

Motor Control Center

Motor Control Center switchboards with withdrawable drawers up to
6300A – 105kA



MCC-Ext

CBL-ENG-MCC-2020-0



Main Features

Dedicated to starting and controlling engines
Offer a quick wiring solution with a wide range of solutions: single drawer, double drawer and mixed cabinet



- Assembled structure, in sheet metal, 20/10 mm thick uprights
- Degree of protection from IP30 in the open version to IP55 with transparent tempered glass door.
- Cubicle complete with hinged panel, wiring plate, horizontal separator and lateral segregation.
- Cubicle complete with horizontal and lateral separator, rear wiring plate with female connector for auxiliaries and power clamps.

- Withdrawable drawer complete with customizable front panel, vacuum disconnect switch, male connector for auxiliaries and power contacts.
- Possibility of lateral coupling.
- Installation of equipment from all major brands on the market.
- Epoxy powder coating after phosphating in RAL 7035 B shade (other RAL shades on request).
- Stainless steel cabinet available on request.
- Patented grounding system.
- Base with reinforced flanges for roller movement.
- Internal accessories to complete solutions for any need.

IEC 61439-1	test n. B0008006 test n. B8020497	short circuit withstand $I_n=6300A$ and $I_{cc}=105$ kA for 1 sec. Verification of Short Circuit Withstand Verification of Equipment Grounding and Protective Circuit Connection
IEC/TR 61641 CEI 17-86 IEC 61439-1 IEC/TR 61641	test n. B0009515 test n. B0007840	Arc conditions due to internal fault 70 kA for 300 msec. Overtemperature Limits Verification Dielectric Properties Verification, includes impulse and industrial frequency Verification of Air and Surface Distances
CEI EN 60529	test n. EPT16AVM033754359 test n. EPT16AVM033754359 test n. EPT16AVM033754359 test n. CESI A902B006 test n. B0011835 test n. B4030377 test n. B3020295	Verification of Protection Degree IP30 Verification of Protection Degree IP41 Verification of Protection Degree IP42 Verification of Protection Degree IP54 Category 2 Verification of Protection Degree IP55 Category 2 Verification of Protection Degree IP56 Category 2 Seismic Test with an acceleration of 1.0g
IEEE Std 6932005 IEC 60068-2-57 IEC 62271-300		

Details



Sidebars: positioned in the left side area for the connection of the vacuum switch power clamps.



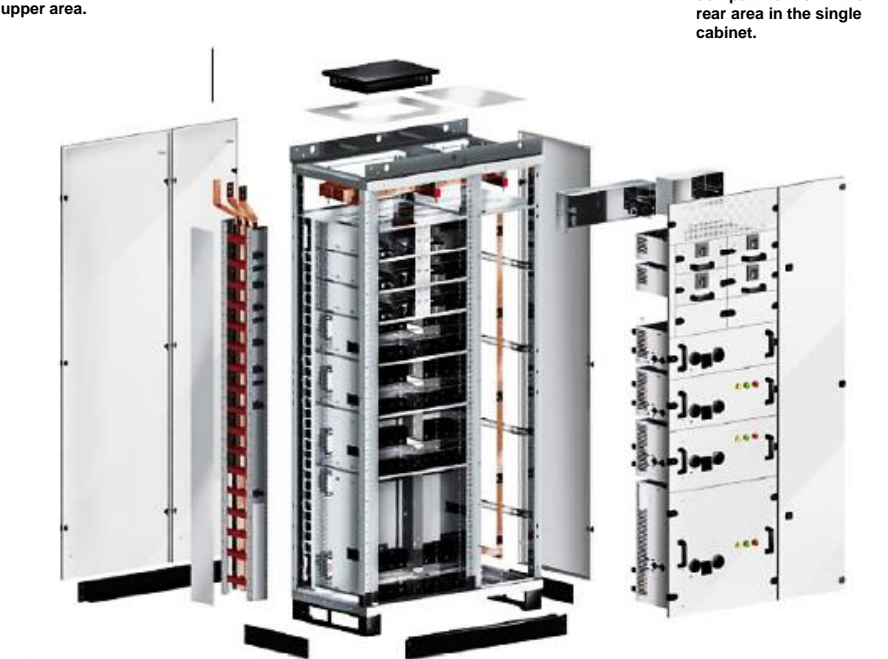
Linear busbar system: busbar system up to 3200 A positioned in the upper area.



