2061/1	227280
Standard Box Distribuzione con porte acciaio zincato	DG2061/2	227282
Standard Box Distribuzione con porte acciaio inox	DG2061/3	227283
Standard Box Satellite con porte vetroresina	DG2061/4	220015
Standard Box Satellite con porte acciaio zincato	DG2061/5	220014
Standard Box Satellite con porte acciaio inox	DG2061/6	220012
Standard Box Cliente con porte vetroresina	DG2061/7	220008
Standard Box Cliente con porte acciaio zincato	DG2061/8	220003
Standard Box Cliente con porte acciaio inox	DG2061/9	220002
Standard Box Cliente Rid con porte vetroresina	DG2061/10	220011
Standard Box Cliente Rid con porte acciaio zincato	DG2061/11	220010
Standard Box Cliente Rid con porte acciaio inox	DG2061/12	220009

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	STANDARD BOX CLIENTE		**STANDARD BOX CLIENTE RID**	
Dimensioni interne in mm	6520 x 2300 x 2300/2600 (LxPxH)		5530 x 2300 x 2300/2600 (LxPxH)	
Impiego Tipico	Connessione di clienti MT alla rete elettrica e-distribuzione			
Max n. linee MT	3			
Tipologie quadri MT	Quadri isolati in SF_6 (GSM001/GSCM004)		Quadri isolati in SF_6 (GSM001/GSCM004)	
Configurazioni linee MT e trasformatore	3LE+1T+1M (L=2450 mm) 3LE+1M+1AT (L=2100 mm) 4LE+1T+1M (2900 mm) 4LE+1M+1AT (L=2650 mm) 1T+3CBL+1M (L=2650 mm) 3CBL+1M+1AT (L=2400 mm) 4CBL+1M+1AT (L=2850 mm)	3LE+1M+1AT (L=2100 mm) 4LE+1M+1AT (L=2650 mm) 3CBL+1M+1AT (L=2400 mm) 4CBL+1M+1AT (L=2850 mm)	3LE+1T+1M (L=2450 mm) 3LE+1M+1AT (L=2100 mm) 4LE+1T+1M (2900 mm) 4LE+1M+1AT (L=2650 mm) 1T+3CBL+1M (L=2650 mm) 3CBL+1M+1AT (L=2400 mm) 4CBL+1M+1AT (L=2850 mm)	3LE+1M+1AT (L=2100 mm) 4LE+1M+1AT (L=2650 mm) 3CBL+1M+1AT (L=2400 mm) 4CBL+1M+1AT (L=2850 mm)
Max n. linee BT	8		-	
Taglie interruttori BT	125-250-350-630 A (GSCL003)		-	
Potenza Trasformatore	160-250-400-630 kVA (GST001)		-	
Tipologie telai BT	Rack servizi ausiliari (DY3005 + GSCL001)			

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4.2.3 Standard Box Cliente

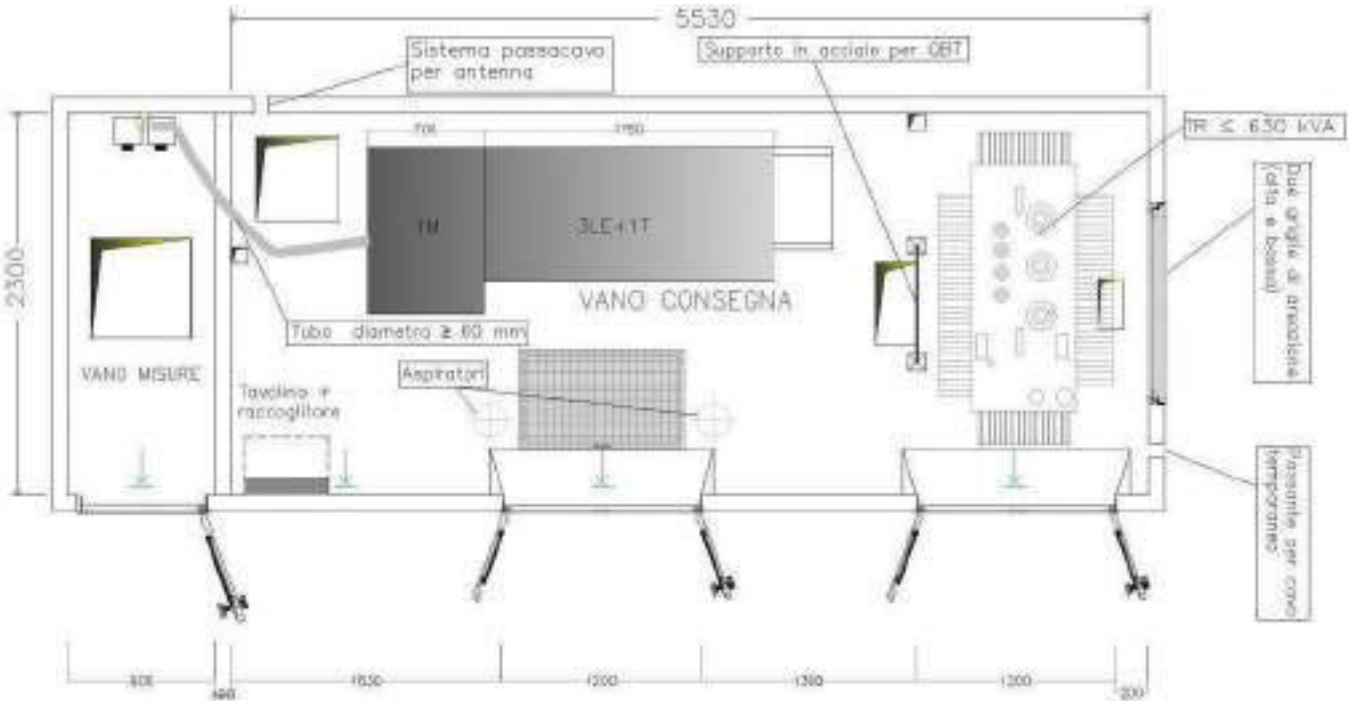

Figura 3 - Pianta dimensionale e funzionale Standard Box Cliente – Ulteriori dimensioni nel §14.3

