

TECHNO MODULE

MODULAR
ELSTEEL
ENCLOSURES

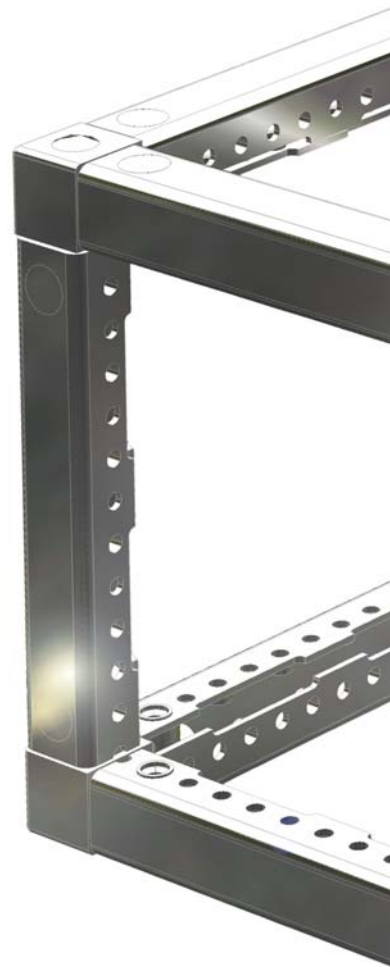


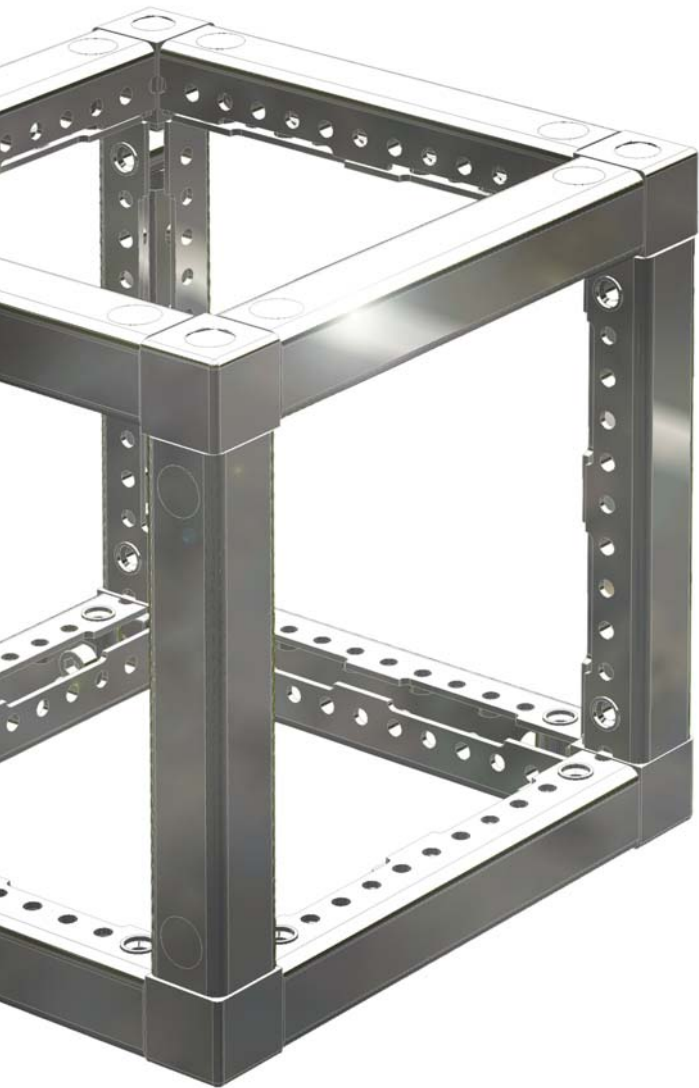
INTRODUCTION

ELSTEEL is an international research and development orientated company.

Our objective is as simple as our products:
To manufacture the worlds best enclosures at the best possible price.

ELSTEEL is a one stop supplier for all enclosures. From the smallest terminal box to the biggest Olympic Stadium distribution panel.





This brochure explains the advantages of Techno Module and how it can be used.