Auxiliary and cable area: located in the cable compartment or in the rear area in the single cabinet.



Higher segregation: in galvanized sheet metal with the possibility of using it for channel fixing.



UNIT cabinet with cable compartment: FORM (3B- 4B - 4A) Accessibility front/rear

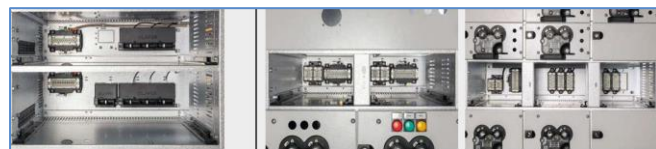


MULTISWITCH Cabinet FORM (3B- 4B - 4A) Accessibility front/rear



Cabinet with glass door UNIT cabinet and MULTISWITCH with glass door up to IP 55

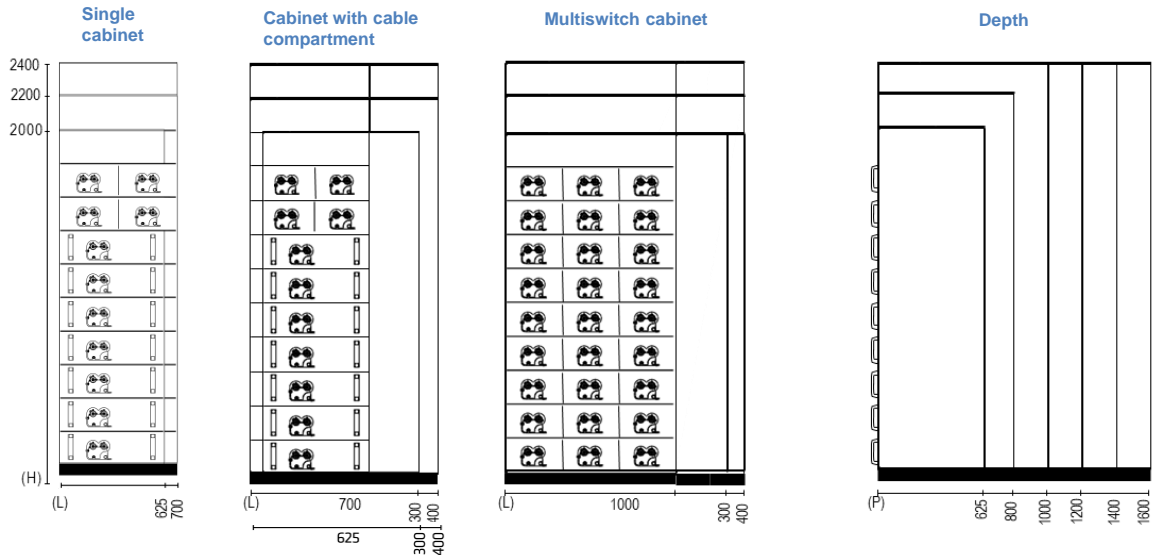
Cubicles for inserting drawers



UNIT

MULTISWITCH

Technical Features MCC Cabinets with Pull-Out Drawers



	Width (L) mm	Height (H) mm	Depth (P) mm	
Single cabinet	625 (24 modules)	2000 / 2200 / 2400 (usable =H- 200)	625 / 800 / 1000 / 1200 / 1400 / 1600	
	700 (24 modules)			
Cabinet with cable compartment	625 + 300 (24 modules)	2000 / 2200 / 2400 (usable =H- 200)	625 / 800 / 1000 / 1200 / 1400 / 1600	
	700 + 300 (24 modules)			
	625 + 400 (24 modules)			
	700 + 400 (24 modules)			
Multiswitch cabinet	1000 + 300 (44 modules)			
	1000 + 400 (44 modules)			
Double-Sided Cabinet	Optional			
Electrical data	Voltage ratings	Rated insulation voltage (Ui)		1000 V
		Rated operating voltage (Ue)		690 V
		Rated impulse withstand voltage (Uimp)		6 / 8 / 12 kV
		Nominal frequency (fn)		50 / 60 Hz
	Current ratings	Rated current (In)	Main bars	Up to 6300 A
			Distribution bars	400 / 630 / 800 A
	Internal Arc Containment	Rated short-time current for 1 sec. (Icw)		105 kA
		Permissible prospective current under arc conditions (Ip arc)		70 kA
		Associated arc duration (t arc)		300 ms
	Drawer pliers		160 / 320 A	
Auxiliary contact connectors		10 / 16 A		
Auxiliary contacts		6 / 1 6 / 24 / 42 / 48		
Mechanical characteristics	Protection degree IP	Internal	Up to IP2X	