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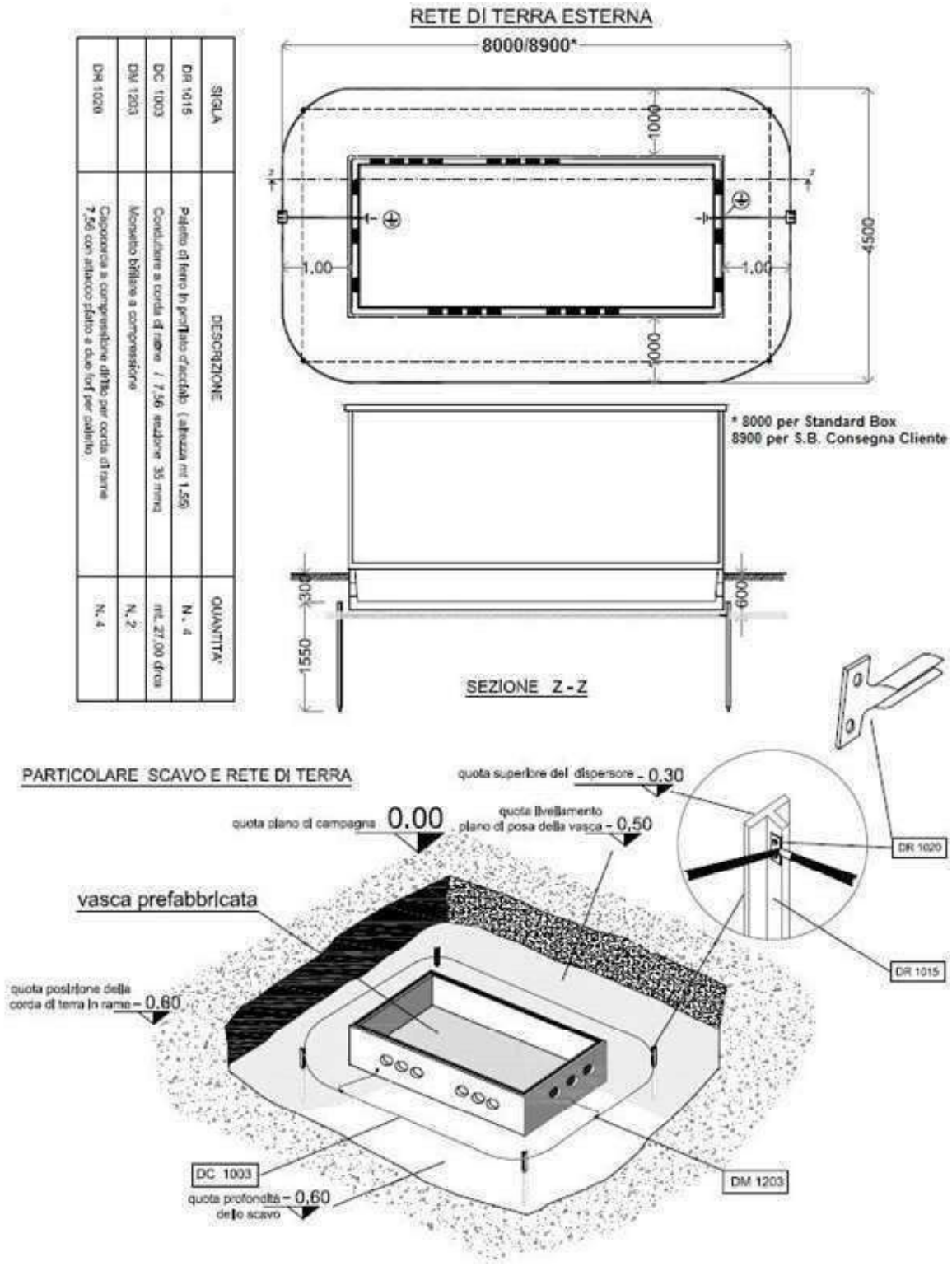

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Technical Specification code: GRI-GRI-MAT-E&C-0002

Version no.3 dated 03/10/2022

Subject: Enel Grids - GSM001 - Medium Voltage Gas Insulated Switchgears for secondary distribution substations

Application Areas

Perimeter: Global

Staff Function: -

Service Function: -

Business Line: Enel Grids

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THE HEAD OF NETWORK COMPONENTS

Fabrizio Gasbarri

1 DOCUMENT AIMS AND APPLICATION AREA

The scope of this document is to provide the technical requirements for Medium Voltage (*MV*) Gas-Insulated switchgears (*GIS*), with rated voltage 24 kV and 36 kV to be installed as indoor equipment in *Secondary Distribution Substations* of the Enel Grids Distribution Companies listed below:

Country	Distribution Company
Argentina	Edesur
Brazil	Enel Distribuição Rio Enel Distribuição Ceará Enel Distribuição Goiás Enel Distribuição São Paulo
Chile	Enel Distribución Chile
Colombia	Enel Codensa
Iberia	e-distribución
Italy	e-distribuzione
Peru	Enel Distribución Perú
Romania	Enel Distributie Banat Enel Distributie Dobrogea Enel Distributie Muntenia

Table 1 - Distribution Companies

This document shall be implemented and applied to the extent possible within the Enel Grids Business Line and in compliance with any applicable laws, regulations and governance rules, including any stock exchange and unbundling-relevant provisions, which in any case prevail over the provisions contained in this document.

1.1 RELATED DOCUMENTS TO BE IMPLEMENTED AT COUNTRY LEVEL

This document does not require implementation of further documents. Anyway, each Enel Grids Company can issue, under the supervision of Enel Grids Global Network Components detailed documents, according to the provisions of the present document and in case of specific needs.

2 DOCUMENT VERSION MANAGEMENT

Version	Date	Main changes description
0	10/07/2014	First emission
1	30/11/2020	Rated short-circuit duration - Rated arc fault duration – VDS- Directions of operation of switch-disconnector and earthing switches – Only motorized switchgear - LPVT embedded
2	08/07/2021	Release of “Global Infrastructure and Networks – GSM001 vers.2. Standardized format release, editorial errors correction.
3	XX/XX/2022	Subject updated. SF6 alternatives are accepted. Editorial corrections. Internal arc test clarification. VDIS alternative is introduced. Type test list update. Routine test redefinition according to Enel QCM indications. Harmonization and reduction of type codes. Introduced busbar VDS design and construction characteristics. Transformer functional unit with circuit breaker is included. Cable connection to RTU excluded from the supply.

3 UNITS IN CHARGE OF THE DOCUMENT

Responsible for drawing up the document:

- Enel Grids: Engineering and Construction /Components and Devices Design/ Network Components/ MV and LV Equipment unit

Responsible for authorizing the document:

- Enel Grids: Head of Network Components unit
- Enel Grids: Head of Quality unit.

4 REFERENCES

- Code of Ethics of Enel Group;
- Enel Human Right Policy;

- The Enel Group Zero Tolerance of Corruption (ZTC) Plan;
- Organization and management model as per Legislative Decree No. 231/2001;
- Enel Global Compliance Program (EGCP);
- Integrated Policy for Quality, Health and Safety, Environment, anti-Bribery and Information security;
- ISO 9001:2015 - Quality Management System – Requirements;
- ISO 14001:2015 - Environmental Management System - Requirements with guidance for use;
- ISO 45001:2018 - Occupational Health and Safety Management System - Requirements with guidance for use;
- ISO 37001:2016 - Anti-bribery Management System - Requirements with guidance for use;
- ISO 27001:2017 - Information Security Management System – Requirements.

