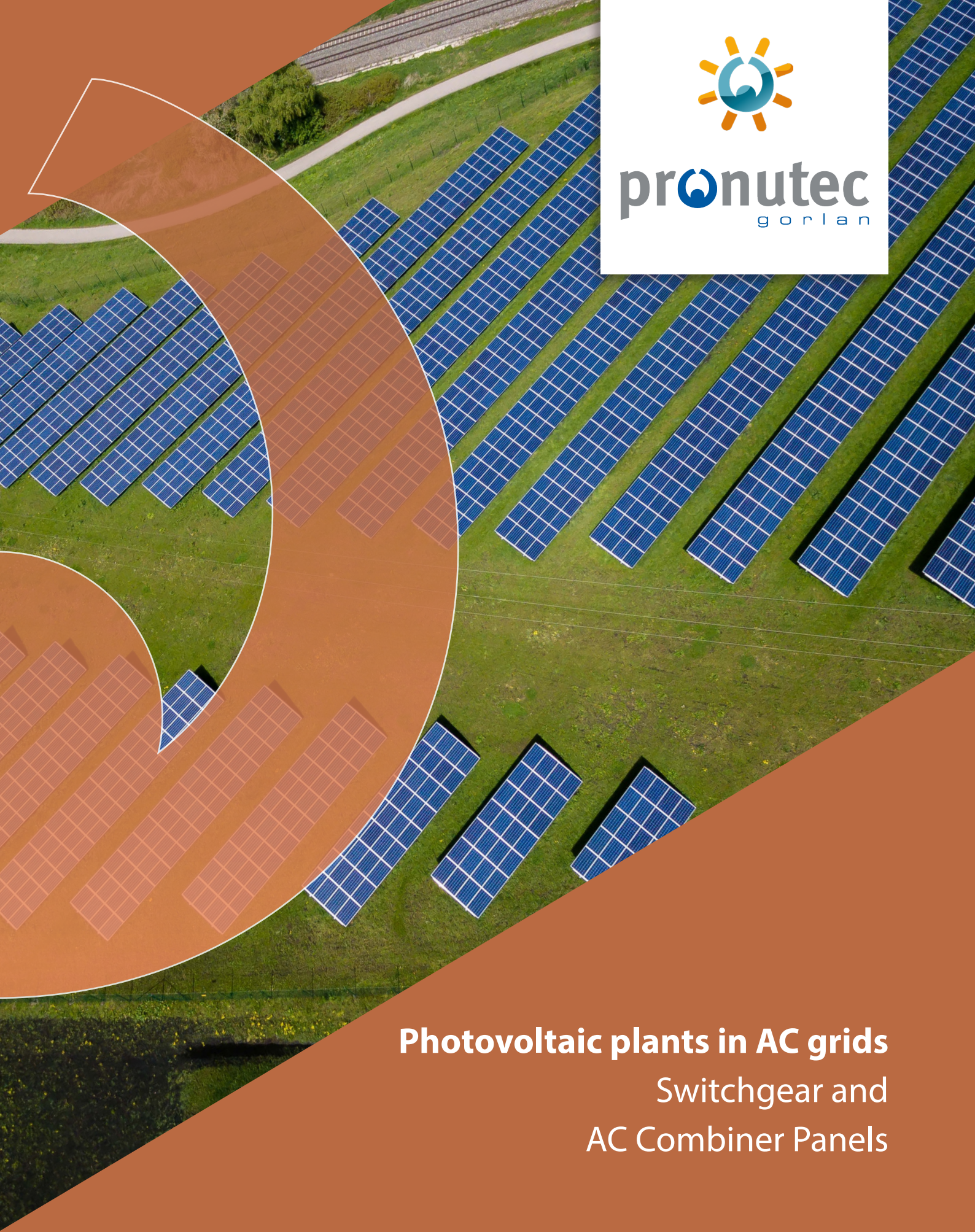
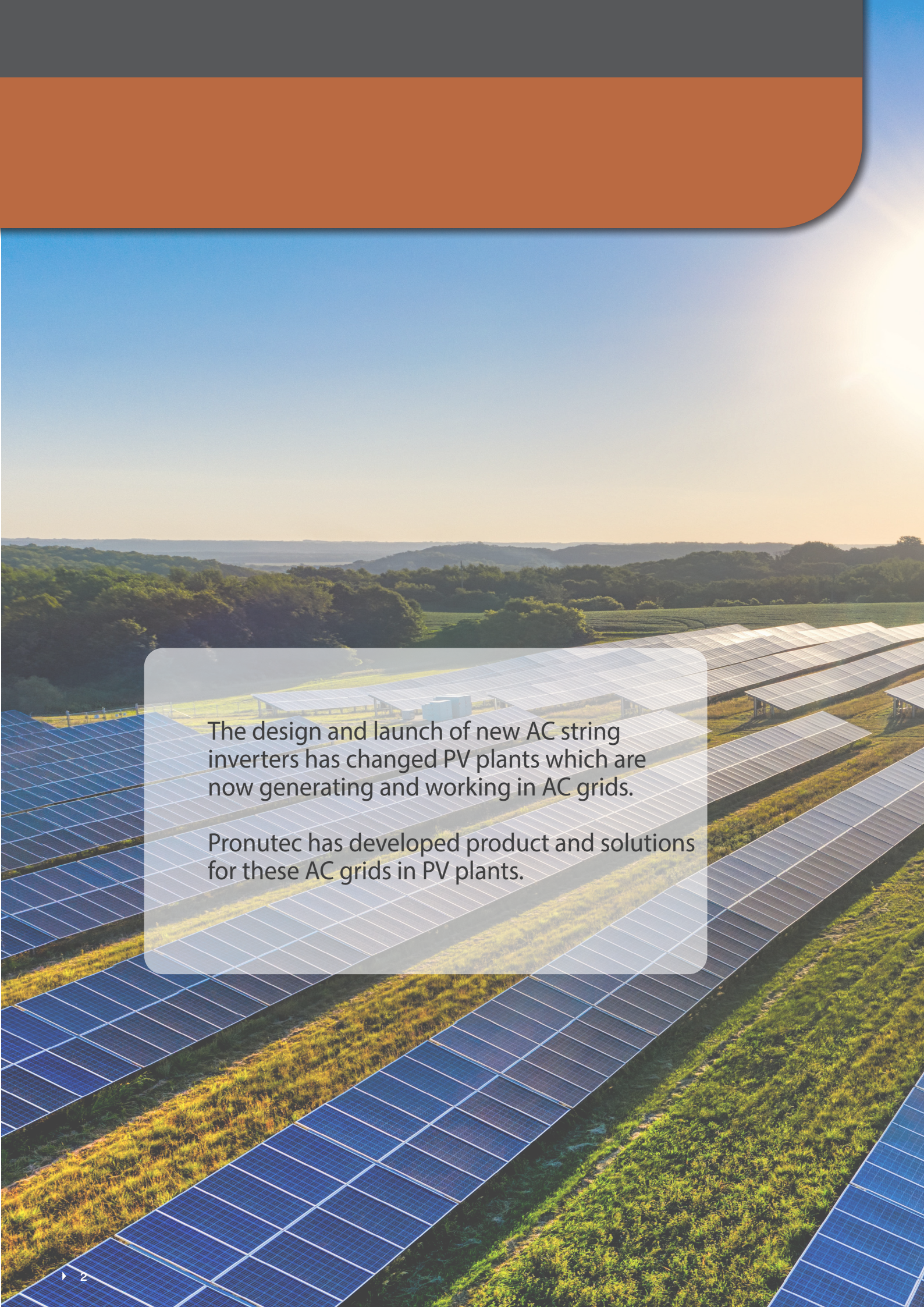


pronutec
gorlan

Photovoltaic plants in AC grids

Switchgear and AC Combiner Panels

gorlan



The design and launch of new AC string inverters has changed PV plants which are now generating and working in AC grids.

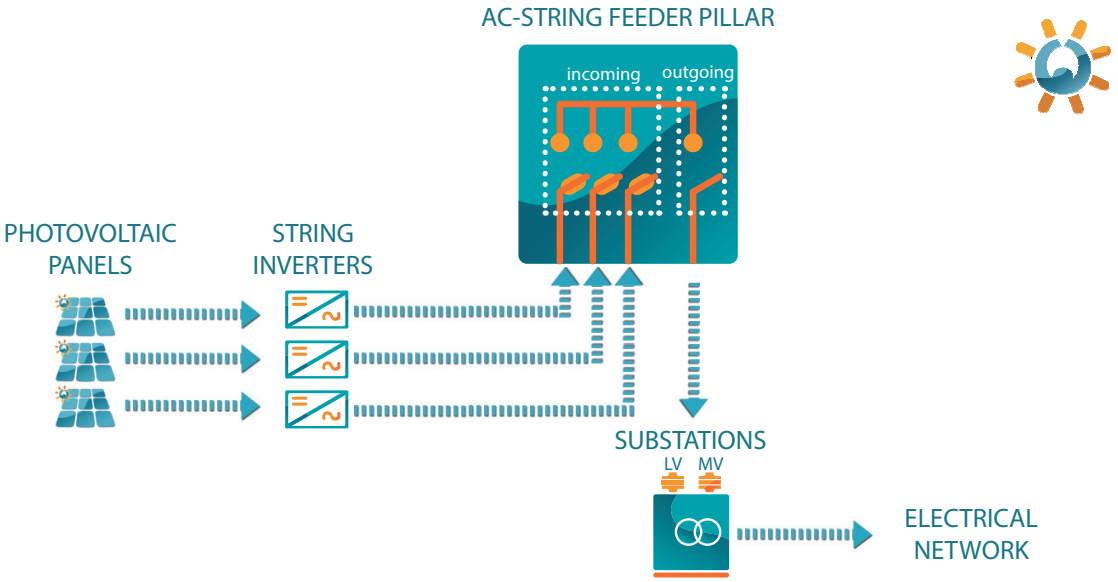
Pronutec has developed product and solutions for these AC grids in PV plants.

1. 800 V AC switchgear for photovoltaic

2. AC Combiner panels

1 800 V AC Switchgear for Photovoltaic

New trend of photovoltaic installations and where our products are needed



Tested switching capacity at 800 V AC as per IEC60947-3

Design of more competitive photovoltaic plants

Less power losses

PV energy shouldn't be considered any more an alternative source of energy. As it is becoming more cost-competitive, it is now an increasing reality.

One of the main reason for this, is the reduction of installations and maintenance cost. New trend consist in designing photovoltaic distribution network in **800 V AC** instead of DC voltages with smaller string inverters close to the photovoltaic panels.

At the same time, the transmission of energy at higher voltages make possible to reduce power losses and the cost of the installation.

By using upper section cables, up to 300 mm² for NH 1 and NH 3, **the voltage drop is reduced**. In this way, the tendency in last inverters generation is to transmit at 800 V AC.

GORLAN SWITCHGEAR RANGE | Pronutec and Telergon

- Pronutec | Incoming
- Telergon | Outgoing

INCOMING pronutec gorlan

TRIVER+ 800 LV Vertical Fuse Switches of Pronutec for 800 V AC

OUTGOING telergon gorlan

Switch disconnectors high perfomances range of Telergon for 800 V AC

pronutec gorlan

LV VERTICAL FUSE SWITCHES OF PRONUTEC FOR 800 V AC

TRIVER+ 800

Pronutec introduces the range TRIVER+ 800. A range of vertical fuse switches for photovoltaic application specifically designed for the protection and distribution of electric networks from the new string inverters with rated operational voltage levels of 800 V AC.

The AC distribution and the higher voltage, allow a more cost-competitive design of power networks in photovoltaic applications and less power losses. Another features are the safety of the range TRIVER+ 800 and the breaking capacity at these voltage levels.

