

Switchboard assembly and installation guide



Preface

Dear Customers,

Here is the new edition of the Switchboard Assembly and Installation Guide, designed to help you build type-tested switchboards in compliance with standard IEC 60439-1.

By following the instructions presented, you will achieve the level of quality necessary for electrical switchboards, in compliance with standard IEC 60439-1.


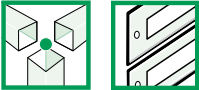








It provides for Prisma Plus information to complement that already found in the catalogues and technical manuals.

This version has been updated to take into account the most recent editions of standards and the latest technology applicable to switchboard manufacturing. In this way, you can be sure to provide end-users with switchboards satisfying industrial standards and presenting the level of quality they expect.

This guide draws on experience acquired by Schneider Electric and its customers, both switchboard builders and end-users, over many years. It is intended for use by switchboard builders in the factory and on site and also by design engineers.

The information is presented in a logical order, from switchboard assembly in the factory through to transport.

Contents

		pages
1	 Delivery and Storage	3
2	 Assembling the enclosures <ul style="list-style-type: none">■ Mechanical assembly■ Electrical continuity■ Degrees of protection: IP, IK	6 7 9
3	 Main busbars <ul style="list-style-type: none">■ Designing the busbars■ Protective conductor■ Partitioning■ Installation of current transformers	12 17 19 24
4	 Installing the devices <ul style="list-style-type: none">■ Device layout■ Mounting the devices■ Safety	28 34 36
5	 Power connections <ul style="list-style-type: none">■ Connecting the power devices■ Connecting to the main busbar■ Preparing the bars■ Assembling the bars■ Connecting with flexible bars■ Connecting with cables■ Distribution blocks	38 41 43 45 49 54 58
6	 Auxiliary and low power circuits <ul style="list-style-type: none">■ Wiring running■ General remarks■ Communication circuits	60 64 66
7	 Labelling and marking <ul style="list-style-type: none">■ Switchboard and device marking■ Conductor marking	70 72
8	 Final factory inspection <ul style="list-style-type: none">■ Facilities■ Tests■ Check list■ CE marking■ Final inspection record report	76 77 80 81 83
9	 Packing <ul style="list-style-type: none">■ Switchboard preparation■ Packing definition■ Dispatch file	86 87 88
10	 Handling and transport <ul style="list-style-type: none">■ Handling■ Transport	90 93
11	Standards and technical documentation	95
	Index	97

Index

Description	pages
A Assembling the bars	45
Assembling the structure	6
Assembly hardware	45
Auxiliaries	59
Auxiliary bundles	63
Auxiliary circuits	59
Available space	35
B Binding (see Securing the bars)	52
Bolts	45
Busbars	11
C Cable	54
Cable routing	57
Cable straps	60
Clearance	13
Communication circuits	66
Connection volume	31
Contact pressure	47
Copper bars bending	43
Copper bars hole punching	43
Creepage distance	14
Current transformer	24
Cutting flexible bars	49
D Degree of protection	9
Dielectric test	78
Direct contact	36
Dispatch file	88
Distance between devices	32
Distribution blocks	58
Drilling flexible bars	50
E Earthing (see Electrical continuity)	7
Earthing wire	8
Electrical connections of functional units	38
Electrical continuity	7
Equipotential bonding	17
Ergonomy	31
F Ferrules	64
Final factory inspection	75
Flexible bars	49
Flexible bar bending	49
Flexible bars hole punching	50
Form	21
Frameworks	6
H Handling	90
High power toroid	55
I Incoming power supply	39
Installing the devices	27
Insulation stripping	50
L Labelling	69
Low power toroid	63
Lug	56
M Marking	69

Description	pages
P Packing	85
Partitioning	19
PEN conductor	18
Power connections	37
Protective conductor PE	17
<hr/>	
R Rigid copper bars	43
Routine test	77
<hr/>	
S Safety clearances	32
Securing the cables	57
Securing the flexible bars	52
Storage	4
Switchboard ventilation	28
<hr/>	
T Temperature devices	28
Terminals	64
Tests report	79
Tightening torque	48
Toroid	67
Transport	93
Trunking	61
Type tests	77
<hr/>	
W Wiring	60

Schneider Electric Industries SAS

Adresse postale
Merlin Gerin Alpes
BP18
F-73804 Montmélián cedex
tél : 33 (0)4 79 75 48 00
www.schneider-electric.com

En raison de l'évolution des normes et du matériel, les caractéristiques indiquées par le texte et les images de ce document ne nous engagent qu'après confirmation par nos services techniques.

As standards, specifications and designs change please ask for confirmation of the information given in this publication.

Publication : Schneider Electric
Conception :
Impression :



Ce document a été imprimé sur
du papier écologique
*This document has been printed
on ecological paper*