4.1 INTERNATIONAL STANDARDS

The listed reference documents shall be intended in the in-force edition at the TCA date (amendments and errata included). Unless otherwise specified, these documents are valid until the new editions:

- EN 50181 Plug-in type bushings above 1 kV up to 52 kV and from 250 A to 2,50 kA for equipment other than liquid filled transformers
- EN 60282-1 High-voltage fuses - Part 1: Current-limiting fuses
- EN 61439-2 High-voltage fuses - Part 1: Current-limiting fuses
- EN 61869-1-3 Instrument transformers - Part 1-3
- EN 62262 Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK Code)
- IEC 60068-2-52 Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution).
- IEC 60137 Insulated bushings for alternating voltages above 1000 V
- IEC 60282-1 High-voltage fuses - Part 1: Current-limiting fuses.
- IEC 60447 Basic and safety principles for man-machine interface, marking and identification - Actuating principles.
- IEC 60529 Degrees of protection provided by enclosures (IP Code).
- IEC 61243-5 Live working - Voltage detectors - Part 5: Voltage detecting systems (VDS).

- IEC 62271-1 High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear.
- IEC 62271-102 High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches.
- IEC 62271-103 High-voltage switchgear and controlgear - Part 103: Switches for rated voltages above 1 kV up to and including 52 kV.
- IEC 62271-105 High-voltage switchgear and controlgear - Part 105: Alternating current switch-fuse combinations for rated voltages above 1 kV up to and including 52 kV.
- IEC 62271-200 High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV.
- IEC TS 62271-210 High-voltage switchgear and controlgear - Part 210: Seismic qualification for metal enclosed and solid-insulation enclosed switchgear and controlgear assemblies for rated voltages above 1 kV and up to and including 52 kV.
- ISO 12944 Paints and varnishes — Corrosion protection of steel structures by protective paint systems.
- ISO 2409 Paints and varnishes — Cross-cut test.
- ISO 4042 Fasteners - Electroplated coatings
- ISO/IEC 17000 Conformity assessment – Vocabulary and general principles
- ISO/IEC 17020 General criteria for the operation of various types of bodies performing inspection
- ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories
- ISO/IEC 17050-1 Conformity assessment - Supplier’s declaration of conformity - Part 1: General requirements (ISO/IEC 17050-1:2004, corrected version 2007-06-15)
- ISO/IEC 17050-2 Conformity assessment - Supplier’s declaration of conformity - Part 2: Supporting documentation (ISO/IEC 17050-2:2004)
- ISO/IEC 17065 Conformity assessment – Requirements for bodies certifying products, processes, and services

4.2 APPLICABLE LAWS AND REFERENCE STANDARDS

4.2.1 Reference Laws

4.2.1.1 Colombia

The switchgear shall comply with the requirements established in the “Anexo General del RETIE Resolución 9 0708 de Agosto 30 de 2013 con sus Ajustes” and demonstrate this by means of a Certificate of Product Conformity.

4.2.1.2 Spain

The switchgear shall comply with the “Reglamento sobre condiciones técnicas y garantías de seguridad en instalaciones eléctricas de alta tensión y sus Instrucciones Técnicas Complementarias ITC-RAT 01 a 23 (R.D. 337/2014, de 9 de mayo)”, and consequently each switchgear shall be supplied accompanied by the "Declaración de Conformidad " required by this regulation, and the manufacturer or his authorized representative established in the European Union must keep the required “Expediente técnico” at disposal of the Spanish national market surveillance authority for inspection up to at least five years from the last date of manufacture of the product.

DND001 Ed.7 Cables aislados para redes aéreas y subterráneas de media tensión hasta 30kV

4.2.2 Enel Grid Technical Standards

- GSCC006 12/20(24) kV and 18/30(36) kV Separable connectors for MV cables.
- GSCT005 Technical characteristics of LPITs for RGDM/RGDAT.
- GSC001 Medium voltage cables with rated voltage Uo/Uc(Um) 8,7/15(17,5) kV, 12/20(24) kV,15/25(31) kV, 18/30(36) kV and 20/34,5(37,95) kV.
- CNS-O&M-S&L-2021-0032-EGIN Global Infrastructure and Networks Barcode specification

4.2.3 Colombian Technical Standards

- NSR-10 Requisitos generales de diseño y construcción sismo resistente.

5 ORGANIZATIONAL PROCESS POSITION IN THE PROCESS TAXONOMY

- Value Chain/Process Area: Engineering and Construction
- Macro Process: Devices and Components Development

- Process: Standard Catalog Management

6 DEFINITIONS AND ACRONYMS

Acronym and Key words	Description
Gas Insulated Switchgear (GIS)	A general term covering switching devices and their combination with associated control, measuring, protective and regulating equipment, also assemblies of such devices and equipment with associated interconnections, accessories, enclosures and supporting structures, intended in principle for use in connection with generation, transmission, distribution and conversion of electric energy, with Gas insulation
Low Voltage (LV)	Any set of nominal voltage levels exceeding 50 V and up to 1 kV a.c. or 1,5 kV d.c.
Medium Voltage (MV)	System with a nominal operative voltage between the phases higher than 1 kV to 35 kV included. NOTE: The boundary value between medium voltage and high voltage depends on local and historical circumstances or on common usage. Nevertheless for internal standardization purposes, medium voltage is defined as a system with a nominal operative voltage between the phases higher than 1 kV to 35 kV included”
Technical Conformity Assessment (TCA)	A “conformity assessment with respect to “specified requirements” consists in functional, dimensional, constructional and test characteristics required for a product (or a series of products) and quoted in technical specifications and quality requirements issued by Enel Group distribution companies. This also includes the verification of conformity with respect to local applicable regulation and laws and possession of relevant requested certifications
Type A documentation	Not confidential documents used for product manufacturing and management from which it is possible to verify the product conformity to all technical specification requirements, directly or indirectly
TCA report	Document describing the activities carried out for TCA
TCA dossier	Set of final documents delivered by the Supplier for the TCA

Technical Specification code: GRI-GRI-MAT-E&C-0002

Version no.3 dated 03/10/2022

Subject: Enel Grids - GSM001 - Medium Voltage Gas Insulated Switchgears for secondary distribution substations

Application Areas

Perimeter: Global

Staff Function: -

Service Function: -

Business Line: Enel Grids

7 DESCRIPTION

7.1 LIST OF COMPONENTS

Type code	Configuration	GIS technology	Distribution Company and Contry	Country Code	Rated frequency fr [Hz]	Rated normal current I_r [A]	Rated Voltage U_r [kV]	Rated power-frequency withstand voltage U_d [kV]	Rated lightning impulse withstand voltage U_p [kV]	Rated short-time withstand current Ik [kA]	Rated duration of short circuit t_k [s]	Rated peak withstand current I_p [kA]	Rated supply voltage of closing and opening devices and of auxiliary circuit Vcc	IK degree	IP degree	SD - Mechanical endurance class- Electrical endurance class	ES - Mechanical endurance class- Electrical endurance class	Classification IAC	Arc fault current and duration I_A (kA); t_A (s)	Protective Coating	Command Type	Busbar Socket	Description
GSM001/1	2L+1T	SF6	ED-Italy	162116	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6 FREE	ED-Italy	140117	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6	ED-Chile	140275	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6	ED-Colombia	140401	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6 FREE	ED-Colombia	140596	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6	ED-Romania	140042	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6 FREE	ED-Romania	140117	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6	ED-Spain	140224	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 2L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6 FREE	ED-Spain	140806	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 2L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6	ED-Brazil	141183	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6 FREE	ED-Brazil	140828	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6	ED-Argentina	0109-0492	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6 FREE	ED-Argentina	0109-0499	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/1	2L+1T	SF6 FREE	ED-Chile	141201	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/1
GSM001/2	3L+1T	SF6 FREE	ED-Argentina	0109-0500	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6	ED-Argentina	0109-0493	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6	ED-Italy	162117	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6 FREE	ED-Italy	140318	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6	ED-Colombia	140402	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6	ED-Romania	140043	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6 FREE	ED-Romania	140318	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6	ED-Spain	140226	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6 FREE	ED-Spain	140827	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6	ED-Brazil	141186	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6 FREE	ED-Brazil	140827	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6 FREE	ED-Colombia	140770	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/2
GSM001/2	3L+1T	SF6	ED-Chile	141195	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/2