Maintaining the well known advantages and features in Pronutec TRIVER+ family, this new range offers additional advantages:

Less power losses

- Tested switching capacity up to 800 V.
- Tested short circuit protection up to 120 kA.
- Reliable protection by a consolidated technology based in DIN standard.
- All operations can be made comfortably using the established protection equipment and insulated tools.
- Compatible with 185 mm and 100 mm distance busbars.
- Available in sizes NH00/1/3, allows any combination for a flexible configuration and adaptable to any project.
- Complete range of connections for copper and aluminum terminals for different cable sections.

pronutec gorlan

NH 00 | 100 mm busbar distance

Reference	Type	Current	Fuse-link	Switching	Connections	Busbar spacing
453.61.10.XX.YY.E8	BTVC-DT	125 A	NH 00	Three pole	Top / Bottom reversible	100 mm

* For one pole switching options, please, consult.

Terminal options


22


01
02


03
04

XX Code	Type of terminal	Torque (Nm)	Cross section (mm^2)			
						
22	Prism terminal - 95	2,5	10-95	10-95	35-95	50-95
01	M8 screw Stainless Steel	12	Cable lugs DIN 46235 Max. 95 mm^2			
02	M8 screw Zn	12				
03*	M8-M5 screw Stainless Steel (15 mm)	12				
04**	M8-M5 screw Stainless Steel (18 mm)	12				

* Compatible with Prism terminal-70 and Bridge clamp.
** Compatible with Prism terminal-95.

NH 00 | 185 mm busbar distance

Reference	Type	Current	Fuse-link	Switching	Connections	Busbar spacing
443.72.10.XX.YY.E8	BTVC-DT / Depth 00	125 A	NH 00	Three pole	Top / Bottom reversible	185 mm
443.72.12.XX.YY.E8	BTVC-DT / Depth 2	125 A	NH 00	Three pole	Top / Bottom reversible	185 mm

* For one pole switching options, please, consult.

Terminal options


28


05


01
02

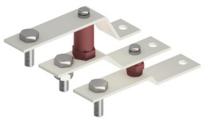

03
04

Reference	XX Code	Type of terminal	Torque (Nm)	Cross section (mm2)			
							
101.01.122	28	Aluminum "V" Terminal	15	10-95	10-95	25-120	25-150
101.01.114	05	Steel "V" Terminal	15	10-70	10-70	25-95	20-120
-	01	M8 screw A2/M8	12	Cable lugs DIN 46235 Max. 120 mm^2			
-	02	M8 screw Zn / M8	12				
-	03*	M8 screw A2+M5 (15 mm)	12				
-	04**	M8 screw A2+M5/M8 (18 mm)	12				

* Compatible with Prism terminal-70 and Bridge clamp.
** Compatible with Prism terminal-95.

Adaptor plates

YY Code	Adaptor plates
16	Set of 3 adaptor plates to connect 185 mm^2 cross section cables



Micro-switch available for all sizes

NH 1/3 | 185 mm busbar distance

Reference	Type	Current	Fuse-link	Switching	Connections	Busbar spacing
438.71.10.XX.YY.E8	BTVC-DT	315 A	NH 1	Three pole	Top / Bottom reversible	185 mm
438.73.10.XX.YY.E8	BTVC-DT	500 A	NH 3	Three pole	Top / Bottom reversible	185 mm

* For one pole switching options, please, consult.

Terminal options

Reference	XX Code	Type of terminal	Torque (Nm)	Cross section (mm2)			
							
101.01.130	46	Aluminum Double "V" Terminal	25-30	50-240	70-300	70-240	95-300
101.01.129	42	Aluminum Double "V" Terminal	30	35-120	35-150	50-185	35-240
101.01.103	05	Aluminum "V" Terminal with reversible pressure pad	25	16-185	16-240	35-240	35-300
-	00	M10 Bolt	32				
-	01	M10 Bolt Stainless Steel	32				
-	02	M12 Bolt	40				
-	03	M12 Bolt Stainless Steel	40				

Cable lugs DIN 46235
2x25 - 300 mm²
(Max. width 43 mm)


46


42


05


00
01


02
03

Cross section up to 300 mm², the voltage drop is reduced

Micro-switch available for all sizes

Vertical Switch Disconnectors

Size	Current
NH 3	1000 A

Please, consult.

One pole Fuse Bases - 800 V AC

Size	Current
NH 00	Contact our commercial department
NH 1	
NH 3	

1 pole LV Fuse Switches - 800 V AC

Size	Current
NH 00	Contact our commercial department
NH 1	

Horizontal design fuse switch disconnector NH 00

Reference	Type	Current	Type of terminal	Connections	Fuse Link	Power Losses (W)*
432.12.01.01.00.E8	Panel mounting	125A	Bridge terminal	Bottom/Top connection	NH 00	12
432.12.01.02.00.E8	Panel mounting	125 A	Connection screw M8	Bottom/Top connection	NH 00	12
432.42.01.01.00.E8	Panel mounting	125 A	Bridge terminal	Long Contact Cover	NH 00	12
432.42.01.02.00.E8	Panel mounting	125 A	Connection screw M8	Long Contact Cover	NH 00	12

Fuse Supervision Control - FSC Modbus

Fuse monitoring unit for 3 phases, compatible with NH00, 1, 2 and 3 fuse switches. One LED per phase shows the status of each fuse with red /green light. FSC sends blown fuse alarms by RS485 modbus protocol to any third party RTU, so that it could be integrated into an Scada system.

Measuring instruments - Panel meters

Description	Rated operational voltage U_e
Current transformer + Panel meter PNT MASTER 3840	400/500/690 V
Current transformer + Panel meter for 800 V AC	800 V

TECHNICAL DATA

IEC/EN 60947-3		Type	BTVC | BTVC-DT			
			NH 00 (453)	NH 00 (443)	NH 1 (438)	NH 3 (438)
Electrical characteristics	Rated operational voltage	U_e (V)	AC 800			
	Rated operational current	I_e (A)	125	125	315	500
	Conventional free air thermal current with fuses	I_{th} (A)	125		315	500
	Conventional free air thermal current with solid links	I_{th} (A)	250		760	
	Rated frequency	(Hz)	50/60			
	Rated insulation voltage	U_i (V)	1000			
	Rated impulse withstand voltage	U_{imp} (kV)	8		8	
	Rated conditional short-circuit current	(kA_{eff})	120	120	120	90
	Utilization category	-	AC-22B			
	Rated making capacity	(A)	375	375	1260	1500
	Rated breaking capacity	(A)	375	375	1260	1500
Mechanical characteristics	Weight	(kg)	1,520	2,260	4,250	5,600
	Busbar distance	(mm)	100		185	
	Panel front opening	(mm)	600/650			
Fuse links	Size to IEC/EN 60269	-	00	00	1	3
	Max. permis. power loss per fuse-link	P_v (W)	12	12	23	48

IEC/EN 60947			Type	BTVC | BTVC-DT			
				NH 00 (453)	NH 00 (443)	NH 1 (438)	NH 3 (438)
Terminals	Bolt terminal	Diameter	-	M8		M10/M12	
		Cable lug (S/DIN 46235)	(mm^2)	10-95	10-120	2x 25-300	2x 25-300
		Torque	(Nm)	12		32	
	Prism terminal	Terminal cross section	(mm^2)	16-70		-	
		Torque	(Nm)	2.5		-	
	"V" Terminal	Terminal cross section	(mm^2)	-	10-95	35-300	35-300
		Torque	(Nm)	-	15	25	25
Protection degree	Front operated switchgear fitted		-	IP30			
Operating conditions	Ambient temperature		(°C)	-25 to +55*(1)			
	Rated operating mode		-	Continous operation			
	Actuation		-	Dependant manual operation			
	Altitude		(m)	Up to 2000			
	Pollution degree		-	3			
	Overvoltage category		-	III		IV	

*(1) 35°C normal temperature, at 55 °C with reduced operating current.

SWITCH DISCONNECTORS HIGH PERFORMANCES RANGE OF TELERGON FOR 800 VAC

Functional and ergonomic handle

- Good grip and excellent torque/resistance.
- Padlockable handle in O OFF position (up to three locks Ø 5-8 mm).
- Door interlock in ON I position.
- When lock in O OFF position, door is interlocked.
- Defeteable feature in ON I position (with the use of a tool for maintenance operations). Handle interlock is restored when closing.
- Self-centering shaft for door handle.

The switch-disconnectors **S5 & 56** for high perfomances range, are manufactured with high safety self-extinguishing materials, providing an excellent level of electrical insulation, low smoke emission and high resistance to electromechanical stress.

They comply with environmental requirements and undergo strict quality controls for a reliable product that meets the most demanding requirements.

They consist of a sandwich-type body containing self-cleaning blade type contacts, with pre-arc zones to ensure long term, fault-free energy transmission and coated with silver alloy for long electromechanical life. The detent mechanism provides quick and independent switching due to the accumulation of elastic potential energy, which is transmitted at high speed to the contacts for arc extinction.

Motorized unit kit

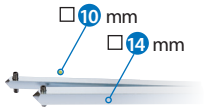
- Equipped with a selector for automatic-manual-lock operating modes.
- The kit concept simplifies both logistics and maintenance.
- Easy and simple assembly.

According to:
IEC 60947-3

Manual switch disconnectors S6 / S5 3 poles (O - I) 800 V AC *(1)			Manual handle	
Current	Size	Code	External *(2)	Direct
			Code	Code
250 A	1	S6-04003PD0	DS-SA11	DS-SI11
630 A	2	S6-08003PD0	DS-LA21	DS-LI21
1600 A	4	S5-18003PS0	DS-LA41	DS-LI41
3200 A*(3)		S5N18006PS0PB7		

*(1) AC21B, for other electrical ranges or 3P+N switches, please consult.
*(2) Padockable handle in OFF position. Possibility of unlocking the door in ON 1 position (with the use of a tool). Door interlock by a padlock in OFF 0 position.
*(3) 6P switch-disconnector with common ouputs up to 3200 A.

Motorized switch disconnectors S6 / S5 3 poles (O - I) 800 V AC *(1)			UM-S Motorized unit kit 230 Vac
Current	Size	Code	Code
250 A	1	S6-04003PDC	UM-S1A230Z
630 A	2	S6-08003PDC	UM-S2A230Z
1600 A	4	S5-18003PSC	UM-S41230M
3200 A		S5N18006PSCPB7	UM-S56230M



Shaft extensions				Auxiliary contacts		Spacers	Phase barriers	Terminal shrouds
Size	Size □	Type 1 & 2		1NO+1NC	2NO+2NC	(4 units)	(2 units)	Code
		L	Code	Code	Code	Code	Code	
1	10	375	DS-EP14	D5LAU01	D5LAU02	DR-EL11	DR-SF12	DR-CU12
		536	DS-EP15					
2	14	345	DS-EP23	D5LAU01	D5LAU02	DR-EL21	DR-SF22	DR-CU22
		535	DS-EP24					
4	14	485	DS-EP44	D5LAU01	D5LAU02	-	-	DS-CU41* (1)
		635	DS-EP45					

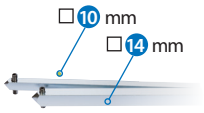
*(1) This terminal shround is only available for switch disconnectors S5-18003PS0.

According to:
IEC 60947-3

Manual switch disconnectors S6 / S5 3 poles (O - I) 800 V AC *(1)			Manual handle	
Current	Size	Code	External *(2)	Direct
			Code	Code
250 A	1	S6-04003PD0	DS-SA11	DS-SI11
630 A	2	S6-08003PD0	DS-LA21	DS-LI21
1600 A	4	S5-18003PS0	DS-LA41	DS-LI41
3200 A*(3)		SSN18006PS0P87		

*(1) AC21B, for other electrical ranges or 3P+N switches, please consult.
*(2) Padockable handle in OFF position. Possibility of unlocking the door in ON 1 position (with the use of a tool). Door interlock by a padlock in OFF 0 position.
*(3) 6P switch-disconnector with common ouputs up to 3200 A.