		External	From IP30 to IP55	
	Drawer height (h)	150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 600		
	Impact resistance grade IK	IK09 glass door		
		IK10 blind door		
	Accessibility	Front / Side / Rear		
	Execution	Form 3b / Form 4b		
	Material	Structure	Sheet steel, thickness 15/10–20/10 mm	
		Accessories	Galvanized Metal, thickness 15/10 - 20/10 - 25/10 mm	
	Coating	Standard	RAL 7035 B light grey textured	
		Optional	RAL scale colors and stainless steel	
	Plastic components		Flame retardant, self-extinguishing, CFC free	
	On request	Bar System	Insulate / Silvering / Tin plating	
Components		"Drawer in Test" position switch		
		"Disconnected/Service drawer" position switch		
		"Drawer Inserted/Extracted" position switch		
		Position switch		
"Remote Insert/Extract drawer" (N°2)				

MOTOR START From 18.5 kW to 200 kW

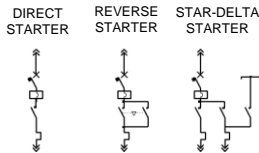
Three-pole extractable drawer

Four-pole extractable drawer

IP30 - IP42 - IP55

Main features

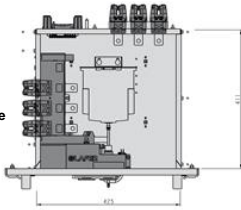
- Connectors for auxiliary
- Output contacts (power clamps)
- Sheet metal support for motor protector
- 5 position switches
- Drawer safety lock



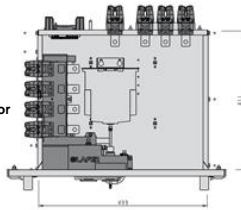
400V			
Drawer Height mm	Direct Starter kW	Reversing Starter kW	Star-Delta Starter kW
150	≤ 18.5	≤ 18.5	≤ 11
200	≤ 30	≤ 30	≤ 18.5
250	≤ 45	≤ 45	≤ 30
300	≤ 75	≤ 75	≤ 45
400	≤ 110	≤ 110	≤ 75
500	≤ 132	≤ 132	≤ 110
600			≤ 132

690V			
Drawer Height mm	Direct Starter kW	Reversing Starter kW	Star-Delta Starter kW
150	≤ 18.5	≤ 18.5	≤ 11
200	≤ 37	≤ 37	≤ 30
250	≤ 75	≤ 75	≤ 55
300	≤ 110	≤ 110	≤ 75
400	≤ 160	≤ 160	≤ 110
500	≤ 200	≤ 200	≤ 160
600			≤ 200

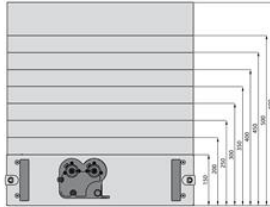
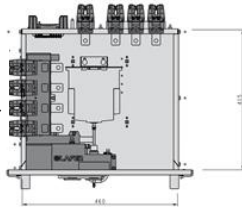
Drawer IP30/ IP42 L=625 Three-Pole