Technical Specification code: GRI-GRI-MAT-E&C-0002

Version no.3 dated 03/10/2022

Subject: Enel Grids - GSM001 - Medium Voltage Gas Insulated Switchgears for secondary distribution substations

Application Areas

Perimeter: Global

Staff Function: -

Service Function: -

Business Line: Enel Grids

Type code	Configuration	GIS technology	Distribution Company and Contry	Country Code	Rated frequency fr [Hz]	Rated normal current I_r [A]	Rated Voltage U_r [kV]	Rated power-frequency withstand voltage U_d [kV]	Rated lightning impulse withstand voltage U_p [kV]	Rated short-time withstand current Ik [kA]	Rated duration of short circuit t_k [s]	Rated peak withstand current I_p [kA]	Rated supply voltage of closing and opening devices and of auxiliary circuit Vcc	IK degree	IP degree	SD - Mechanical endurance class- Electrical endurance class	ES - Mechanical endurance class- Electrical endurance class	Classification IAC	Arc fault current and duration I_A (kA); t_A (s)	Protective Coating	Command Type	Busbar Socket	Description
GSM001/3	3L	SF6	ED-Italy	162118	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6 FREE	ED-Italy	140319	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6	ED-Chile	140276	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6	ED-Colombia	140403	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6	ED-Romania	140044	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6 FREE	ED-Romania	140319	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6 FREE	ED-Spain	140826	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6	ED-Brazil	141180	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6 FREE	ED-Brazil	140826	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6 FREE	ED-Argentina	0109-0504	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6	ED-Argentina	0109-0496	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6 FREE	ED-Colombia	140771	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/3	3L	SF6 FREE	ED-Chile	141199	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/3
GSM001/4	4L+1T	SF6 FREE	ED-Argentina	0109-0503	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6	ED-Italy	162119	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6 FREE	ED-Italy	140320	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6	ED-Colombia	140404	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6	ED-Romania	140045	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6 FREE	ED-Romania	140320	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6	ED-Brazil	141178	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6 FREE	ED-Brazil	140824	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6	ED-Argentina	0109-0495	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6 FREE	ED-Colombia	140772	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6 FREE	ED-Chile	141198	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/4	4L+1T	SF6	ED-Chile	141194	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/4
GSM001/5	4L	SF6	ED-Italy	162120	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/5	4L	SF6 FREE	ED-Italy	140321	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/5	4L	SF6	ED-Romania	140046	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/5	4L	SF6 FREE	ED-Romania	140321	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/5	4L	SF6	ED-Brazil	141179	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/5	4L	SF6 FREE	ED-Brazil	140825	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/5	4L	SF6 FREE	ED-Argentina	0109-0505	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/5	4L	SF6	ED-Argentina	0109-0498	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/5	4L	SF6 FREE	ED-Chile	141197	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/5	4L	SF6	ED-Chile	141193	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 24 kV 16 kA AFL IP3X C3H GSM001/5
GSM001/6	2L+1T	SF6	ED-Spain	140925	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	20;1	C5H	Electrical	No	MV Switchgear 2L+1T SF6 24 kV 20 kA AFL IP51 C5H GSM001/6
GSM001/7	2L+1T	SF6	ED-Brazil	141175	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 2L+1T SF6 24 kV 16 kA AFL IP51 C5H GSM001/7
GSM001/7	2L+1T	SF6 FREE	ED-Brazil	140821	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 24 kV 16 kA AFL IP51 C5H GSM001/7

Technical Specification code: GRI-GRI-MAT-E&C-0002

Version no.3 dated 03/10/2022

Subject: Enel Grids - GSM001 - Medium Voltage Gas Insulated Switchgears for secondary distribution substations