Motorized switch disconnectors S6 / S5 3 poles (O - I) 800 V AC *(1)			UM-S Motorized unit kit
Current	Size	Code	230Vac
			Code
250 A	1	S6-04003PDC	UM-S1A230Z
630 A	2	S6-08003PDC	UM-S2A230Z
1600 A	4	S5-18003PSC	UM-S41230M
3200 A		S5N18006PSCP87	

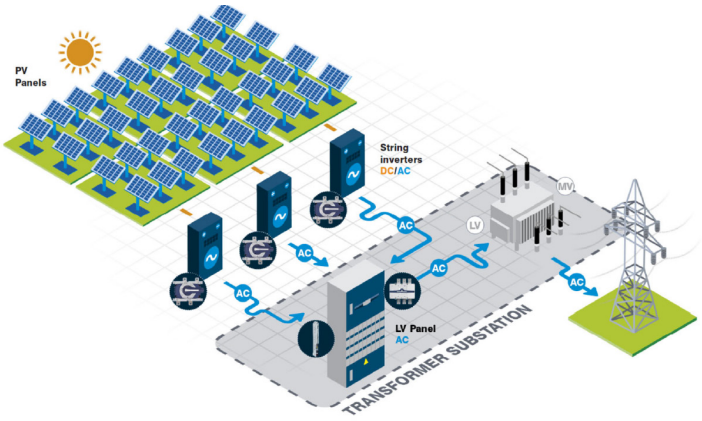


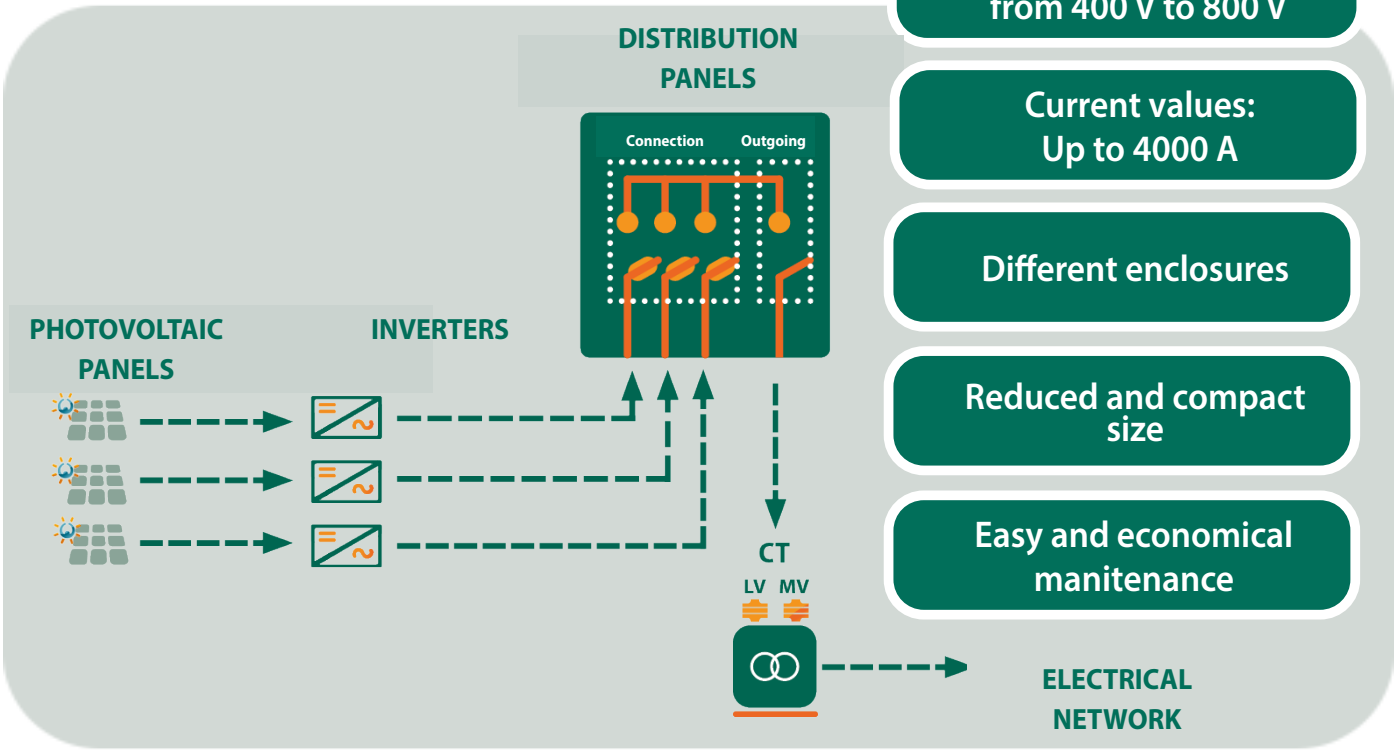
Shaft extensions				Auxiliary contacts		Spacers	Phase barriers	Terminal shrouds
Size	Size □	Type 1 & 2		1NO+1NC	2NO+2NC	(4 units)	(2 units)	Code
		L	Code	Code	Code	Code	Code	
1	10	375	DS-EP14	D5LAU01	D5LAU02	DR-EL11	DR-SF12	DR-CU12
		536	DS-EP15					
2	14	345	DS-EP23	D5LAU01	D5LAU02	DR-EL21	DR-SF22	DR-CU22
		535	DS-EP24					
4	14	485	DS-EP44	D5LAU01	D5LAU02	-	-	DS-CU41* (1)
		635	DS-EP45					

*(1) This terminal shround is only available for switch disconnectors S5-18003PS0.

2 AC Combiner Panels

NEW SCENARIO OF PV PLANTS WITH AC STRING INVERTERS





Voltage values: from 400 V to 800 V

Current values: Up to 4000 A

Different enclosures

Reduced and compact size

Easy and economical manitenance

Pronutec presents its new Inverter AC Combiner Panels range. Working voltages from 400 V to 800 V in AC grids, both in indoor and outdoor installations. Wide range of: currents, number of inputs, different switching devices, surge protection and auxiliary services. Suitable for TN-C and IT systems.

These panels are the ones that are different connected to the transformer in the Transformer Station. The panel collects the cables from the inverter, through the bottom from by means of fuse switch NH 00/1/3. These fuse switches have been tested and are capable for working at voltages up to 800 V AC, with moulded case circuit breaker or load break switch.

Its compact and reduced size, together with the reduced cost of maintenance, make this range of panels the best solution for photovoltaic applications.

WIDE RANGE OF LOW VOLTAGE PANELS

METALLIC INDOOR PANELS

From 4 to 14 feeders — Bottom incoming - Top outgoing.
Maximum 14 incomings BTVC-DT NH 1/3 or 28 incomings BTVC-DT NH 00. Load break switch or automatic circuit breaker.

Extensions — Bottom incoming - Top outgoing.
Expandable maximum 12 incomings BTVC-DT NH 1/3.

INDOOR PANEL - FRAME VERSION

Frame Version — Bottom incoming to the fuse switches - Lateral outgoing to the transformer through wiring.
Maximum 10 incomings BTVC-DT NH 1.

POLYESTER OUTDOOR PANEL

Insulating 6 feeders — Bottom incoming - Top and rear outgoing.
Maximum 6 incomings BTVC-DT NH 1/3 or 12 incomings BTVC-DT NH 00.

Insulating DIN 5 feeders — Bottom incoming - Bottom outgoing.
Maximum 5 incomings BTVC-DT NH 1/3 or 10 incomings BTVC-DT NH 00.

METALLIC OUTDOOR PANEL

Metallic 6 feeders — Bottom incoming - Top and rear outgoing.
Maximum 6 incomings BTVC-DT NH 1/3 or 12 incomings BTVC-DT NH 00.

Indoor panels

From 4 to 14 feeders	Up to 4000 A for 400/500/690 V | Up to 4000 A for 800 V
Frame version	Up to 4000 A for 400/500/690 V | Up to 4000 A for 800 V

Outdoor panels

Insulating 6 feeders	Up to 1600 A for 400/500/690 V | Up to 1250 A for 800 V
Insulating DIN 5 feeders	Up to 1600 A for 400/500/690 V | Up to 1250 A for 800 V
Metallic 6 feeders	Up to 1600 A for 400/500/690 V | Up to 1250 A for 800 V

Outgoing devices
Load break switch or automatic circuit breaker

Protecions
Auxiliary circuits, metering devices, surge arresters, IMD, etc.

Bottom Incoming - Top Outgoing | Unesa type 4 feeders

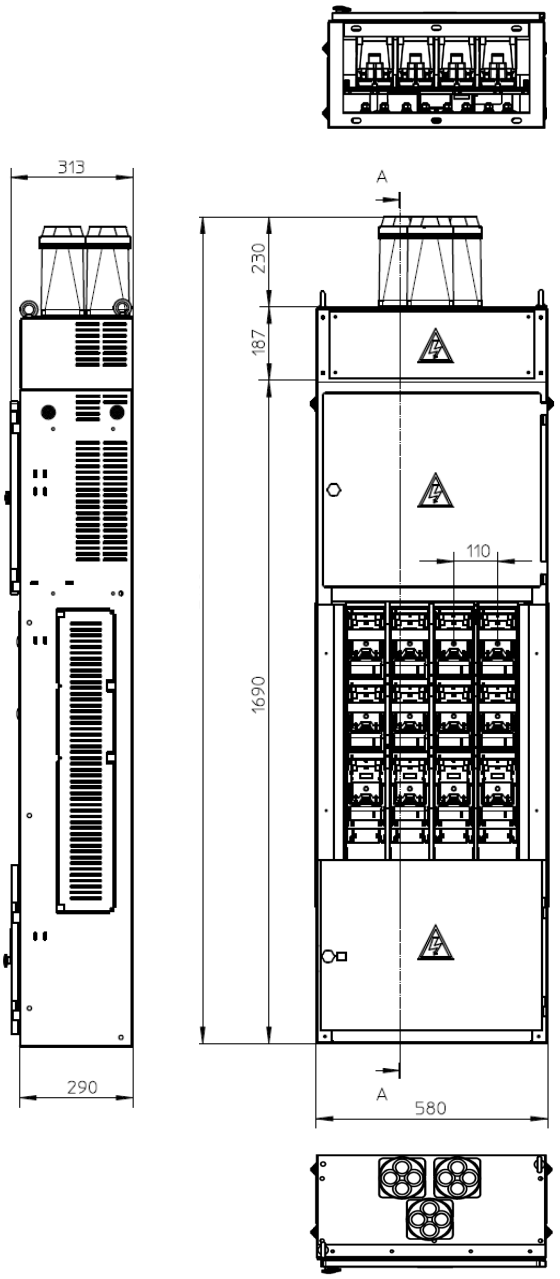
4 feeders

DESCRIPTION

Protected outgoing with	Description	Rated operational voltage U_e	Maximum current	Size	Maximum nº of incomings	Accesories	IP20
LBS Telergon	LVCP U 4H LBS	800 V	1600 A (*1)	NH 00	8	1	✓
				NH 1	4	1	✓
				NH3	4	1	✓
MCCB	LVCP U 4H MCCB	690 V	1600 A (*1)	NH00	8	1	✓
		800 V	1250 A (*2)	NH 1	4	1	✓

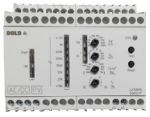
According to standard IEC-61439 (*1) Up to 1600 A for 690 V (*2) Up to 1250 A for 800V
LBS= Load Break Switch
MCCB = Moulded Case Circuit Breaker

DIMENSIONAL DRAWINGS



Bottom Incoming - Top Outgoing | Unesa type 4 feeders

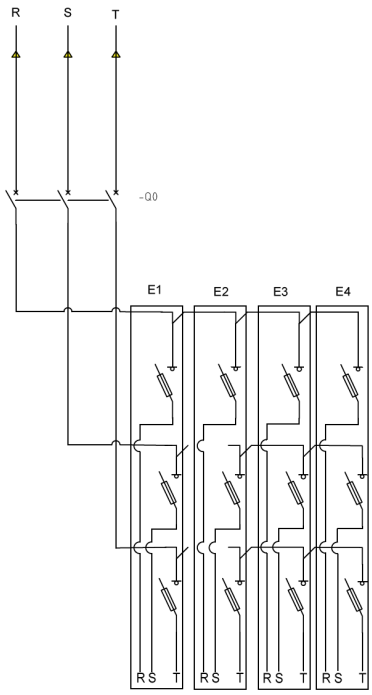
ACCESORIES

	Accesories	Compatibility
	Kit of BTHC + Surge Arrester	✓
	Insulation Monitor Device (IMD)*	✓
	BTHC for protection of auxiliary transformer	✓
	BTHC for Smart Logger Protection	✓

Only one accesory in the door. To add more accessories, a vertical fuse switch would be used. For special combinations, consult with commercial department.