Drawer IP30/ IP42 L=700 Three-Pole or Four-Pole

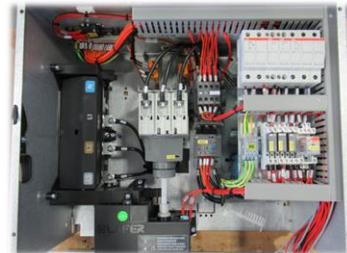


Drawer IP55 L=700 Three-Pole or Four-Pole



Electrical data

Voltage ratings	Rated insulation voltage (Ui)	1000V
	Rated operating voltage (Ue)	400/ 500/ 690V
	Rated impulse withstand voltage (Uimp)	6 / 8 / 12kV
	Nominal frequency (fn)	50 / 60Hz
Power Contacts	Three-Pole or Four-Pole Version	
	Nominal Current [In]	160/ 320A
Auxiliary contact connectors	Nominal Short-Circuit Current [Is]	15/ 38kA
	Nominal Current [In]	10/ 16A
Auxiliary contacts	N° of Auxiliary Contacts	24/ 42/ 48
	Nominal Current [In]	16A
	N° of Cycles	20000000
	Contact Type	2 Changeover Contacts
Dati meccanici	Connection Type	Fast-on 6,3mm
	Drawer Width (l)	625/ 700
	Drawer Height (h)	150/ 200/ 250/ 300/ 350/ 400/ 450/ 500/ 600



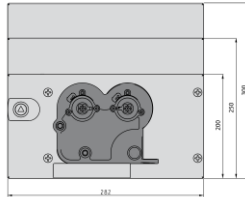
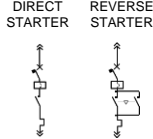
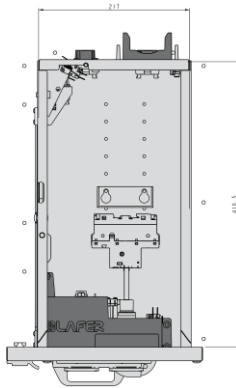
MOTOR START From 7.5 kW to 22 kW

Three-pole extractable drawer

Four-pole extractable drawer

IP30 - IP42 - IP55

Drawer
IP30/ IP42
L=350
Three-Pole or
Four-Pole



Main features

- Connectors for auxiliary
- Output contacts (power clamps)
- Sheet metal support for motor protector
- 5 position switches
- Drawer safety lock

400V		
Drawer Height mm	Direct Starter kW	Reversing Starter kW
150	≤ 7.5	≤ 7.5
200	≤ 11	≤ 11
250	≤ 18.5	≤ 18.5

690V		
Drawer Height mm	Direct Starter kW	Reversing Starter kW
150	≤ 7.5	≤ 7.5
200	≤ 18.5	≤ 18.5
250	≤ 22	≤ 22

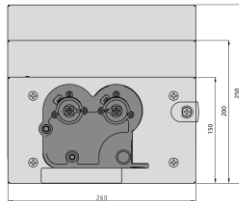
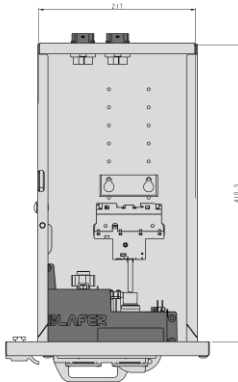
Electrical data		Rated insulation voltage (Ui)	1000V
Voltage ratings	Rated operating voltage (Ue)	400/ 500/ 690V	
	Rated impulse withstand voltage (Uimp)	6 / 8 / 12kV	
	Nominal frequency (fn)	50 / 60Hz	
Power Contacts	Nominal Current [In]	16A	
Auxiliary contact connectors	Nominal Current [In]	10/ 16A	
	N° of Auxiliary Contacts	24/ 42	
Auxiliary contacts	Nominal Current [In]	16A	
	N° of Cycles	20000000	
	Contact Type	2 Changeover Contacts	
	Connection Type	Fast-on 6,3mm	
Dati meccanici	Drawer Width (l)	350	
	Drawer Height (h)	150/ 200/ 250	

MOTOR START From 16A to 100A

Three-pole extractable drawer

Four-pole extractable drawer IP30 - IP42 - IP55

Drawer
IP30/ IP42
L=350
Three-Pole or
Four-Pole



Main features

- Connectors for auxiliaries
- Output contacts (connectors)
- Sheet metal support for motor protection
- Drawer safety lock