Application Areas

Perimeter: Global

Staff Function: -

Service Function: -

Business Line: Enel Grids

Type code	Configuration	GIS technology	Distribution Company and Contry	Country Code	Rated frequency fr [Hz]	Rated normal current I_r [A]	Rated Voltage U_r [kV]	Rated power-frequency withstand voltage U_d [kV]	Rated lightning impulse withstand voltage U_p [kV]	Rated short-time withstand current Ik [kA]	Rated duration of short circuit t_k [s]	Rated peak withstand current I_p [kA]	Rated supply voltage of closing and opening devices and of auxiliary circuit Vcc	IK degree	IP degree	SD - Mechanical endurance class- Electrical endurance class	ES - Mechanical endurance class- Electrical endurance class	Classification IAC	Arc fault current and duration I_A (kA); t_A (s)	Protective Coating	Command Type	Busbar Socket	Description
GSM001/8	2L+2T	SF6 FREE	ED-Italy	140322	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+2T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/8	2L+2T	SF6	ED-Colombia	140405	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+2T SF6 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/8	2L+2T	SF6	ED-Romania	140047	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+2T SF6 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/8	2L+2T	SF6 FREE	ED-Romania	140322	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+2T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/8	2L+2T	SF6	ED-Spain	140225	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 2L+2T SF6 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/8	2L+2T	SF6 FREE	ED-Spain	140805	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 2L+2T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/8	2L+2T	SF6 FREE	ED-Argentina	0109-0502	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+2T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/8	2L+2T	SF6	ED-Argentina	0109-0494	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+2T SF6 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/8	2L+2T	SF6 FREE	ED-Colombia	140773	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+2T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/8	2L+2T	SF6	ED-Italy	140425	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+2T SF6 24 kV 16 kA AFL IP3X C3H GSM001/8
GSM001/9	3L+1T	SF6	ED-Spain	140927	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	20;1	C5H	Electrical	No	MV Switchgear 3L+1T SF6 24 kV 20 kA AFL IP51 C5H GSM001/9
GSM001/10	1L	SF6	ED-Spain	140294	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 1L SF6 24 kV 16 kA AFL IP3X C3H GSM001/10
GSM001/10	1L	SF6 FREE	ED-Spain	140825	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 1L SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/10
GSM001/11	3L	SF6	ED-Brazil	141173	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L SF6 24 kV 16 kA AFL IP51 C5H GSM001/11
GSM001/11	3L	SF6 FREE	ED-Brazil	140819	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L SF6 FREE 24 kV 16 kA AFL IP51 C5H GSM001/11
GSM001/12	4L+1T	SF6	ED-Brazil	141171	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 4L+1T SF6 24 kV 16 kA AFL IP51 C5H GSM001/12
GSM001/12	4L+1T	SF6 FREE	ED-Brazil	140817	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 4L+1T SF6 FREE 24 kV 16 kA AFL IP51 C5H GSM001/12
GSM001/13	4L	SF6	ED-Brazil	141172	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 4L SF6 24 kV 16 kA AFL IP51 C5H GSM001/13
GSM001/13	4L	SF6 FREE	ED-Brazil	140818	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 4L SF6 FREE 24 kV 16 kA AFL IP51 C5H GSM001/13
GSM001/14	2L+1T	SF6	ED-Peru	140342	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C5H	Electrical	Yes	MV Switchgear 2L+1T SF6 24 kV 20 kA AFL IP3X C5H GSM001/14
GSM001/14	2L+1T	SF6 FREE	ED-Peru	140792	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C5H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 24 kV 20 kA AFL IP3X C5H GSM001/14
GSM001/15	3L+1T	SF6	ED-Peru	140339	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C5H	Electrical	Yes	MV Switchgear 3L+1T SF6 24 kV 20 kA AFL IP3X C5H GSM001/15
GSM001/16	1T	SF6	ED-Spain	140298	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/16
GSM001/16	1T	SF6 FREE	ED-Spain	140803	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/16
GSM001/17	2L+1T	SF6 FREE	ED-Spain	140802	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 2L+1T SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/17
GSM001/17	2L+1T	SF6	ED-Spain	140483	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 2L+1T SF6 24 kV 20 kA AFL IP3X C3H GSM001/17
GSM001/18	3L+1T	SF6 FREE	ED-Spain	140800	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 3L+1T SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/18
GSM001/18	3L+1T	SF6	ED-Spain	140281	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 3L+1T SF6 24 kV 20 kA AFL IP3X C3H GSM001/18
GSM001/19	2L+2T	SF6 FREE	ED-Spain	140801	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 2L+2T SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/19
GSM001/19	2L+2T	SF6	ED-Spain	140280	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 2L+2T SF6 24 kV 20 kA AFL IP3X C3H GSM001/19
GSM001/20	3L	SF6 FREE	ED-Spain	140804	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 3L SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/20
GSM001/20	3L	SF6	ED-Spain	140282	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 3L SF6 24 kV 20 kA AFL IP3X C3H GSM001/20
GSM001/21	1L	SF6 FREE	ED-Spain	140824	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 1L SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/21
GSM001/21	1L	SF6	ED-Spain	140478	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 1L SF6 24 kV 20 kA AFL IP3X C3H GSM001/21
GSM001/22	2L+2T	SF6	ED-Spain	140928	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	20;1	C5H	Electrical	No	MV Switchgear 2L+2T SF6 24 kV 20 kA AFL IP51 C5H GSM001/22
GSM001/23	2L+1T	SF6	ED-Brazil	140835	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 2L+1T SF6 36 kV 16 kA AFL IP51 C5H GSM001/23
GSM001/23	2L+1T	SF6 FREE	ED-Brazil	140811	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 36 kV 16 kA AFL IP51 C5H GSM001/23
GSM001/24	3L+1T	SF6	ED-Brazil	140834	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L+1T SF6 36 kV 16 kA AFL IP51 C5H GSM001/24
GSM001/24	3L+1T	SF6 FREE	ED-Brazil	140810	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L+1T SF6 FREE 36 kV 16 kA AFL IP51 C5H GSM001/24

Technical Specification code: GRI-GRI-MAT-E&C-0002

Version no.3 dated 03/10/2022

Subject: Enel Grids - GSM001 - Medium Voltage Gas Insulated Switchgears for secondary distribution substations

Application Areas

Perimeter: Global

Staff Function: -

Service Function: -

Business Line: Enel Grids

Type code	Configuration	GIS technology	Distribution Company and Contry	Country Code	Rated frequency fr [Hz]	Rated normal current I_r [A]	Rated Voltage U_r [kV]	Rated power-frequency withstand voltage U_d [kV]	Rated lightning impulse withstand voltage U_p [kV]	Rated short-time withstand current Ik [kA]	Rated duration of short circuit t_k [s]	Rated peak withstand current I_p [kA]	Rated supply voltage of closing and opening devices and of auxiliary circuit Vcc	IK degree	IP degree	SD - Mechanical endurance class- Electrical endurance class	ES - Mechanical endurance class- Electrical endurance class	Classification IAC	Arc fault current and duration I_A (kA); t_A (s)	Protective Coating	Command Type	Busbar Socket	Description
GSM001/25	3L	SF6	ED-Spain	140935	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	20;1	C5H	Electrical	No	MV Switchgear 3L SF6 24 kV 20 kA AFL IP51 C5H GSM001/25
GSM001/26	1T	SF6 FREE	ED-Spain	140799	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 1T SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/26
GSM001/26	1T	SF6	ED-Spain	140255	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 1T SF6 24 kV 20 kA AFL IP3X C3H GSM001/26
GSM001/27	2L+1T	SF6 FREE	ED-Spain	140798	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 2L+1T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/27
GSM001/27	2L+1T	SF6 FREE	ED-Italy	140323	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/27
GSM001/27	2L+1T	SF6	ED-Spain	140285	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 2L+1T SF6 36 kV 16 kA AFL IP3X C3H GSM001/27
GSM001/27	2L+1T	SF6	ED-Brazil	141157	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 36 kV 16 kA AFL IP3X C3H GSM001/27
GSM001/27	2L+1T	SF6 FREE	ED-Brazil	140814	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/27
GSM001/27	2L+1T	SF6	ED-Italy	140195	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 2L+1T SF6 36 kV 16 kA AFL IP3X C3H GSM001/27
GSM001/28	3L+1T	SF6	ED-Italy	140419	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 36 kV 16 kA AFL IP3X C3H GSM001/28
GSM001/28	3L+1T	SF6 FREE	ED-Spain	140797	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+1T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/28
GSM001/28	3L+1T	SF6 FREE	ED-Italy	140324	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/28
GSM001/28	3L+1T	SF6	ED-Spain	140287	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+1T SF6 36 kV 16 kA AFL IP3X C3H GSM001/28
GSM001/28	3L+1T	SF6	ED-Brazil	140989	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 36 kV 16 kA AFL IP3X C3H GSM001/28
GSM001/28	3L+1T	SF6 FREE	ED-Brazil	140813	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+1T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/28
GSM001/29	2L+2T	SF6 FREE	ED-Spain	140796	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 2L+2T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/29
GSM001/29	2L+2T	SF6	ED-Spain	140286	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 2L+2T SF6 36 kV 16 kA AFL IP3X C3H GSM001/29
GSM001/30	1L	SF6 FREE	ED-Spain	140793	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 1L SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/30
GSM001/30	1L	SF6	ED-Spain	140296	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 1L SF6 36 kV 16 kA AFL IP3X C3H GSM001/30
GSM001/31	1L	SF6	ED-Spain	140920	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	20;1	C5H	Electrical	No	MV Switchgear 1L SF6 24 kV 20 kA AFL IP51 C5H GSM001/31
GSM001/32	3L	SF6	ED-Brazil	140833	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L SF6 36 kV 16 kA AFL IP51 C5H GSM001/32
GSM001/32	3L	SF6 FREE	ED-Brazil	140809	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L SF6 FREE 36 kV 16 kA AFL IP51 C5H GSM001/32
GSM001/33	3L+1T	SF6	ED-Brazil	141174	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L+1T SF6 24 kV 16 kA AFL IP51 C5H GSM001/33
GSM001/33	3L+1T	SF6 FREE	ED-Brazil	140820	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L+1T SF6 FREE 24 kV 16 kA AFL IP51 C5H GSM001/33
GSM001/34	3L+2T	SF6	ED-Brazil	140837	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+2T SF6 36 kV 16 kA AFL IP3X C3H GSM001/34
GSM001/34	3L+2T	SF6 FREE	ED-Brazil	140802	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+2T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/34
GSM001/35	1T	SF6 FREE	ED-Spain	140795	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 1T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/35
GSM001/35	1T	SF6	ED-Spain	140299	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 1T SF6 36 kV 16 kA AFL IP3X C3H GSM001/35
GSM001/36	2L+1T	SF6 FREE	ED-Spain	140794	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 2L+1T SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/36
GSM001/36	2L+1T	SF6	ED-Spain	140481	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 2L+1T SF6 36 kV 20 kA AFL IP3X C3H GSM001/36
GSM001/37	3L+1T	SF6 FREE	ED-Spain	140792	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L+1T SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/37
GSM001/37	3L+1T	SF6	ED-Spain	140292	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L+1T SF6 36 kV 20 kA AFL IP3X C3H GSM001/37
GSM001/38	2L+2T	SF6 FREE	ED-Spain	140791	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 2L+2T SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/38
GSM001/38	2L+2T	SF6	ED-Spain	140291	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 2L+2T SF6 36 kV 20 kA AFL IP3X C3H GSM001/38
GSM001/39	3L	SF6 FREE	ED-Spain	140790	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/39
GSM001/39	3L	SF6	ED-Spain	140293	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L SF6 36 kV 20 kA AFL IP3X C3H GSM001/39
GSM001/40	1L	SF6 FREE	ED-Spain	140789	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 1L SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/40
GSM001/40	1L	SF6	ED-Spain	140477	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 1L SF6 36 kV 20 kA AFL IP3X C3H GSM001/40