* Obligatory for IT regime LV panels

WIRING DIAGRAM



Bottom Incoming - Top Outgoing | Unesa type 6 feeders

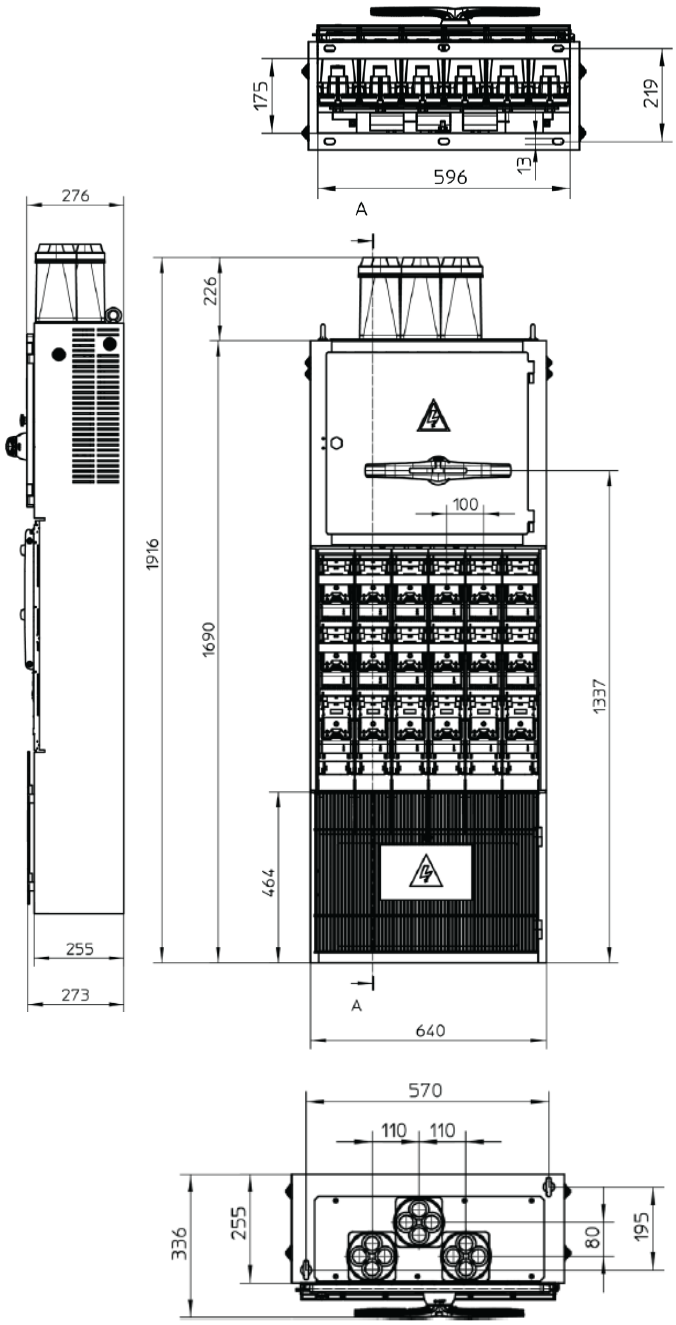
6 feeders

DESCRIPTION

Protected outgoing with	Description	Rated operational voltage U_e	Maximum current	Size	Maximum nº of incomings	Accesories	IP20
LBS Telergon	LVCP 6H LBS	800 V	1600 A	NH 00	12	1	✓
				NH 1	6	1	✓
				NH3	6	1	✓
MCCB	LVCP 6H MCCB	690 V	1600 A (*1)	NH00	12	1	✓
		800 V	1250 A (*2)	NH 1	6	1	✓

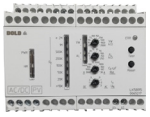
According to standard IEC-61439 (*1) Up to 1600 A for 690 V (*2) Up to 1250 A for 800 V
LBS = Load Break Switch
MCCB = Moulded Case Circuit Breaker

DIMENSIONAL DRAWINGS



Bottom Incoming - Top Outgoing | Unesa type 6 feeders

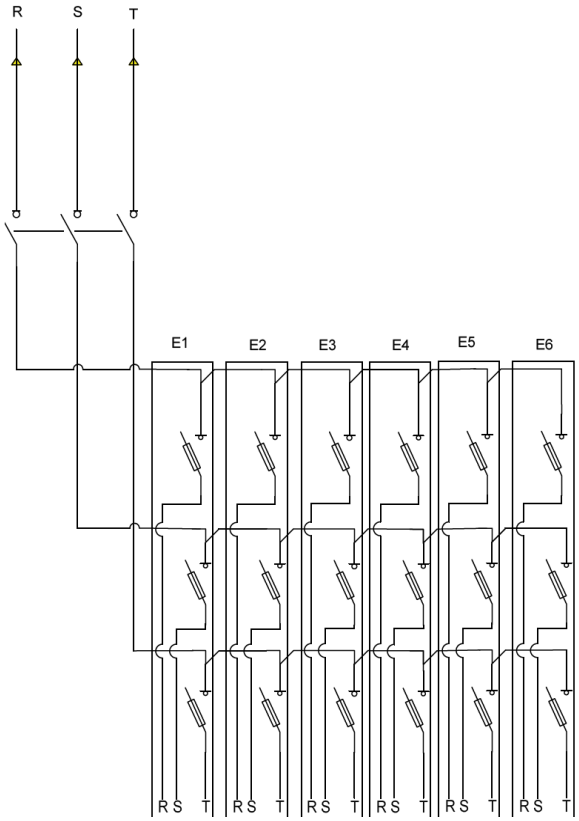
ACCESSORIES

	Accesories	Compatibility
	Kit of BTHC + Surge Arrester	✓
	Insulation Monitor Device (IMD)*	✓
	BTHC for protection of auxiliary transformer	✓
	BTHC for Smart Logger Protection	✓

Only one accesory in the door. To add more accessories, a vertical fuse switch would be used. For special combinations, consult with commercial department.

* Obligatory for IT regime LV panels

WIRING DIAGRAM



Bottom Incoming - Top Outgoing | 8 feeders

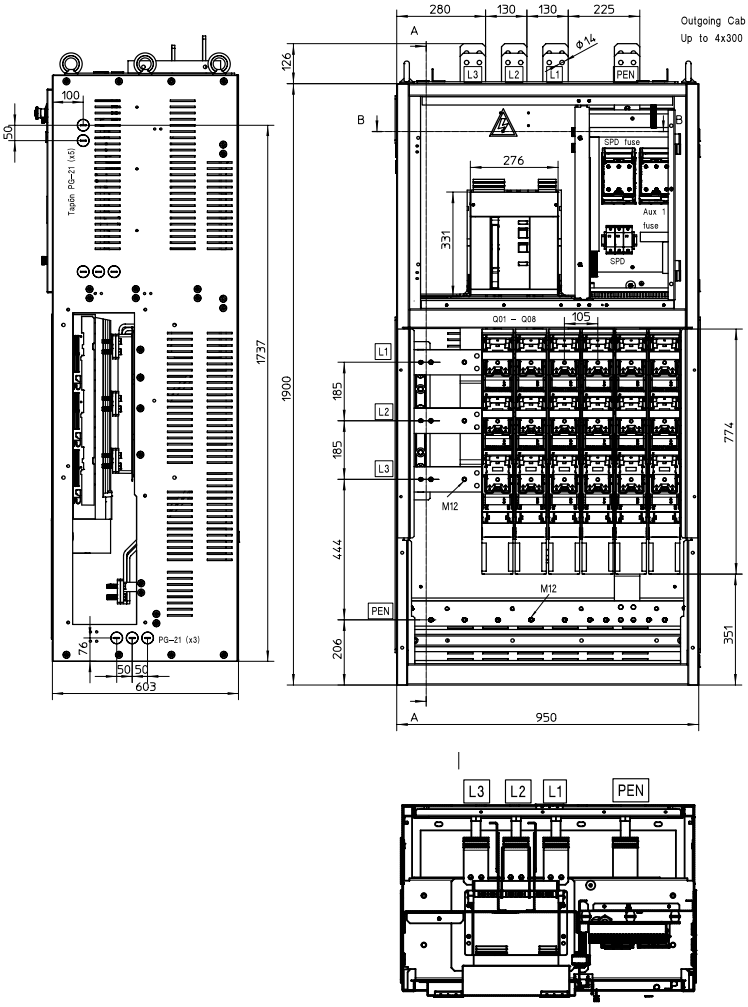
8 feeders

DESCRIPTION

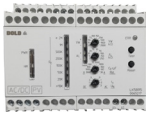
Protected outgoing with	Description	Rated operational voltage U_e	Maximum current	Size	Maximum nº of incomings	Accesories	IP20
LBS Telergon	LVCP 8H LBS	up to 800 V	3200 A	NH 00	16	Up to 3	✓
				NH 1	8	Up to 3	✓
				NH3	8	Up to 3	✓
ACB	LVCP 8H ACB	up to 800 V	3200 A	NH00	16	Up to 3	✓
				NH 1	8	Up to 3	✓
				NH3	8	Up to 3	✓

According to standard IEC-61439
LBS = Load Break Switch
ACB= Air Circuit Breaker

DIMENSIONAL DRAWINGS



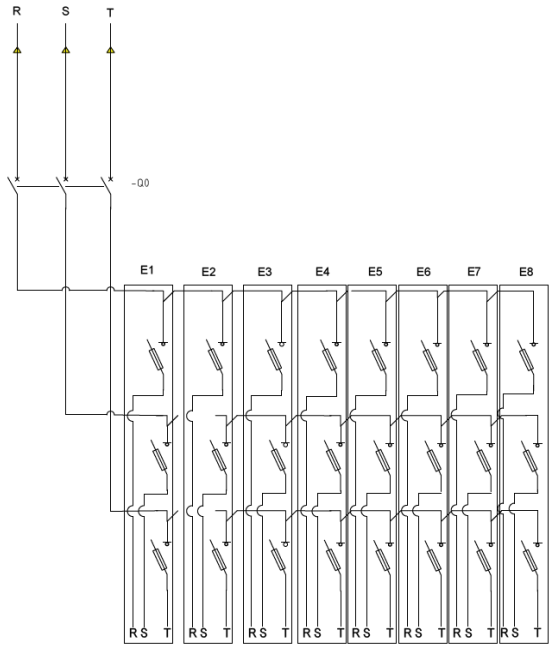
ACCESSORIES

	Accesories	Compatibility
	Kit of BTHC + Surge Arrester	✓
	Insulation Monitor Device (IMD)*	✓
	BTHC for protection of auxiliary transformer	✓
	BTHC for Smart Logger Protection	✓

Up to three accesories in the door. To add more accessories, a vertical fuse switch would be used. For special combinations, consult with commercial department.