400/ 690V	
Drawer Height mm	Nominal Current A
150	≤ 35
200	≤ 80
250	≤ 100

Electrical data		Rated insulation voltage (Ui)	1000V
Voltage ratings	Rated operating voltage (Ue)	400/ 500/ 690V	
	Rated impulse withstand voltage (Uimp)	6 / 8 / 12kV	
	Nominal frequency (fn)	50 / 60Hz	
Power Contacts	Nominal Current [In]	16/ 35/ 80/ 100A	
Auxiliary contact connectors	Nominal Current [In]	10/ 16"	
	N° of Auxiliary Contacts	6/ 16/ 24/ 42	
Auxiliary contacts	Nominal Current [In]	16A	
	N° of Cycles	20000000	
	Contact Type	2 Changeover Contacts	
	Connection Type	Fast-on 6,3mm	
Dati meccanici	Drawer Width (l)	350	
	Drawer Height (h)	150/ 200/ 250	

Accessories and features of pull-out drawers



- Safety:**
- "drawer extracted" safety.
 - "drawer out of service" safety.



- Position switches:**
- "drawer off" position switch.
 - "drawer out" position switch.



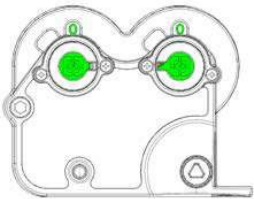
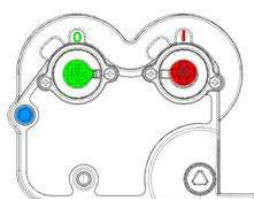
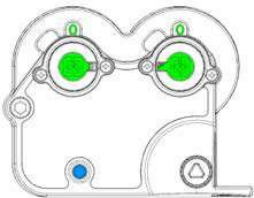
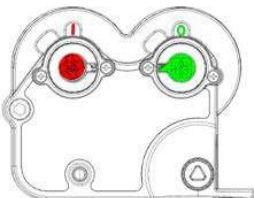
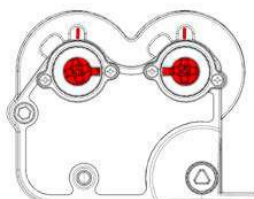
- Double connector:**
48-pole auxiliaries.



- Drawer identification:**
system to uniquely identify the position of the drawer in the cabinet.



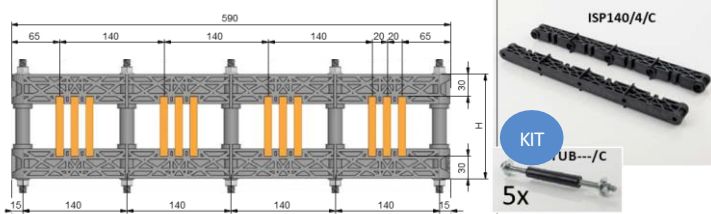
- Double clamp:**
star-delta starter.

PHASE	CIRCUITS	SAFETY LOCKS	DRAWER POSITION
 <p>0 0 WITHDRAWN</p>	<p>Main Circuit Open Auxiliary Circuit Open</p>	<p>Drawer Lockable with Padlock</p>	<p>Extended 20 cm from the Panel</p>
 <p>0 I TEST BYPASS</p>	<p>Main Circuit Open Auxiliary Circuit Closed</p>	<p>Disconnecter Lockable with Padlock</p>	<p>Inserted and Locked in the Panel</p>
 <p>0 0 TEST</p>	<p>Main Circuit Open Auxiliary Circuit Closed</p>	<p>Disconnecter Lockable with Padlock</p>	<p>Inserted and Locked in the Panel</p>
 <p>I 0 DISCONNECTED</p>	<p>Main Circuit Open Auxiliary Circuit Closed</p>		<p>Inserted and Locked in the Panel</p>
 <p>I I IN SERVICE</p>	<p>Main Circuit Closed Auxiliary Circuit Closed</p>		<p>Inserted and Locked in the Panel</p>

Technical characteristics of the busbar system

LINEAR FOUR-POLE BUSBAR HOLDER FOR COPPER BARS WITH 100% NEUTRAL (PHASE SPACING 140 MM)

Four-pole insulator for support with 100% neutral for copper bars from 3000A to 6300A.