Technical Specification code: GRI-GRI-MAT-E&C-0002

Version no.3 dated 03/10/2022

Subject: Enel Grids - GSM001 - Medium Voltage Gas Insulated Switchgears for secondary distribution substations

Application Areas

Perimeter: Global

Staff Function: -

Service Function: -

Business Line: Enel Grids

Type code	Configuration	GIS technology	Distribution Company and Contry	Country Code	Rated frequency fr [Hz]	Rated normal current I_r [A]	Rated Voltage U_r [kV]	Rated power-frequency withstand voltage U_d [kV]	Rated lightning impulse withstand voltage U_p [kV]	Rated short-time withstand current Ik [kA]	Rated duration of short circuit t_k [s]	Rated peak withstand current I_p [kA]	Rated supply voltage of closing and opening devices and of auxiliary circuit Vcc	IK degree	IP degree	SD - Mechanical endurance class- Electrical endurance class	ES - Mechanical endurance class- Electrical endurance class	Classification IAC	Arc fault current and duration I_A (kA); t_A (s)	Protective Coating	Command Type	Busbar Socket	Description
GSM001/41	3L+2T	SF6	ED-Brazil	140830	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L+2T SF6 36 kV 16 kA AFL IP51 C5H GSM001/41
GSM001/41	3L+2T	SF6 FREE	ED-Brazil	140806	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L+2T SF6 FREE 36 kV 16 kA AFL IP51 C5H GSM001/41
GSM001/42	3L+2T	SF6	ED-Brazil	141177	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+2T SF6 24 kV 16 kA AFL IP3X C3H GSM001/42
GSM001/42	3L+2T	SF6 FREE	ED-Brazil	140823	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+2T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/42
GSM001/42	3L+2T	SF6 FREE	ED-Argentina	0109-0501	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+2T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/42
GSM001/42	3L+2T	SF6	ED-Argentina	0109-0497	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L+2T SF6 24 kV 16 kA AFL IP3X C3H GSM001/42
GSM001/43	3L+2T	SF6	ED-Brazil	141159	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L+2T SF6 24 kV 16 kA AFL IP51 C5H GSM001/43
GSM001/43	3L+2T	SF6 FREE	ED-Brazil	140816	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 3L+2T SF6 FREE 24 kV 16 kA AFL IP51 C5H GSM001/43
GSM001/44	4L	SF6	ED-Brazil	140838	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 36 kV 16 kA AFL IP3X C3H GSM001/44
GSM001/44	4L	SF6 FREE	ED-Brazil	140804	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/44
GSM001/45	1T	SF6 FREE	ED-Spain	140788	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 1T SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/45
GSM001/45	1T	SF6	ED-Spain	140263	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 1T SF6 36 kV 20 kA AFL IP3X C3H GSM001/45
GSM001/46	1L+1T	SF6	ED-Italy	140001	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 1L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/46
GSM001/46	1L+1T	SF6 FREE	ED-Italy	140317	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 1L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/46
GSM001/46	1L+1T	SF6 FREE	ED-Romania	140317	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 1L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/46
GSM001/46	1L+1T	SF6 FREE	ED-Chile	141196	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 1L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/46
GSM001/46	1L+1T	SF6	ED-Chile	141192	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 1L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/46
GSM001/47	1T	SF6	ED-Spain	140934	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	20;1	C5H	Manual	No	MV Switchgear 1T SF6 24 kV 20 kA AFL IP51 C5H GSM001/47
GSM001/48	3L+AUX 15/20KV	SF6	ED-Spain	140922	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	20;1	C5H	Electrical	No	MV Switchgear 3L+AUX 15/20KV SF6 24 kV 20 kA AFL IP51 C5H GSM001/48
GSM001/49	4L	SF6	ED-Brazil	140832	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 4L SF6 36 kV 16 kA AFL IP51 C5H GSM001/49
GSM001/49	4L	SF6 FREE	ED-Brazil	140808	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 4L SF6 FREE 36 kV 16 kA AFL IP51 C5H GSM001/49
GSM001/50	AUX 15/20KV	SF6	ED-Spain	140921	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	20;1	C5H	Electrical	No	MV Switchgear AUX 15/20KV SF6 24 kV 20 kA AFL IP51 C5H GSM001/50
GSM001/54	3L+AUX 10/15KV	SF6 FREE	ED-Spain	140814	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 10/15KV SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/54
GSM001/54	3L+AUX 10/15KV	SF6	ED-Spain	140746	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 10/15KV SF6 24 kV 16 kA AFL IP3X C3H GSM001/54
GSM001/55	3L+AUX 15/20KV	SF6 FREE	ED-Spain	140822	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 15/20KV SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/55
GSM001/55	3L+AUX 15/20KV	SF6	ED-Spain	140747	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 15/20KV SF6 24 kV 16 kA AFL IP3X C3H GSM001/55
GSM001/56	AUX 10/15KV	SF6 FREE	ED-Spain	140821	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear AUX 10/15KV SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/56
GSM001/56	AUX 10/15KV	SF6	ED-Spain	140750	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear AUX 10/15KV SF6 24 kV 16 kA AFL IP3X C3H GSM001/56
GSM001/57	AUX 15/20KV	SF6 FREE	ED-Spain	140820	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear AUX 15/20KV SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/57
GSM001/57	AUX 15/20KV	SF6	ED-Spain	140744	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear AUX 15/20KV SF6 24 kV 16 kA AFL IP3X C3H GSM001/57
GSM001/58	AUX 10/15KV	SF6 FREE	ED-Spain	140817	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear AUX 10/15KV SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/58
GSM001/58	AUX 10/15KV	SF6	ED-Spain	140724	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear AUX 10/15KV SF6 24 kV 20 kA AFL IP3X C3H GSM001/58
GSM001/59	AUX 15/20KV	SF6 FREE	ED-Spain	140816	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear AUX 15/20KV SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/59
GSM001/59	AUX 15/20KV	SF6	ED-Spain	140722	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear AUX 15/20KV SF6 24 kV 20 kA AFL IP3X C3H GSM001/59
GSM001/60	3L+AUX 25KV	SF6 FREE	ED-Spain	140815	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 25KV SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/60
GSM001/60	3L+AUX 25KV	SF6	ED-Spain	140749	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 25KV SF6 36 kV 16 kA AFL IP3X C3H GSM001/60
GSM001/61	3L+AUX 11KV	SF6 FREE	ED-Spain	140813	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 11KV SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/61
GSM001/61	3L+AUX 11KV	SF6	ED-Spain	140745	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 11KV SF6 36 kV 16 kA AFL IP3X C3H GSM001/61