* Obligatory for IT regime LV panels

WIRING DIAGRAM



Bottom Incoming - Top Outgoing | 10 feeders

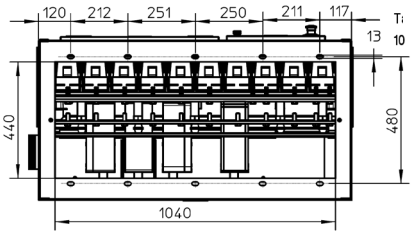
10 feeders

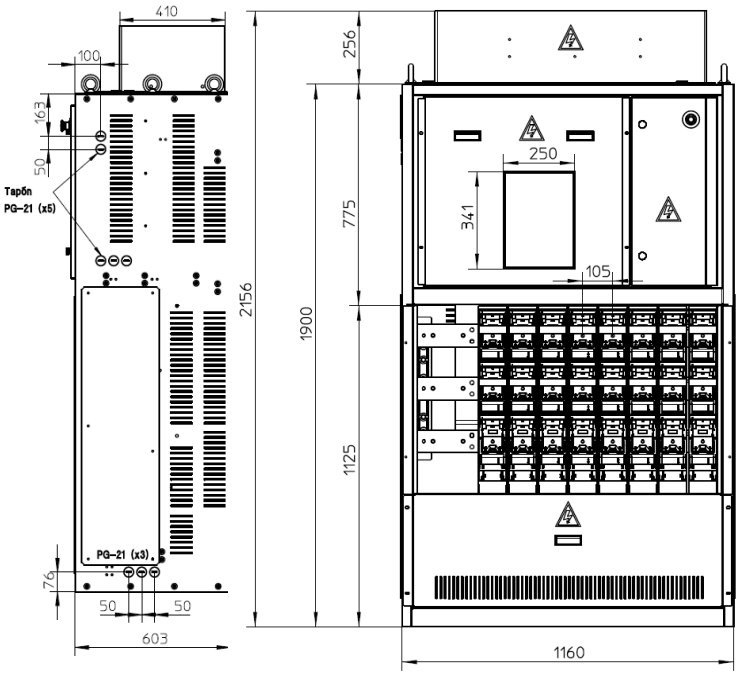
DESCRIPTION

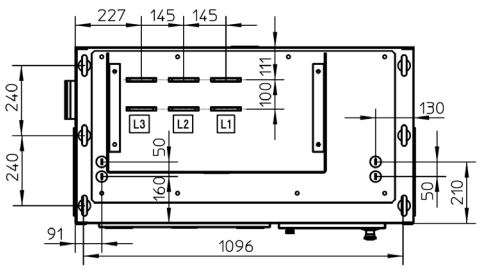
Protected outgoing with	Description	Rated operational voltage U_e	Maximum current	Size	Maximum nº of incomings	Accesories	IP20
LBS Telergon	LVCP 10H LBS	up to 800 V	3200 A	NH 00	20	Up to 4	✓
				NH 1	10	Up to 4	✓
				NH3	10	Up to 4	✓
ACB	LVCP 10H ACB	up to 800 V	4000 A	NH00	20	Up to 4	✓
				NH 1	10	Up to 4	✓
				NH3	10	Up to 4	✓

According to standard IEC-61439
LBS = Load Break Switch
ACB = Air Case Circuit Breaker

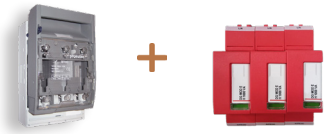
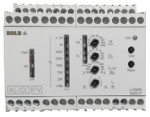
DIMENSIONAL DRAWINGS







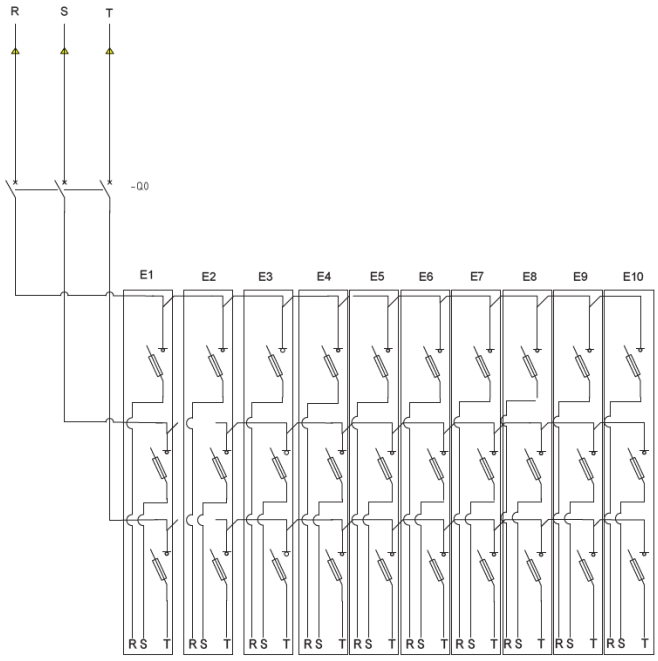
ACCESSORIES FOR AUXILIARY CUBICLE

	Accesories	Compatibility
	Kit of BTHC + Surge Arrester	✓
	Insulation Monitor Device (IMD)*	✓
	BTHC for protection of auxiliary transformer	✓
	BTHC for Smart Logger Protection	✓

Up to four accesories in the door. To add more accessories, a vertical fuse switch would be used. For special combinations, consult with commercial department.

* Obligatory for IT regime LV panels

WIRING DIAGRAM



Bottom Incoming - Top Outgoing | 12 feeders

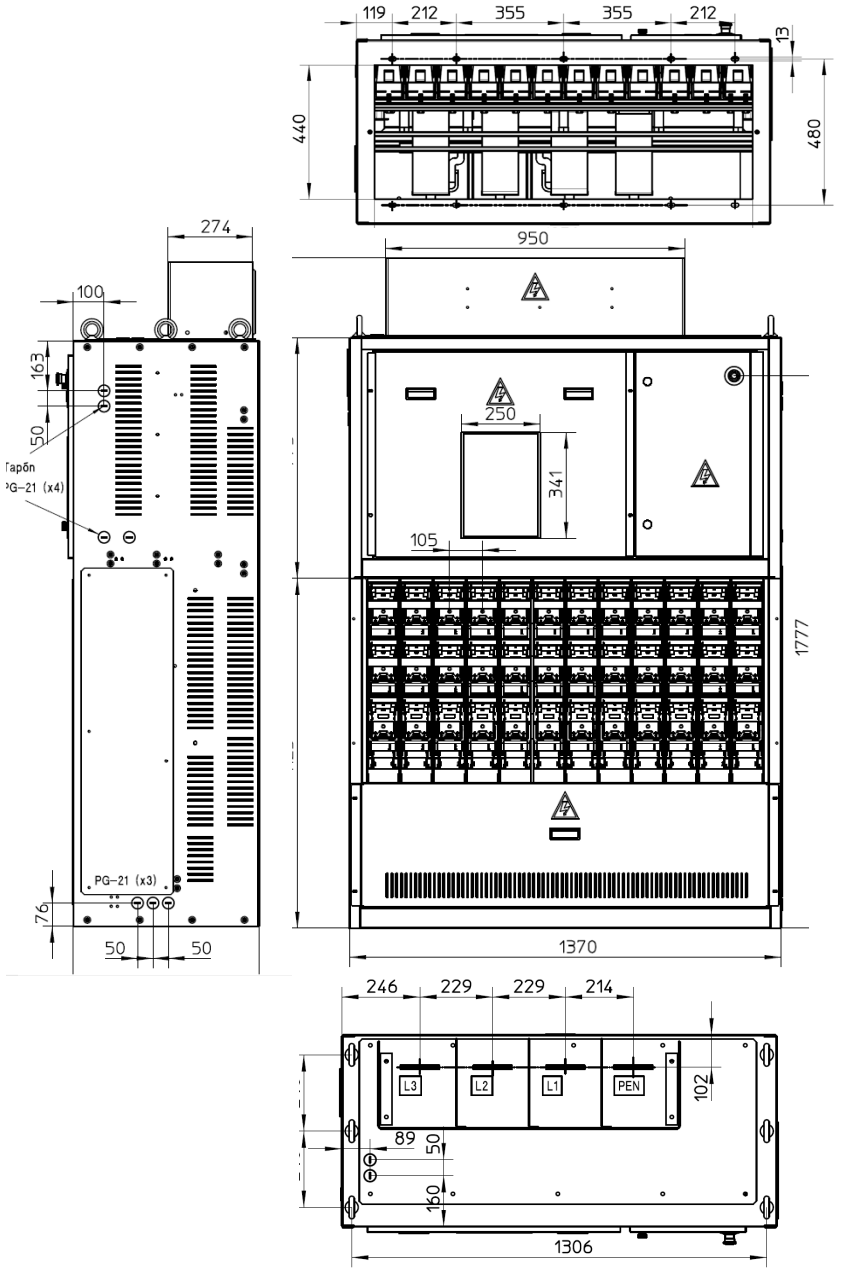
12 feeders

DESCRIPTION

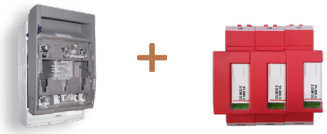
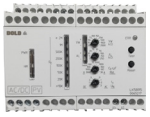
Protected outgoing with	Description	Rated operational voltage U_e	Maximum current	Size	Maximum nº of incomings	Accesories	IP20
LBS Telergon	LVCP 12H LBS	up to 800 V	3200 A	NH 00	24	Up to 4	✓
				NH 1	12	Up to 4	✓
				NH3	12	Up to 4	✓
ACB	LVCP 12H ACB	up to 800V	4000 A	NH00	24	Up to 4	✓
				NH 1	12	Up to 4	✓
				NH3	12	Up to 4	✓

According to standard IEC-61439
LBS = Load Break Switch
ACB= Air Circuit Breaker

DIMENSIONAL DRAWINGS



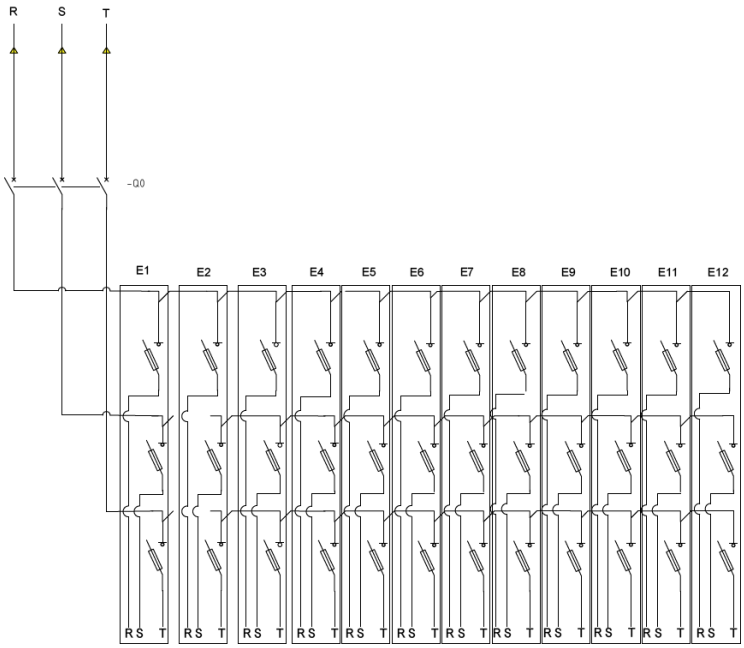
ACCESSORIES FOR AUXILIARY CUBICLE

	Accesories	Compatibility
	Kit of BTHC + Surge Arrester	✓
	Insulation Monitor Device (IMD)*	✓
	BTHC for protection of auxiliary transformer	✓
	BTHC for Smart Logger Protection	✓

Up to four accesories in the door. To add more accessories, a vertical fuse switch would be used. For special combinations, consult with commercial department.