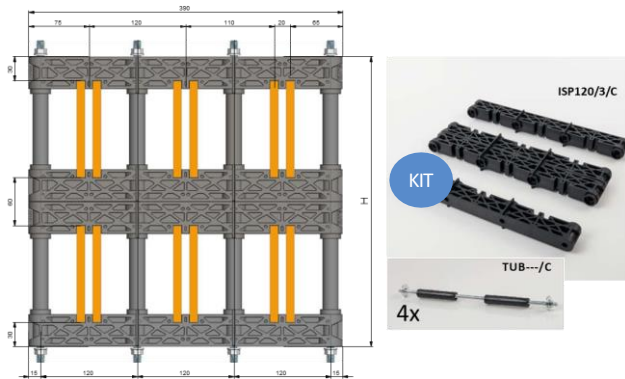


WEIGHT (kg)	BAR DIMENSIONS (H X T)	H (MM)	In (A)
2,1	80x10	140	3000
2,2	100x10	160	3300
2,2	120x10	180	4000
2,5	160x10	220	5000
2,5	200x10	260	6300

BUSBAR HOLDER PHASE SPACING TABLE					
I.Nom	3000A	3300A	4000A	5000A	6300A
Maximum Phase Spacing	Icc	Icc	Icc	Icc	Icc
1000mm	30 kA	35 kA	45 kA	50 kA	60 kA
950mm	35 kA	35 kA	50 kA	55 kA	60 kA
900mm	35 kA	35 kA	50 kA	60 kA	60 kA
850mm	40 kA	45 kA	50 kA	60 kA	65 kA
800mm	40 kA	50 kA	50 kA	65 kA	65 kA
750mm	45 kA	50 kA	55 kA	65 kA	65 kA
700mm	45 kA	55 kA	55 kA	65 kA	65 kA
650mm	50 kA	55 kA	55 kA	65 kA	65 kA
600mm	55 kA	55 kA	70 kA	80 kA	85 kA
550mm	60 kA	60 kA	75 kA	85 kA	90 kA
500mm	65 kA	75 kA	85 kA	100 kA	100 kA
450mm	70 kA	85 kA	95 kA	105 kA	105 kA
400mm	80 kA	95 kA	105 kA		
350mm	90 kA	105 kA			
300mm	105 kA				

LINEAR THREE-POLE BUSBAR HOLDER FOR COPPER BARS WITH DOUBLE CONDUCTOR (PHASE SPACING 120 MM)