Techno Module is a patented 200mm grid modular system for the switchboard manufacturing industry. Successfully tested to IEC 61439-1.

It is the result of many years of work in research and development, and continuous testing at recognised test stations around the world.

All major brands of breakers, contactors, relays etc. fit perfectly into the system.

THE ELSTEEL PANEL DE

EPD - General Panel Details

General Information

Project Name: Date:

Designer: Ref. No.:

Approved by: Telephone:

Customer Name: Fax:

Address 1: E-mail:

City: Drawing No.:

State/Province: Postal Code:

Country:

General Panel Detail: [IEC 60439-1]

Form Type

Form2 Form3 Form4

[a] [b]

Solution Type

Techno Module Instant Panel

TM Light TM AL/Zn DB2

Main Busbar Location

Top Back Bottom

Box

MS TNS SS

Earthing System

TN-C TN-S TN-C-S TT IT

Mode

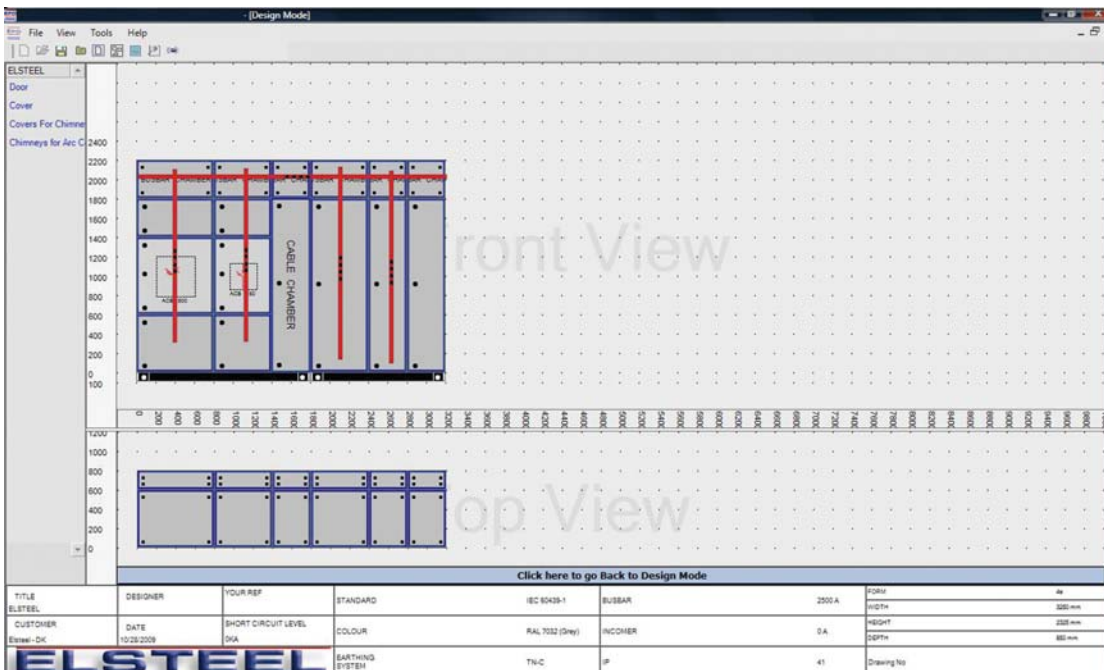
Techno Module Manual Design Techno Module Auto Design Techno Module Templates Techno Module Back to Back

Voltage = [400] Short Circuit Time Duration: Prospective 1 Sec. Colour:

Temperature Rise Over: 30K 70K

Note * No derating of Busbar in this version

Data Entry



Auto Generate

DESIGNER

The first step in designing a successful distribution or motor control centre is planning with EPD.

Basic Information

Enter the information about the customer and project. Click ok and you will be directed to the drawing board. Here you can pick and place components any way you like

Cost calculation

The software will automatically generate a panel. The cost calculation will then generate the exact price for the complete project.