* Obligatory for IT regime LV panels

WIRING DIAGRAM



Bottom Incoming - Top Outgoing | Unesa type 14 feeders

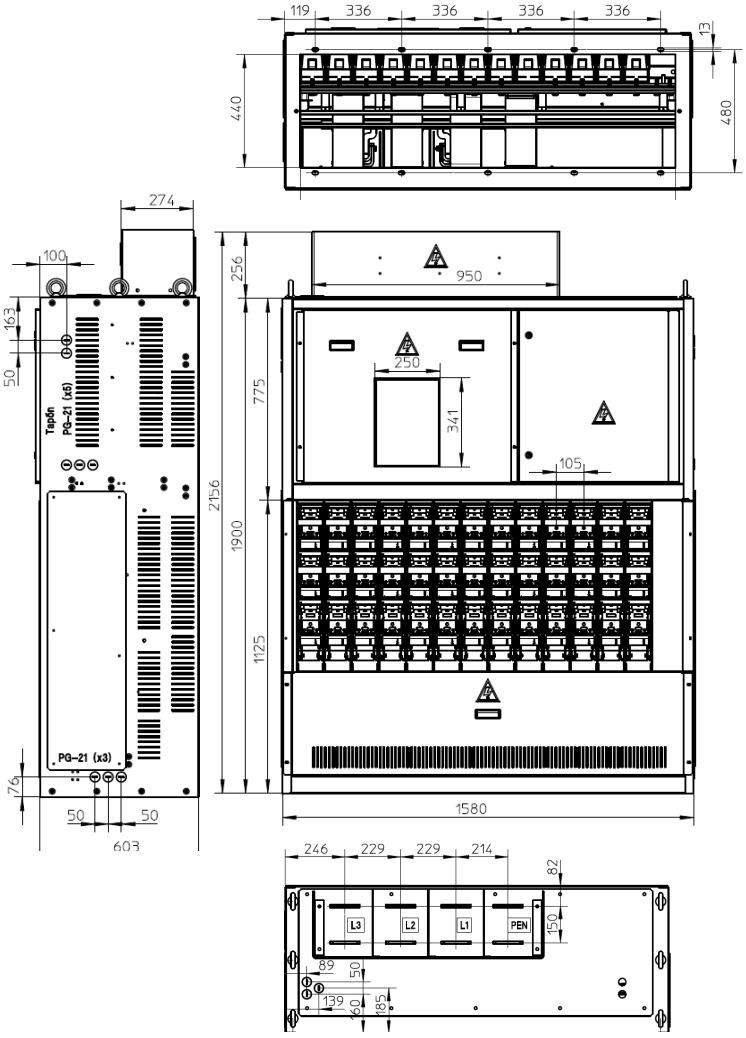
14 feeders

DESCRIPTION

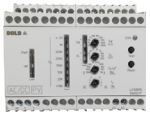
Protected outgoing with	Description	Rated operational voltage U_e	Maximum current	Size	Maximum nº of incomings	Accesories	IP20
LBS Telergon	LVCP 14H LBS	up to 800 V	3200 A	NH 00	28	Up to 5	✓
				NH 1	14	Up to 5	✓
				NH3	14	Up to 5	✓
ACB	LVCP 14H ACB	up to 800 V	4000 A	NH00	28	Up to 5	✓
				NH 1	14	Up to 5	✓
				NH3	14	Up to 5	✓

According to standard IEC-61439
LBS = Load Break Switch
ACB = Air Circuit Breaker

DIMENSIONAL DRAWINGS



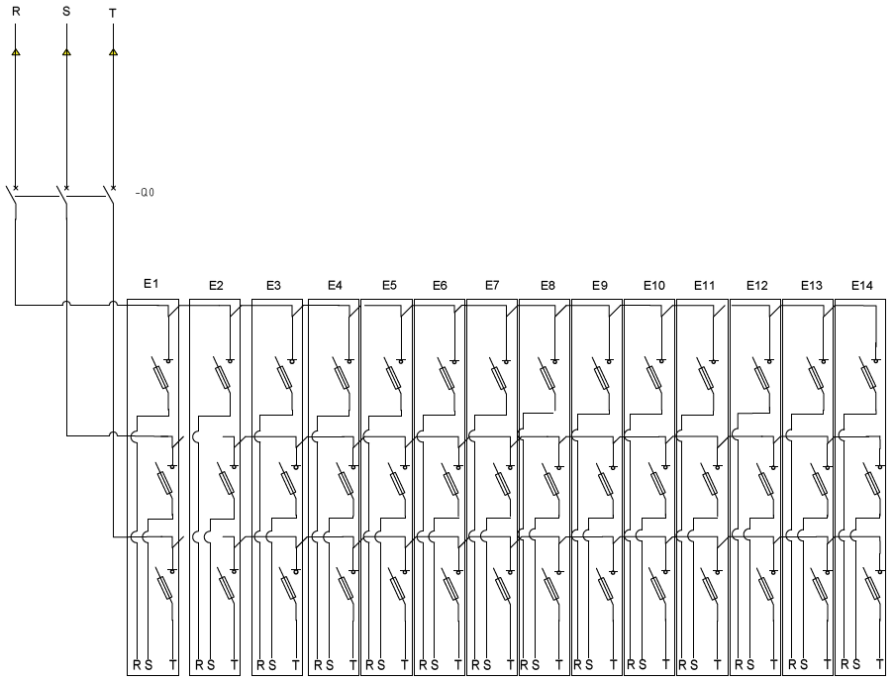
ACCESSORIES FOR AUXILIARY CUBICLE

	Accesories	Compatibility
	Kit of BTHC + Surge Arrester	✓
	Insulation Monitor Device (IMD)*	✓
	BTHC for protection of auxiliary transformer	✓
	BTHC for Smart Logger Protection	✓

Up to five accessories in the door. To add more accessories, a fuse switch would be used. For special combinations, consult with commercial department.

* Obligatory for IT regime LV panels

WIRING DIAGRAM



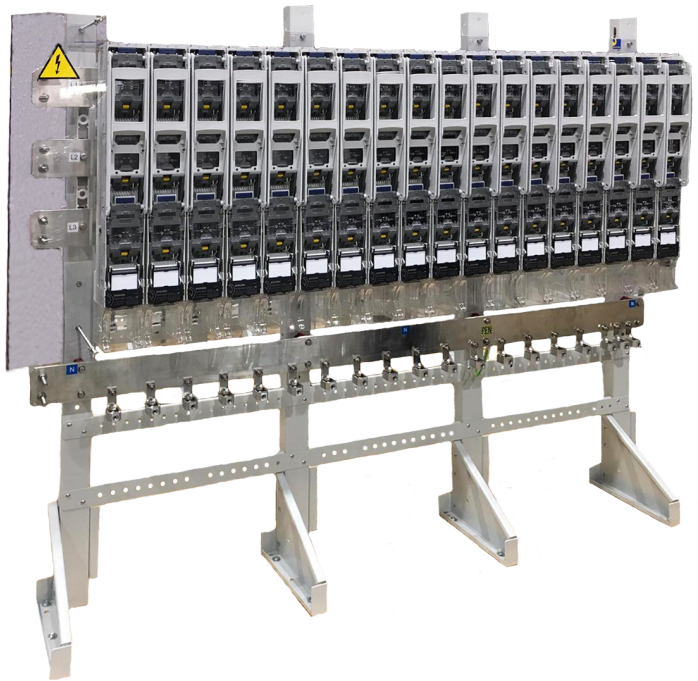
FRAME version

Bottom incoming to the fuse switches

DESCRIPTION

Description	Rated operational voltage U_e	Maximum current	Maximum nº of incomings NH 1/3	Maximum nº of incomings NH 00
CBTM 6 M	Up to 800 V	Up to 2500 A	6	12
CBTM 7 M			7	14
CBTM 8 M			8	16
CBTM 9 M			9	18
CBTM 10 M			10	20
CBTM 11 M		Up to 4000 A	11	22
CBTM 12 M			12	24
CBTM 13 M			13	26
CBTM 14 M			14	28
CBTM 15 M			15	30
CBTM 16 M			16	32
CBTM 17 M			17	34
CBTM 18 M			18	36

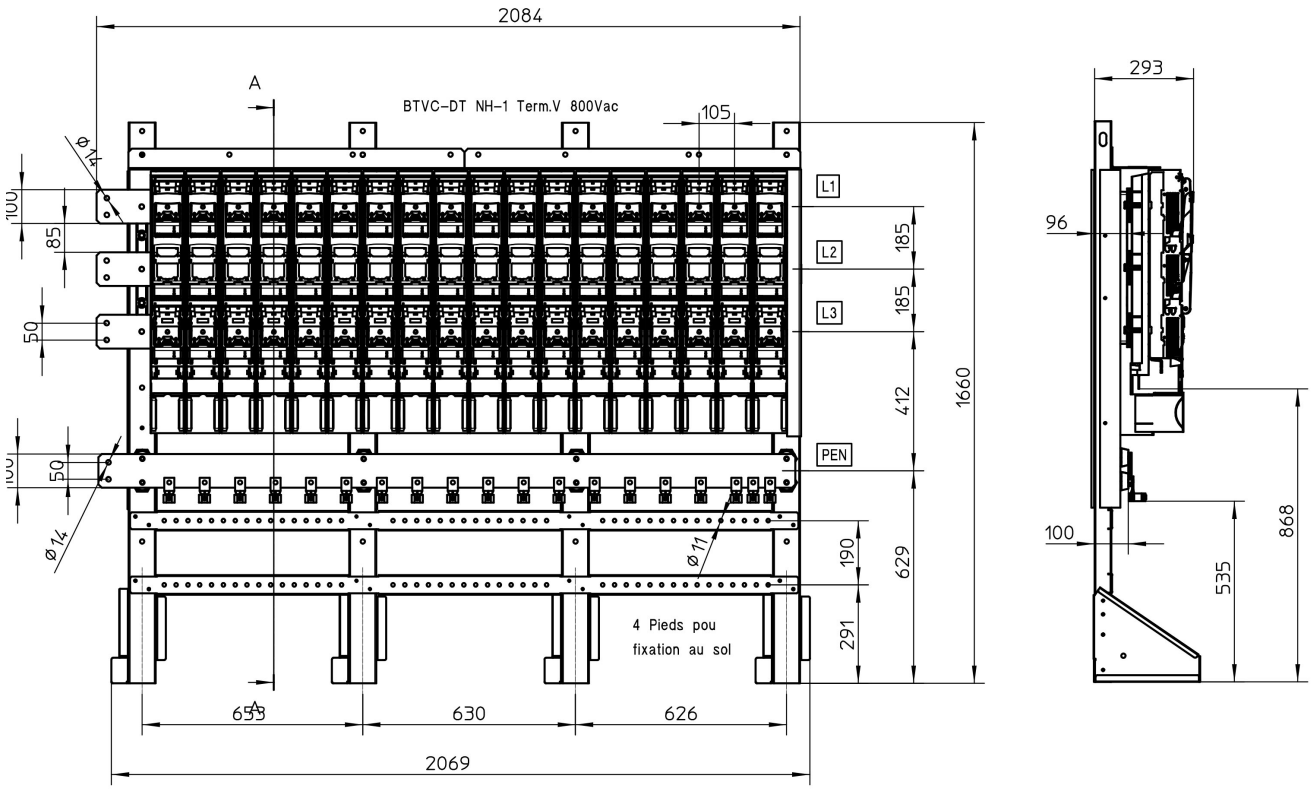
According to standard IEC-61439
CBTM = Modular Low Voltage Panel



Main features

- Conection both sides
- Option to combine different size of fuse switches
- Option to combine several panels for a single point of connection
- Possibility of customizable panels according to customer needs
- Lateral outgoing to the transformer - circuit braker through wiring.