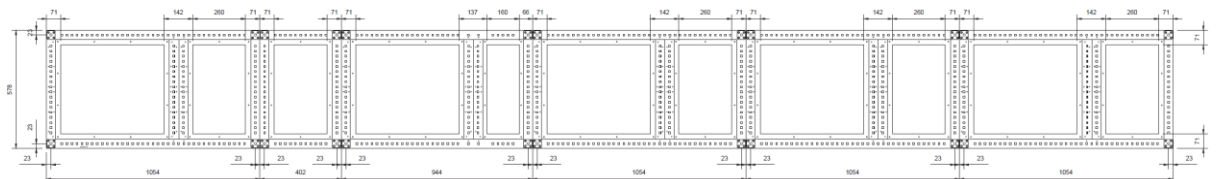
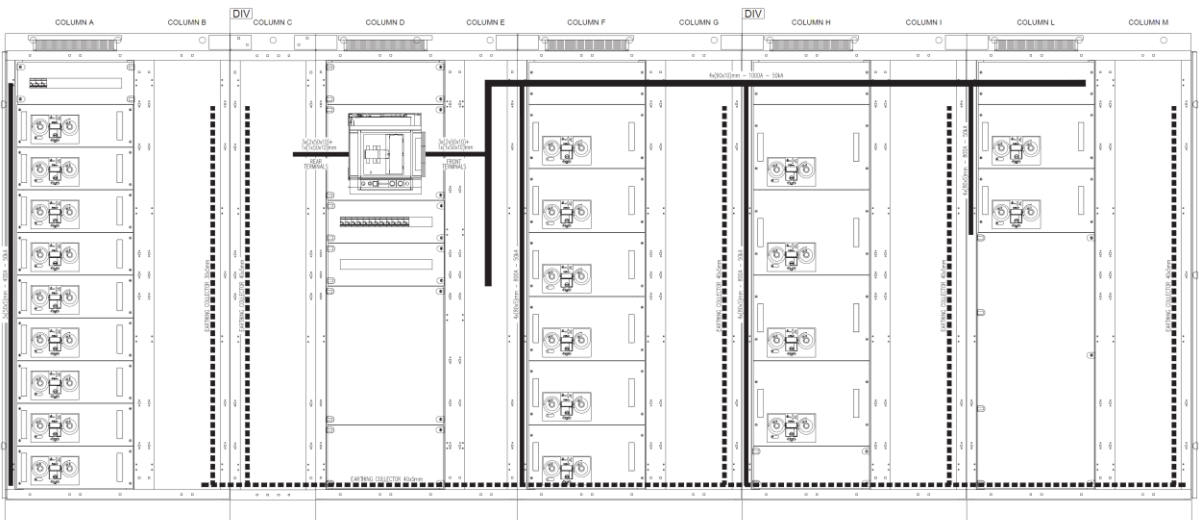
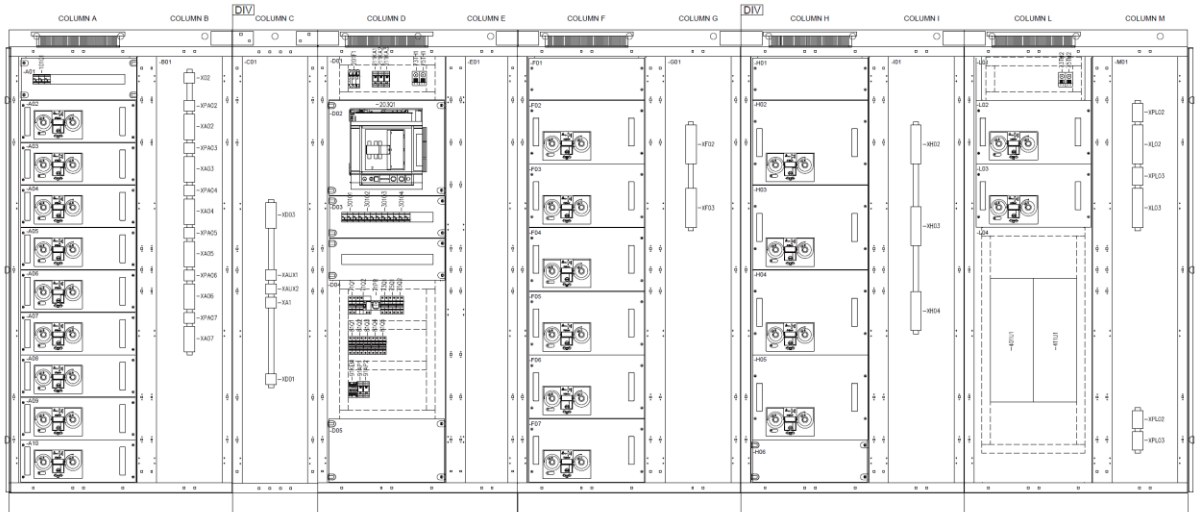
Three-pole insulator for supporting double copper bars from 5000A to 6300A.