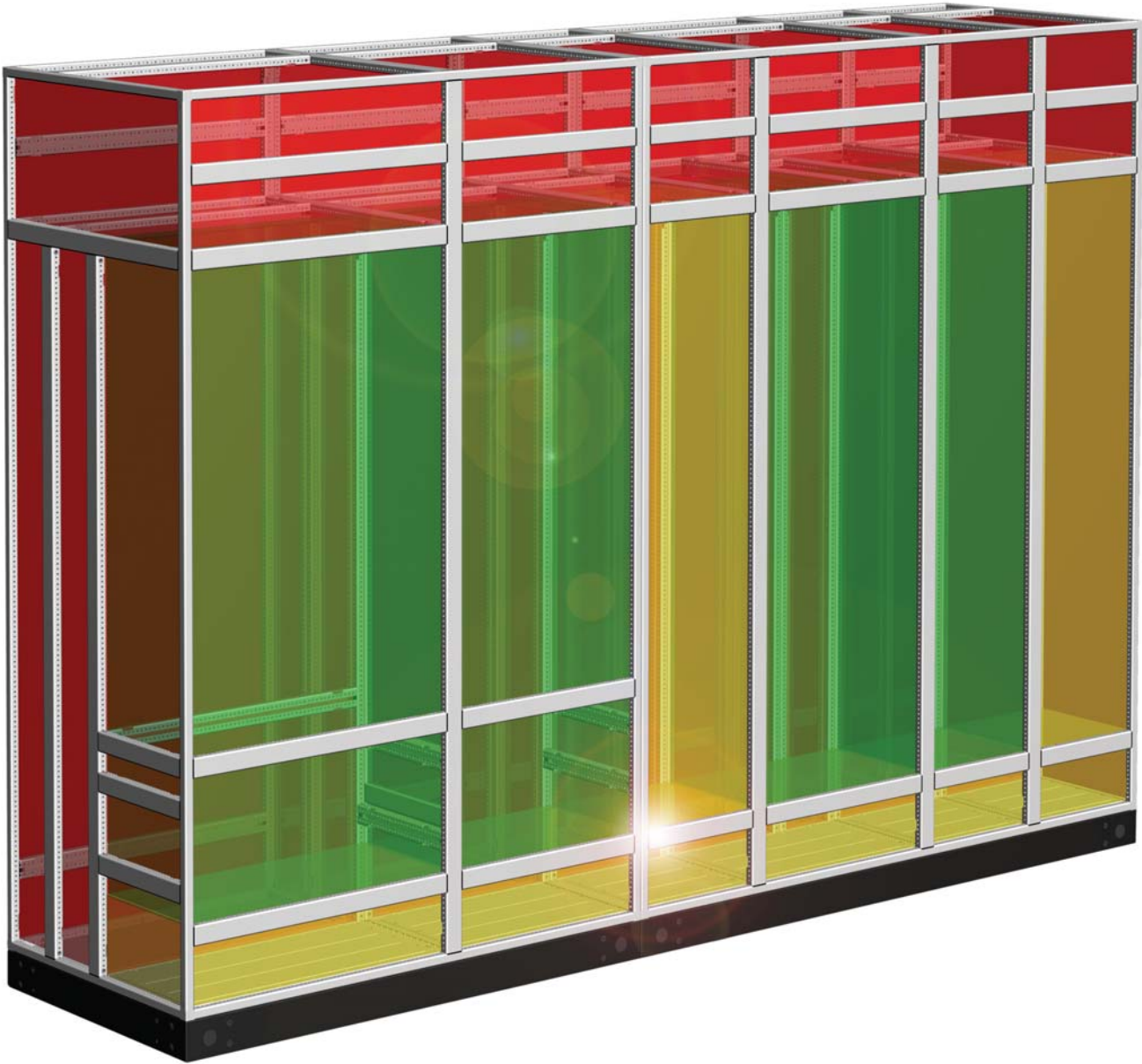
Parts

The EPD will give you all information needed about ELSTEEL products, as well as electrical items. Our software engineers are constantly updating the database with new products.

Technical Info

Drawings are generated in 2D and isometric viewing. You also get temperature rise calculations and diagrams.

LAYOUT



In the design mode of the ELSTEEL Panel Designer program you can divide the panel into 3 sections.