DIMENSIONAL DRAWINGS



Connection with all the models

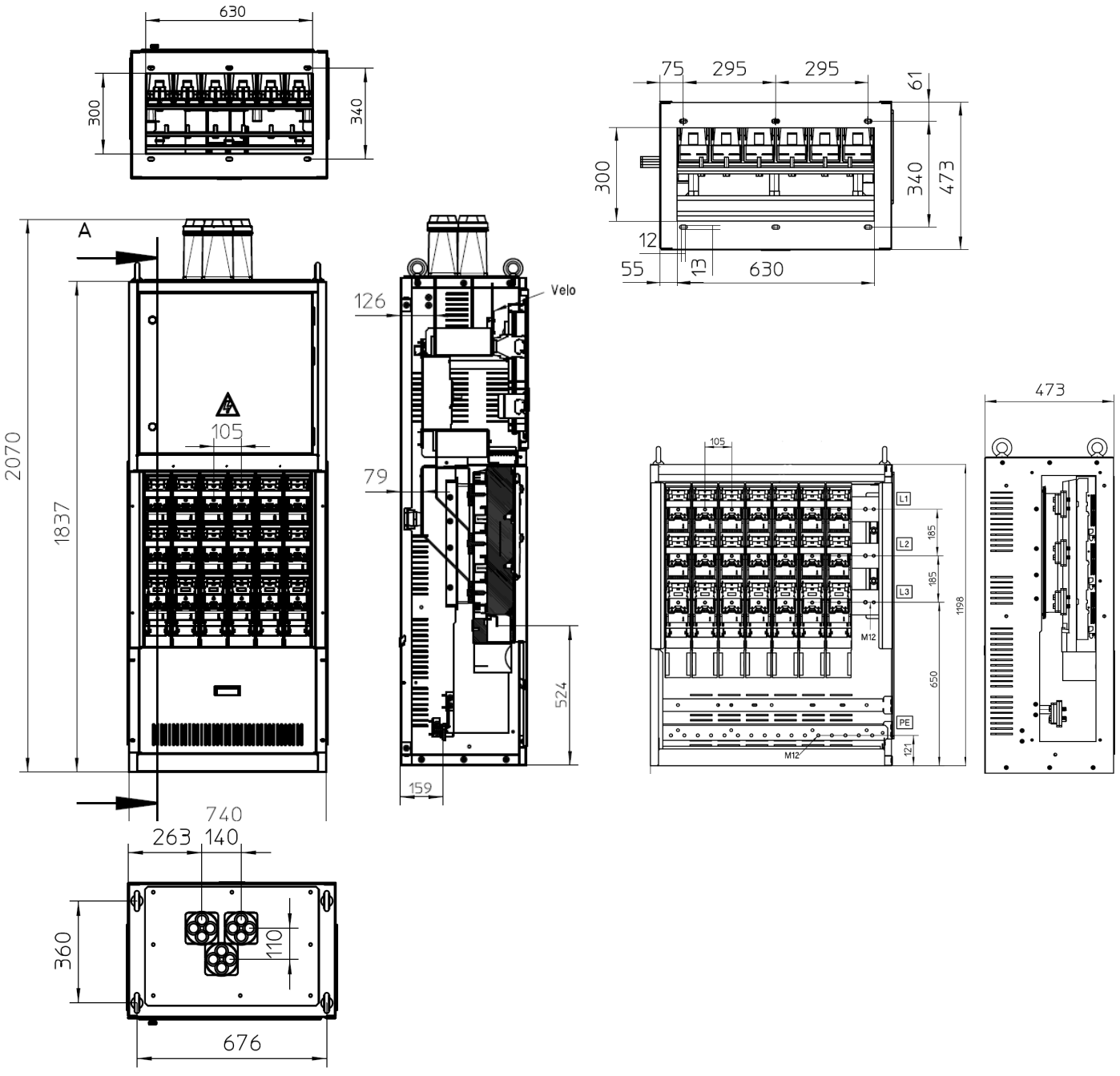
DESCRIPTION

Extensions module	Maximum nº of feeders with NH1/3 fuse switches	Maximum nº of feeders with NH00 fuse switches	Maximum current	Rated operational voltage U_e
LVCP AMP 4H	4	8	From 1600 A to 4000 A	Up to 800 V
LVCP AMP 6H	6	12		
LVCP AMP 8H	8	16		
LVCP AMP 10H	10	20		
LVCP AMP 12H	12	24		

Main features

- Conection both sides (left and right)
- Outgoing through busbar with neutral. Up to 4000 A for 400/500/690/800 V
- From 4 feeders NH1/3 size to 12 NH 1/3 feeders
- Option to combine different size of fuse switches
- Metallic enclosure

DIMENSIONAL DRAWINGS



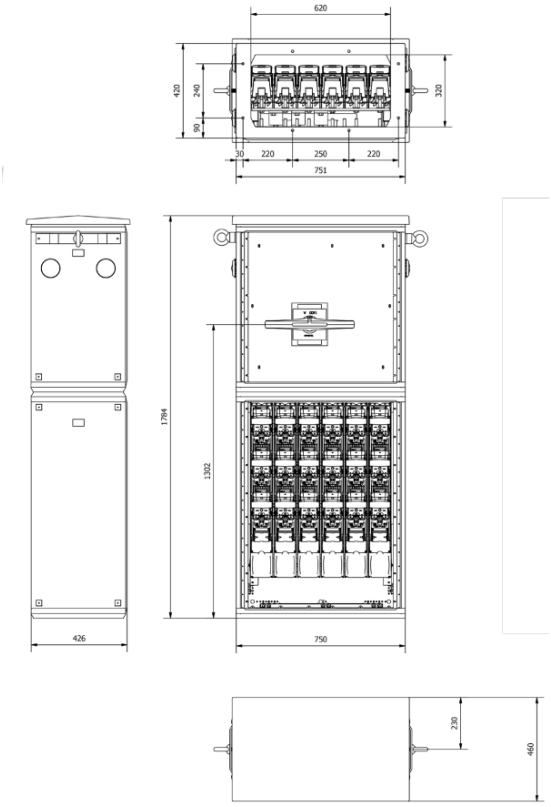
Bottom incoming - Rear outgoing | Insulating 6 feeders

6 feeders

DESCRIPTION

Protected outgoing with	Description	Rated operational voltage U_e	Maximum current	Size	Maximum nº of incomings	Accesories	IP54
LBS Telergon 3P+N. Serie S6000	LVCP EXT POL 6H IC 4P 12E00 SC	400/500/690 V	800 A	NH 00	12	2	✓
	LVCP EXT POL 6H 800 A IC 4P 6E01 SC			NH 1	6	2	✓
	LVCP EXT POL 6H 800 A IC 4P 6E03 SC			NH 3	6	2	✓
LBS Telergon 3P+N	LVCP EXT POL 6H IC 4P 12E00 SC		1600 A	NH 00	12	2	✓
	LVCP EXT POL 6H IC 4P 6E01 SC			NH 1	6	2	✓
	LVCP EXT POL 6H IC 4P 6E03 SC			NH 3	6	2	✓
LBS Telergon 3P 800Vac. Serie S6000	LVCP EXT POL 6H IC 3P 12E00 SC	Up to 800 V	400 A	NH 00	12	2	✓
	LVCP EXT POL 6H IC 3P 6E01 SC			NH 1	6	2	✓
	LVCP EXT POL 6H IC 3P 6E03 SC			NH 3	6	2	✓
LBS Telergon 3P 800Vac	LVCP EXT POL 6H IC 3P 12E00 SC		1250 A	NH 00	12	2	✓
	LVCP EXT POL 6H IC 3P 6E01 SC			NH 1	6	2	✓
	LVCP EXT POL 6H IC 3P 6E03 SC			NH 3	6	2	✓
MCCB 3P+N Type TB2 Moulded case	LVCP EXT POL 6H IA 4P 12E00 SC	400/500/690 V	1600 A	NH 00	12	2	✓
	LVCP EXT POL 6H IA 4P 6E01 SC			NH 1	6	2	✓
	LVCP EXT POL 6H IA 4P 6E01 SC			NH 3	6	2	✓
MCCB 3P Tipo XV Moulded case	LVCP EXT POL 6H IA 3P 12E00 SC	Up to 800 V	1250 A	NH 00	12	2	✓
	LVCP EXT POL 6H IA 3P 6E01 SC			NH 1	6	2	✓
	LVCP EXT POL 6H IA 3P 6E03 SC			NH 3	6	2	✓

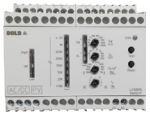
According to standard IEC-61439
LBS = Load Break Switch
MCCB = Moulded Case Circuit Breaker



6 feeders

Bottom incoming - Rear outgoing | Insulating 6 feeders

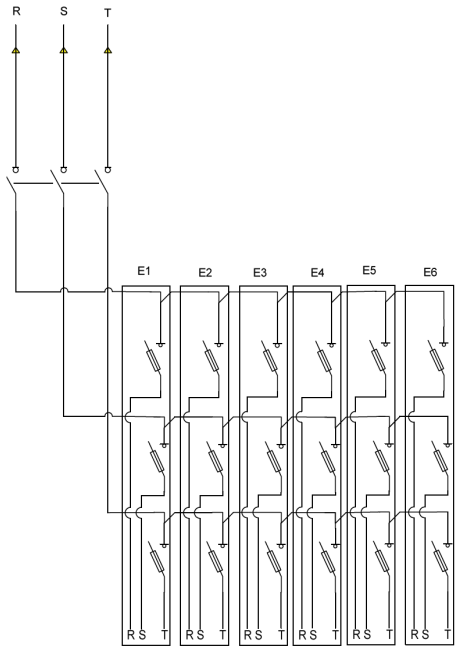
ACCESSORIES

	Accesories	Compatibility
	Kit of BTHC + Surge Arrester	✓
	Insulation Monitor Device (IMD)*	✓
	BTHC for protection of auxiliary transformer	✓
	BTHC for Smart Logger Protection	✓

Up to two accesories in the door. To add more accessories, a vertical fuse switch would be used. For special combinations, consult with commercial department.

* Obligatory for IT regime LV panels

WIRING DIAGRAM



Bottom incoming - Top outgoing | Insulating DIN 5 feeders

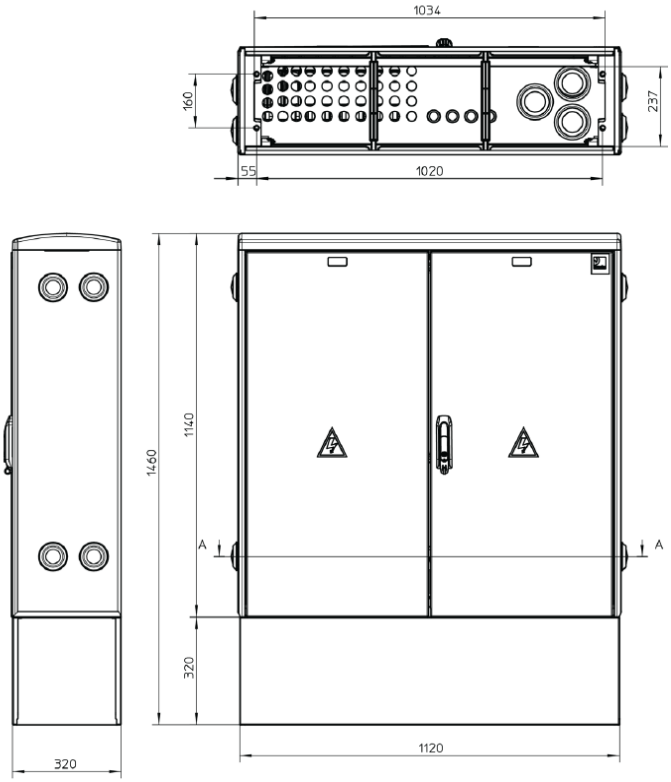
5 feeders

DESCRIPTION

Protected outgoing with	Description	Rated operational voltage U_e	Maximum current	Size	Maximum nº of incomings	Accesories	IP54
LBS Telergon* 3P	LVCP EXT DIN 1600 IC 3P 10E00 SC	400/500/690 V	1600 A	NH 00	10	2	✓
	LVCP EXT DIN 1600 IC 3P 5E01 SC			NH 1	5	2	✓
	LVCP EXT DIN 1600 IC 3P 5E03 SC			NH 3	5	2	✓
LBS Telergon* 3P 800Vac	LVCP EXT DIN 1250 IC 3P 10E00 SC	800 V	1250 A	NH 00	10	2	✓
	LVCP EXT DIN 1250 IC 3P 5E01 SC			NH 1	5	2	✓
	LVCP EXT DIN 1250 IC 3P 5E03 SC			NH 3	5	2	✓