Technical Specification code: GRI-GRI-MAT-E&C-0002

Version no.3 dated 03/10/2022

Subject: Enel Grids - GSM001 - Medium Voltage Gas Insulated Switchgears for secondary distribution substations

Application Areas

Perimeter: Global

Staff Function: -

Service Function: -

Business Line: Enel Grids

Type code	Configuration	GIS technology	Distribution Company and Contry	Country Code	Rated frequency fr [Hz]	Rated normal current I_r [A]	Rated Voltage U_r [kV]	Rated power-frequency withstand voltage U_d [kV]	Rated lightning impulse withstand voltage U_p [kV]	Rated short-time withstand current Ik [kA]	Rated duration of short circuit t_k [s]	Rated peak withstand current I_p [kA]	Rated supply voltage of closing and opening devices and of auxiliary circuit Vcc	IK degree	IP degree	SD - Mechanical endurance class- Electrical endurance class	ES - Mechanical endurance class- Electrical endurance class	Classification IAC	Arc fault current and duration I_A (kA); t_A (s)	Protective Coating	Command Type	Busbar Socket	Description
GSM001/62	AUX 25KV	SF6 FREE	ED-Spain	140812	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear AUX 25KV SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/62
GSM001/62	AUX 25KV	SF6	ED-Spain	140743	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear AUX 25KV SF6 36 kV 16 kA AFL IP3X C3H GSM001/62
GSM001/63	AUX 11KV	SF6 FREE	ED-Spain	140811	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear AUX 11KV SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/63
GSM001/63	AUX 11KV	SF6	ED-Spain	140755	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear AUX 11KV SF6 36 kV 16 kA AFL IP3X C3H GSM001/63
GSM001/64	AUX 25KV	SF6 FREE	ED-Spain	140808	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear AUX 25KV SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/64
GSM001/64	AUX 25KV	SF6	ED-Spain	140721	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear AUX 25KV SF6 36 kV 20 kA AFL IP3X C3H GSM001/64
GSM001/65	AUX 11KV	SF6 FREE	ED-Spain	140807	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear AUX 11KV SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/65
GSM001/65	AUX 11KV	SF6	ED-Spain	140723	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear AUX 11KV SF6 36 kV 20 kA AFL IP3X C3H GSM001/65
GSM001/66	3L	SF6 FREE	ED-Spain	140823	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	No	MV Switchgear 3L SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/66
GSM001/66	3L	SF6	ED-Brazil	140840	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 36 kV 16 kA AFL IP3X C3H GSM001/66
GSM001/66	3L	SF6 FREE	ED-Brazil	140812	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 3L SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/66
GSM001/67	3L+AUX 10/15KV	SF6 FREE	ED-Spain	140819	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 3L+AUX 10/15KV SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/67
GSM001/67	3L+AUX 10/15KV	SF6	ED-Spain	140717	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 10/15KV SF6 24 kV 20 kA AFL IP3X C3H GSM001/67
GSM001/68	3L+AUX 15/20KV	SF6 FREE	ED-Spain	140818	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20;1	C3H	Electrical	No	MV Switchgear 3L+AUX 15/20KV SF6 FREE 24 kV 20 kA AFL IP3X C3H GSM001/68
GSM001/68	3L+AUX 15/20KV	SF6	ED-Spain	140718	50 and 60	630	24	50	125	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 15/20KV SF6 24 kV 20 kA AFL IP3X C3H GSM001/68
GSM001/69	3L+AUX 25KV	SF6 FREE	ED-Spain	140810	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 25KV SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/69
GSM001/69	3L+AUX 25KV	SF6	ED-Spain	140719	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 25KV SF6 36 kV 20 kA AFL IP3X C3H GSM001/69
GSM001/70	3L+AUX 11KV	SF6 FREE	ED-Spain	140809	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 11KV SF6 FREE 36 kV 20 kA AFL IP3X C3H GSM001/70
GSM001/70	3L+AUX 11KV	SF6	ED-Spain	140720	50 and 60	630	36	70	170	20	1	52	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	20; 1	C3H	Electrical	No	MV Switchgear 3L+AUX 11KV SF6 36 kV 20 kA AFL IP3X C3H GSM001/70
GSM001/71	4L+1T	SF6	ED-Brazil	140839	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 36 kV 16 kA AFL IP3X C3H GSM001/71
GSM001/71	4L+1T	SF6 FREE	ED-Brazil	140801	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 4L+1T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/71
GSM001/72	4L+1T	SF6	ED-Brazil	140831	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 4L+1T SF6 36 kV 16 kA AFL IP51 C5H GSM001/72
GSM001/72	4L+1T	SF6 FREE	ED-Brazil	140807	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 4L+1T SF6 FREE 36 kV 16 kA AFL IP51 C5H GSM001/72
GSM001/73	5L+1T	SF6	ED-Brazil	141176	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 5L+1T SF6 24 kV 16 kA AFL IP3X C3H GSM001/73
GSM001/73	5L+1T	SF6 FREE	ED-Brazil	140822	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 5L+1T SF6 FREE 24 kV 16 kA AFL IP3X C3H GSM001/73
GSM001/74	5L+1T	SF6	ED-Brazil	141158	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 5L+1T SF6 24 kV 16 kA AFL IP51 C5H GSM001/74
GSM001/74	5L+1T	SF6 FREE	ED-Brazil	140815	50 and 60	630	24	50	125	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 5L+1T SF6 FREE 24 kV 16 kA AFL IP51 C5H GSM001/74
GSM001/75	5L+1T	SF6	ED-Brazil	140836	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 5L+1T SF6 36 kV 16 kA AFL IP3X C3H GSM001/75
GSM001/75	5L+1T	SF6 FREE	ED-Brazil	140803	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP3X	M1 – E3	M0 – E2	AFL	16; 1	C3H	Electrical	Yes	MV Switchgear 5L+1T SF6 FREE 36 kV 16 kA AFL IP3X C3H GSM001/75
GSM001/76	5L+1T	SF6	ED-Brazil	140829	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 5L+1T SF6 36 kV 16 kA AFL IP51 C5H GSM001/76
GSM001/76	5L+1T	SF6 FREE	ED-Brazil	140805	50 and 60	630	36	70	170	16	1	41,6	24V -15% +20%	IK08	IP51	M1 – E3	M0 – E2	AFL	16; 1	C5H	Electrical	Yes	MV Switchgear 5L+1T SF6 FREE 36 kV 16 kA AFL IP51 C5H GSM001/76