This is usually the best balanced technical solution as well as the most economical.

However, if this layout is not suitable you can rearrange the panel to any other configuration you want.

This system is used both for distribution panels and MCC.

Green - Functional units

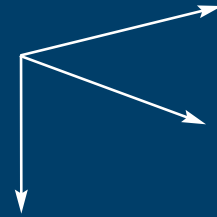
Yellow - Cable chamber

Red - Busbar section

FRAME WORK



The Techno Module system is modular in steps of 200 mm in all three directions.



That means that there is no limit to the possibilities and positions.

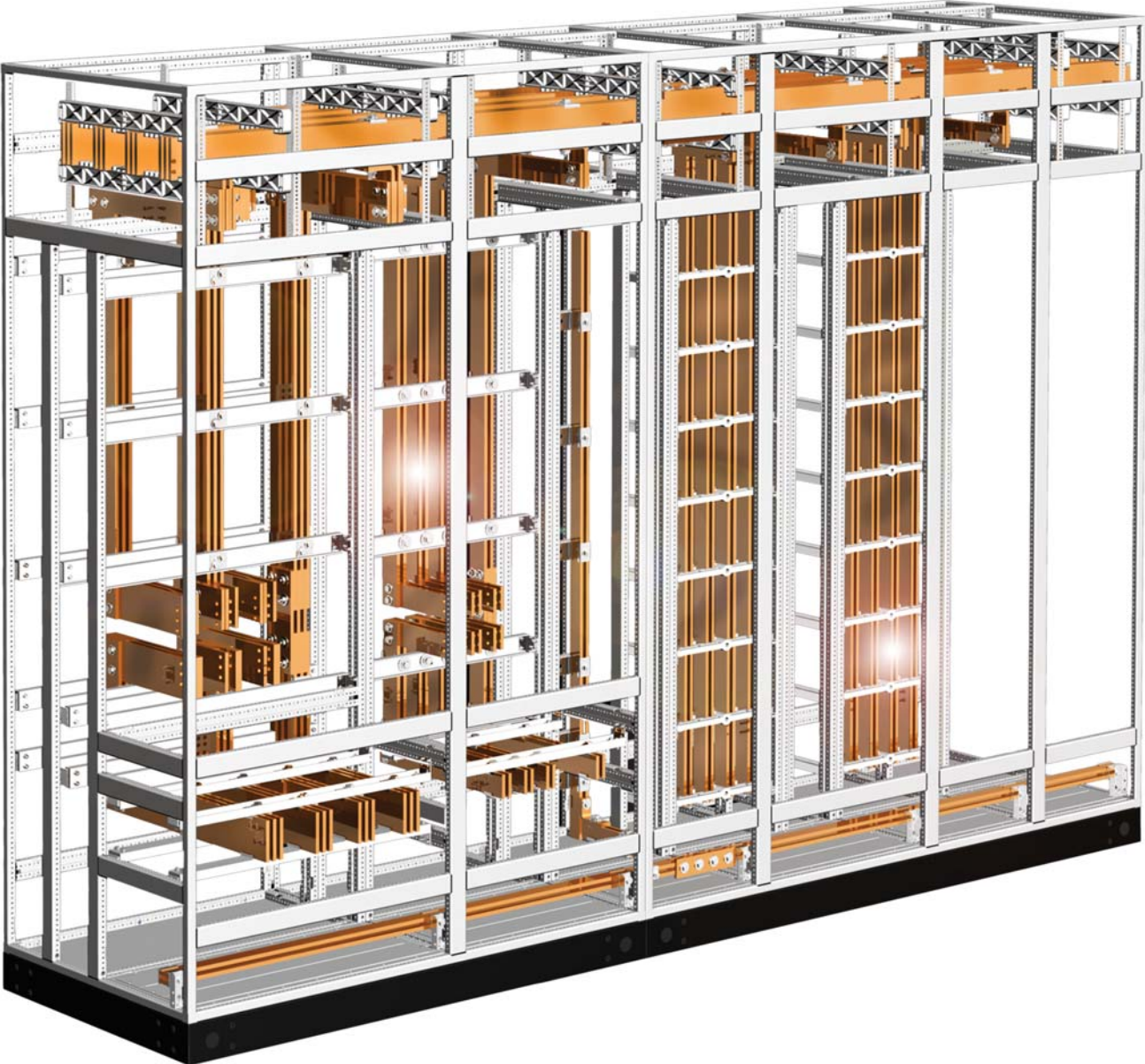
The strong framework is made from 2mm electrogalvanised powder coated steel profile.