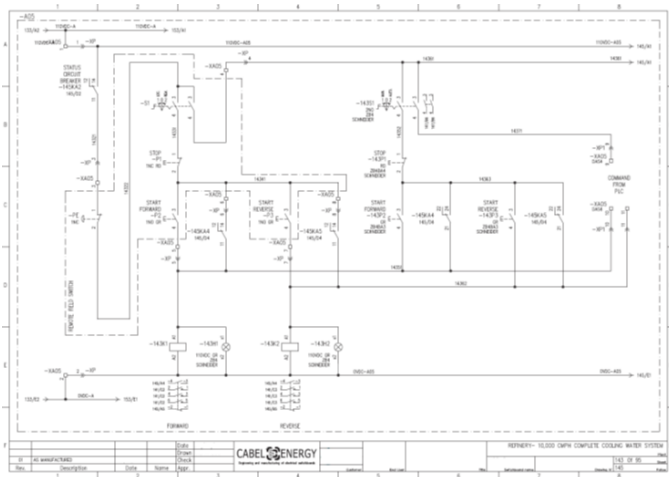
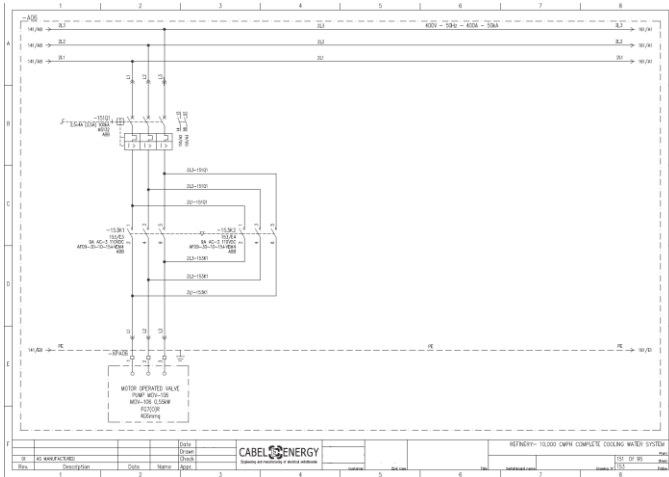
WEIGHT (kg)	BAR DIMENSIONS (H X T)	H (MM)	In (A)
3,5	100x10	320	5000
3,8	120x10	360	6300

BUSBAR HOLDER PHASE SPACING TABLE		
I.Nom	5000A	6300A
Maximum Phase Spacing	Icc	Icc
1000mm	30 kA	35 kA
950mm	35 kA	40 kA
900mm	35 kA	40 kA
850mm	35 kA	40 kA
800mm	40 kA	45 kA
750mm	40 kA	45 kA
700mm	45 kA	45 kA
650mm	45 kA	45 kA
600mm	50 kA	50 kA
550mm	55 kA	60 kA
500mm	60 kA	70 kA
450mm	65 kA	75 kA
400mm	80 kA	90 kA
350mm	90 kA	100 kA
300mm	105 kA	105 kA

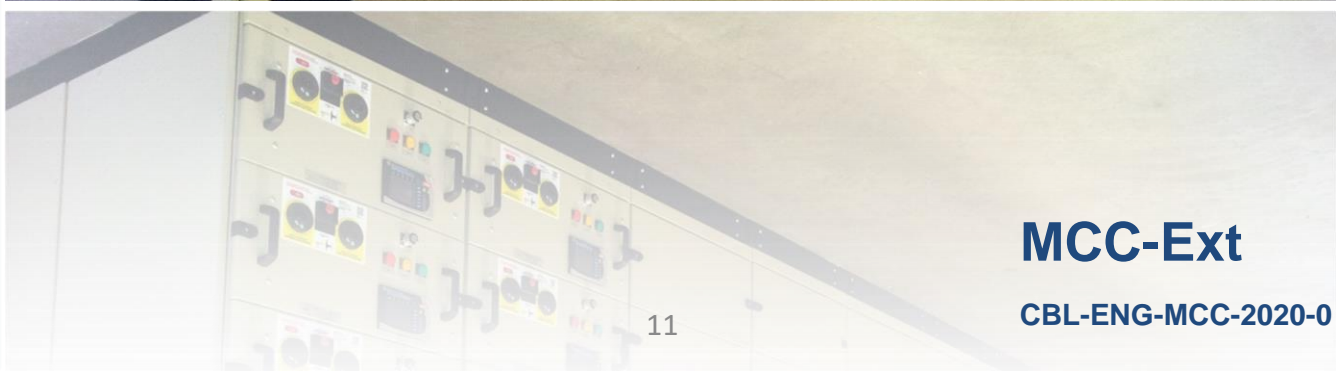
Technical drawing



Technical drawing



Motor Control Center



MCC-Ext

CBL-ENG-MCC-2020-0

CABEL ENERGY

ELECTRICAL SYSTEMS INTEGRATION

CABEL ENERGY S.r.l. always attentive to the specific requests and customer satisfaction, it is able to offer, in addition to the electrical panels it makes, the following specialized and complementary services:

- PLANT ENGINEERING
- MAINTENANCE



Progettazione e realizzazione di quadri elettrici
Installazione e manutenzione impianti elettrici
UNI EN ISO 9001:2015 - UNI EN ISO 14001:2015

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