According to standard IEC-61439
LBS = Load Break Switch

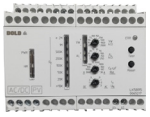
DIMENSIONAL DRAWINGS



5 feeders

Bottom incoming - Top outgoing | Insulating DIN 5 feeders

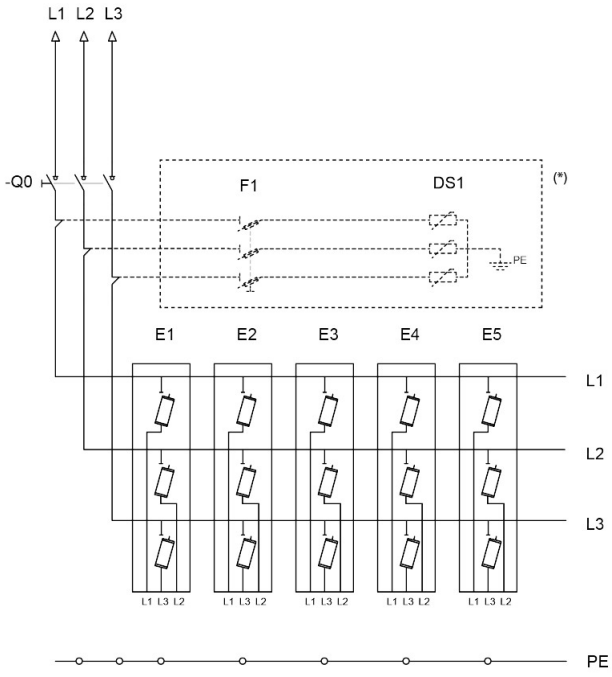
ACCESSORIES

	Accesories	Compatibility
	Kit of BTHC + Surge Arrester	✓
	Insulation Monitor Device (IMD)*	✓
	BTHC for protection of auxiliary transformer	✓
	BTHC for Smart Logger Protection	✓

Up to two accesories in the door. To add more accessories, a vertical fuse switch would be used. For special combinations, consult with commercial department.

* Obligatory for IT regime LV panels

WIRING DIAGRAM



Bottom incoming - Rear outgoing | Outdoor metallic 6 feeders

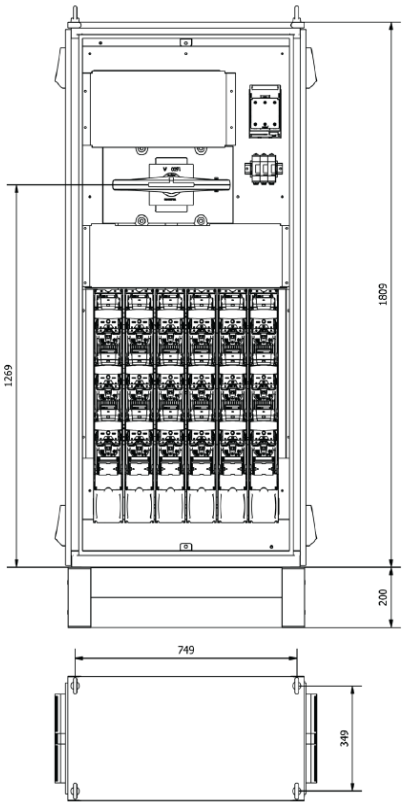
6 feeders

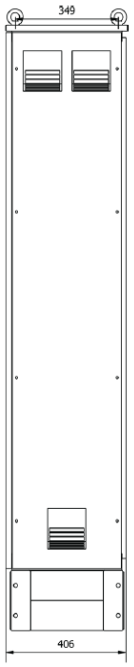
DESCRIPTION

Protected outgoing with	Description	Rated operational voltage U_e	Maximum current	Size	Maximum nº of incomings	Accesories	IP54
LBS Telergon 3P+N	LVCP EXT M 6H IC 4P 12E00 SC	400/500/690 V	1600 A	NH 00	12	2	✓
	LVCP EXT M 6H IC 4P 6E01 SC			NH 1	6	2	✓
	LVCP EXT M 6H IC 4P 6E03 SC			NH 3	6	2	✓
LBS Telergon 3P 800Vac	LVCP EXT M 6H IC 3P 12E00 SC	800 V	1250 A	NH 00	12	2	✓
	LVCP EXT M 6H IC 3P 6E01 SC			NH 1	6	2	✓
	LVCP EXT M 6H IC 3P 6E03 SC			NH 3	6	2	✓
MCCB 3P+N Type TB2 Moulded case	LVCP EXT M 6H IA 4P 12E00 SC	400/500/690 V	1600 A	NH 00	12	2	✓
	LVCP EXT M 6H IA 4P 6E01 SC			NH 1	6	2	✓
	LVCP EXT M 6H IA 4P 6E01 SC			NH 3	6	2	✓
	LVCP EXT M 6H IA 3P 12E00 SC	800 V	1250 A	NH 00	12	2	✓
	LVCP EXT M 6H IA 3P 6E01 SC			NH 1	6	2	✓
	LVCP EXT M 6H IA 3P 6E03 SC			NH 3	6	2	✓

According to standard IEC-61439
LBS = Load Break Switch
MCCB = Moulded Case Circuit Breaker

DIMENSIONAL DRAWINGS

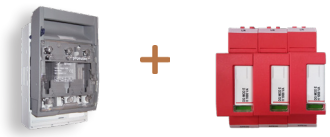
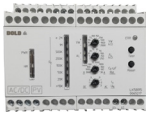




6 feeders

Bottom incoming - Rear outgoing | Outdoor metallic 6 feeders

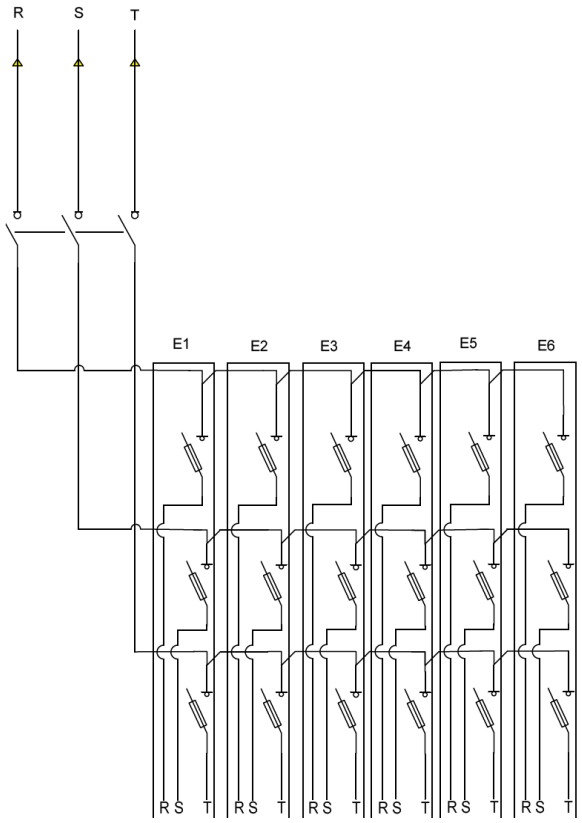
ACCESSORIES

	Accesories	Compatibility
	Kit of BTHC + Surge Arrester	✓
	Insulation Monitor Device (IMD)*	✓
	BTHC for protection of auxiliary transformer	✓
	BTHC for Smart Logger Protection	✓

Up to two accesories in the door. To add more accessories, a vertical fuse switch would be used. For special combinations, consult with commercial department.

* Obligatory for IT regime LV panels

WIRING DIAGRAM



INDOOR PANELS | TECHNICAL DATA

				INDOOR PANELS					
				4 feeders	6 feeders	8 feeders	10 feeders	12 feeders	14 feeders
Electrical characteristics	Rated operational voltage		U_e (V)	400/500/ 690/800 Vac	400/500/ 690/800 Vac	400/500/ 690/800 Vac	400/500/ 690/800 Vac	400/500/ 690/800 Vac	400/500/ 690/800 Vac
	Rated operational current		I_e (A)	630/800/ 1000/1250/1600 A	630/800/ 1000/1250/1600 A	1250/1600/ 1000/2500/3200 A	1600/ 2000/2500/3200/ 4000 A	1600/ 2000/2500/3200/ 4000 A	1600/ 2000/2500/3200/ 4000 A
	Rated permissible 1 second short circuit duration		(kA)	12,5kA / 20kA	12,5kA / 20kA/50kA	20kA / 50kA	50kA	50kA	50kA
	Incomers from inverters		NH 1/3 width	4	6	8	10	12	14
			NH 00 width	8	12	16	20	24	28
	Incoming cable section (incomers from inverters)		NH 00*	Max. 120 mm^2	Max. 120 mm^2	Max. 120 mm^2	Max. 120 mm^2	Max. 120 mm^2	Max. 120 mm^2
			NH 1/3	Max. 300 mm^2	Max. 300 mm^2	Max. 300 mm^2	Max. 300 mm^2	Max. 300 mm^2	Max. 300 mm^2
	Nº and section of outgoing cables to transformer		mm^2	Maximum 4x240 mm^2	Maximum 4x240 mm^2	Maximum 8x240 mm^2	Maximum 8x240 mm^2	Maximum 8x240 mm^2	Maximum 8x240 mm^2
	Rated insulation voltage	Phase-Phase	kV	2,5 kV	2,5 kV	2,5 kV	2,5 kV	2,5 kV	2,5 kV
		Phase-Ground		10 kV	10 kV	10 kV	10 kV	10 kV	10 kV
	Rated impulse withstand voltage	Phase-Ground	kV	8 kV	8 kV	8 kV	8 kV	8 kV	8 kV
Protection degree	IP			IP2X	IP2X	IP2X	IP2X	IP2X	IP2X
	IK			IK08	IK08	IK08	IK08	IK08	IK08

*Extendable to 185 mm^2 using an additional accessory. Consult with the commercial department

OUTDOOR PANELS | TECHNICAL DATA

				OUTDOOR PANELS		
				Cabinet Rear outgoing 6 feeders	**Cabinet Bottom outgoing 5 feeders**	**Metallic panel Rear outgoing 6 feeders**
Electrical characteristics	Rated operational voltage		U_e (V)	400/500/ 690/800 Vac	400/500/ 690/800 Vac	400/500/ 690/800 Vac
	Rated operational current		I_e (A)	1600/1600/1600/1250 A	1600/1600/1600/1250 A	1600/1600/1600/1250 A
	Rated permissible 1 second short circuit duration		(kA)	20	20	20
	Incomers from inverters		NH 1/3 width 100 mm	6	5	6
			NH 00 width 50 mm	12	10	12
	Incoming cable section (incomers from inverters)		NH 00*	Max. 120 mm^2	Max. 120 mm^2	Max. 120 mm^2
			NH 1/3	Max. 300 mm^2	Max. 300 mm^2	Max. 300 mm^2
	Nº and section of outgoing cables to transformer		mm^2	Maximum 4x240 mm^2	Maximum 4x240 mm^2	Maximum 4x240 mm^2
	Rated insulation voltage	Phase-Phase	kV	2,5 kV	2,5 kV	2,5 kV
		Phase-Ground		10 kV	10 kV	10 kV
	Rated impulse withstand voltage	Phase-Ground	kV	8 kV	8 kV	8 kV
Protection degree	IP			IP55	IP54	IP55
	IK			IK10	IK10	IK10

*Extendable to 185 mm^2 using an additional accessory. Consult with the commercial department

Measuring instruments - Panel meters

Description	Rated operational voltage U_e
Current transformer + Panel meter PNT MASTER 3840	400/500/690 V
Current transformer + Panel meter for 800 V AC	800 V

+

Surge arresters

Description	Rated operational voltage U_e
Arrester set 400/500/690 V (BTHC+arrester+fuses)	400/500/690 V
Arrester set 800 V AC (BTHC+arrester+fuses)	800 V

+

Step-down voltage transformers

Description	Rated operational voltage U_e
Single-phase Isolation transformer IP00	230 V
Three-phase Isolation transformer IP23	230/400 V AC

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