It forms a 25mm grid and can be arranged in an unlimited number of ways.

It rests on a modular base frame which incorporates all facilities for dividing and transportation.

Smaller panels upto 630Amps can be built in the economical DB 2 system or Techno Module Light.

BUSBARS



The busbar system incorporates the use of 10 mm thick flat bars. Either copper or aluminium.

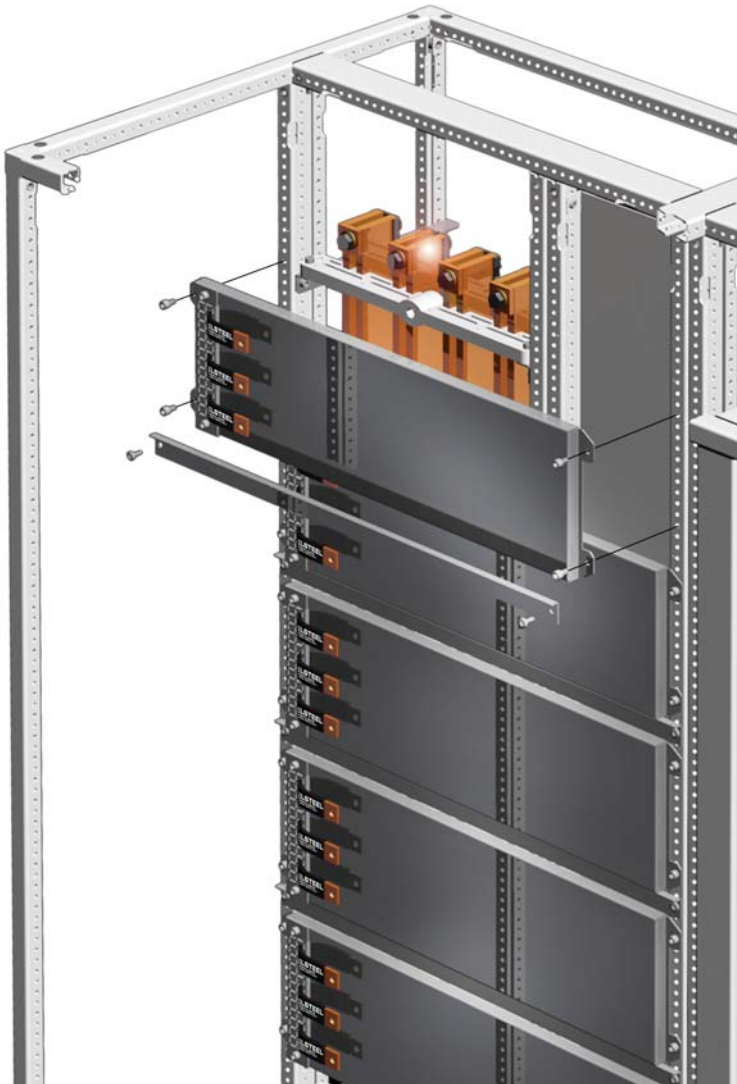
The holders are made from special formulated plastics, and can be mounted in any position inside the framework.

During countless type testing up to 7100 Amp 100 kA/ 1sec. the holders have been tested rigorously again and again, and again, and again, and again...

The holders do not incorporate bolts for clamping but allow the bars to slide during heating and cooling. This eliminates the risk of loose bolts and nuts.

INSERTS - FIXED TYPE





The panel shown here is fitted with MCCB and with solid connections directly on to the droppers. However the ELSTEEL flexibars are also suitable.

The mounting plates have been prepunched for easy breaker mounting.

Compartments are available in all modular sizes.

Separation plates divide the panel into all any form of segregation you wish.