7.2 SERVICE CONDITIONS

Switchgears shall be compliant with normal service conditions for indoor installation, as defined in IEC 62271-1, considering as minimum value of ambient temperature -15°C.

Maximum reference altitude shall be 1.500 m. (For Colombia 2.700 m)

The Manufacturer shall consider de-ratings related to altitudes up to 3.000 m for specific installations, these de-rating shall be subjected to **enel** approval.

Seismic level of apparatuses shall be compliant with:

- seismic severity 1 - PGA 0,5 g.
- acceptance class 2 according to IEC TS 62271-210.

Switchgears shall be suitable for installation in three-phases MV effectively and non-effectively earthed neutral system (solidly earthed, isolated, impedance earthed, resonant earthed and arc-suppression-coil-earth neutral system).

Unless otherwise indicated, the carpentry shall have a protective coating compliant with ISO 12944 with the following minimum features:

- Durability: High (H).
- Atmospheric corrosivity category:C3.

7.3 TECHNICAL CHARACTERISTICS

7.3.1 Switchgear characteristics

The switchgear shall be compliant with IEC 62271-200.

The solution for the insulation of the switchgear shall be SF6 or alternative gases (e.g. Dry air, Gases containing fluoroketone or perfluoronitrile, etc.). For SF6 insulation gas the characteristics of the *Virgin* gas shall meet the requirements of IEC 60376 and the humidity content shall be less than 15 ppm in weight. In addition, no condensation shall occur during operation at the minimum temperatures described in §7.2.
For SF6 switchgear technology the gas-filled compartment volume shall be less than 1500 liters, its filling shall be performed such as the maximum relative pressure at 45 °C does not exceed 0,5 Bar. For SF6-free switchgear technology any solution is acceptable.

The expected operating life of the equipment, regarding leakage performance, shall be 40 years, the gas pressure shall remain greater than (or equal) the minimum operating value.

To fulfil the expected operating life requirement, the leakage rate considered to be 0,1 % per year according to IEC 62271-1.

The tank shall be exclusively filled with gas in the factory. The elements used for filling the gas in the factory, or to recover it at the end of life, shall be identified with a self-adhesive plate protected from accidental shocks. It shall contain the following information in the country language *Remove the cap only for recovery purposes at the end of life of the switchgear.*

Modular MV Switchgears shall be designed such as busbar extension is foreseen from both sides of the functional unit (left and right).

Compact MV Switchgears, also known as Ring Main Unit (RMU), could be manufactured with a single gas insulated tank containing the busbars, switching devices, and interconnections or from modular functional units assembled along the busbars by means of coupling device.

When the RMU is built-on using modular *units*, the manufacturer shall ensure that transport, handling, and installation is equivalent to a Compact solution. In addition, the coupling device shall not be accessible, i.e., IP3X between modular units shall be ensured.

Each gas–filled compartment shall have an overpressure valve, equipped with a metallic disc for protection against accidental stress and placed at a suitable distance from the valve.

MV Switchgears shall be built-on with external plug-in type bushings according to EN 50181, particularly:

- Line Functional Unit (L): Plug-in Type C bushings, 630 A rated current, equipped with Low Power Voltage Transformers (LPVT) according to GSCT005.
- Transformer Protection Functional Unit (T): Plug-in Type A bushings, 250 A rated current, for 24 kV switchgears and Type B for 36 kV Switchgears.

Equipment using SF6 FREE GAS shall have the front of the electrical control in green (RAL code to be defined in agreement with Enel).

7.3.2 Rated characteristics

Rated Voltage (U_r)		[kV]	24	36
Rated short-duration power-frequency withstand voltage (U_d) – Common value		[kV]	50	70
Rated short-duration power-frequency withstand voltage (U_d) – Across the isolating distance		[kV]	60	80
Rated lightning impulse withstand voltage (U_p) – Common value		[kV]	125	170
Rated lightning impulse withstand voltage (U_p) - Across the isolating distance		[kV]	145	195
Rated frequency (f_r) (*)		[Hz]	50 and 60	
Rated normal current (I_r)				
- for busbars and lines		[A]	630	
- for transformer derivation		[A]	200	
Rated short-time withstand current (I_k)		[kA]	16/20	
Rated peak withstand current (I_p)		[kA]	41,6/52	
Rated duration of short-circuit (t_k)		[s]	1	
Degree of protection for the whole enclosure except for the operating devices:				
- Argentina			IP3X**	
- Italy				
- Romania				
- Spain				
- Brazil				
- Chile				
- Colombia				
- Peru				
Degree of protection for the operating devices (even with the operating lever inserted)			IP2XC	
Degree of protection of the external part of the switchgear			IK08	
Internal arc test	Type of accessibility		AFL	
	Rated arc fault current (I_A)	[kA]	16/20	
	Rated arc fault duration (t_A)	[s]	1	
Rated supply voltage of closing and opening devices and of auxiliary circuit		[Vcc]	24V -15% +20%	
Expected operating life regarding leakage performance			40 years	

Table 2 - Characteristics of the switchgear

(*) The range of rated frequencies can vary according to the National Regulations and shall not affect the proper behavior of the equipment.

(**) For special applications IP51 could be requested.