PLUG IN INSERT

These removable units can be used as base for either switches or motor starters. Inserts can be changed safely while the board is live.

This gives great flexibility to the end user since they can do repairs to the panel without any downtime.

Inserts are available as 3 or 4 pole units up to 630 AMP with or without flexible bus bars.

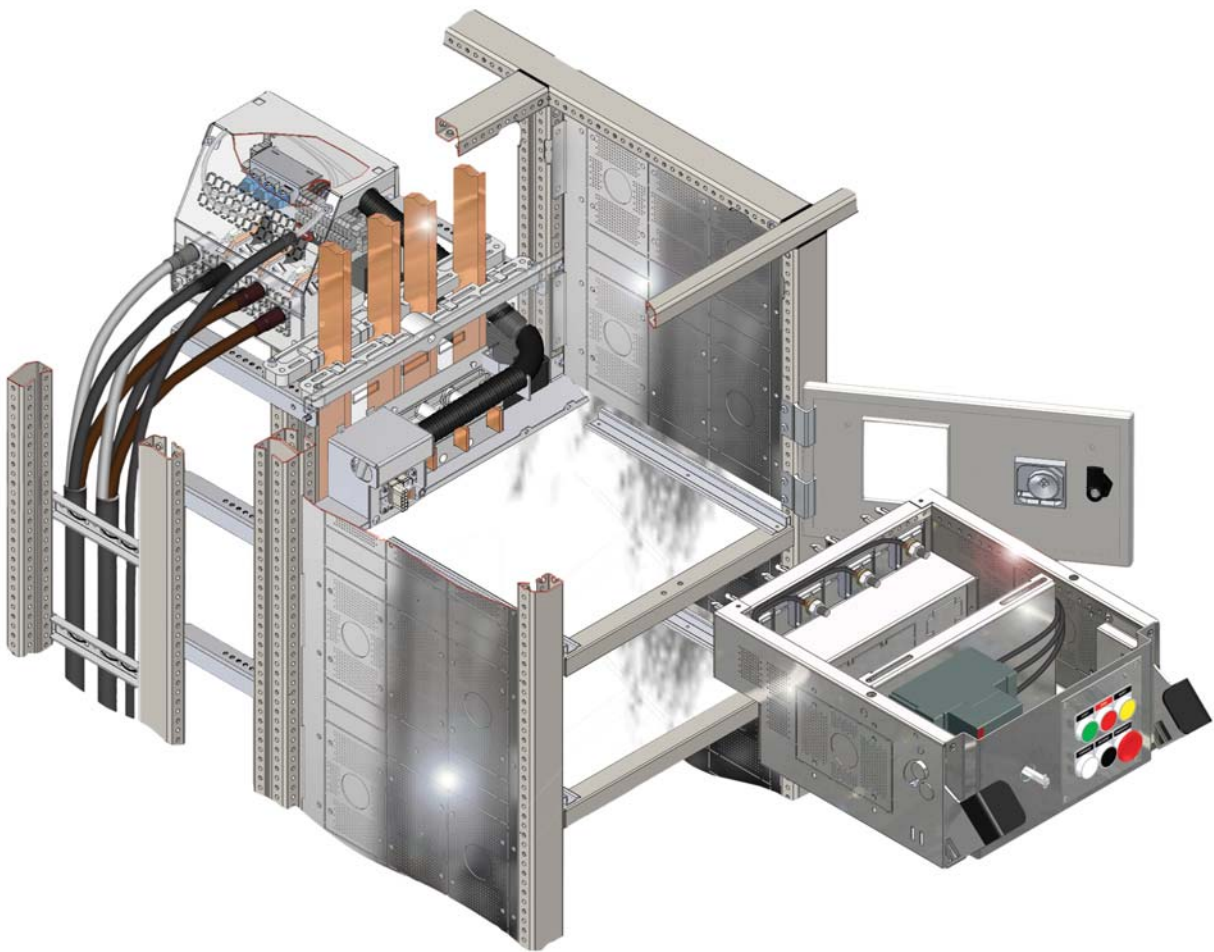
Plugin inserts are very economical when compared to bolted connections.



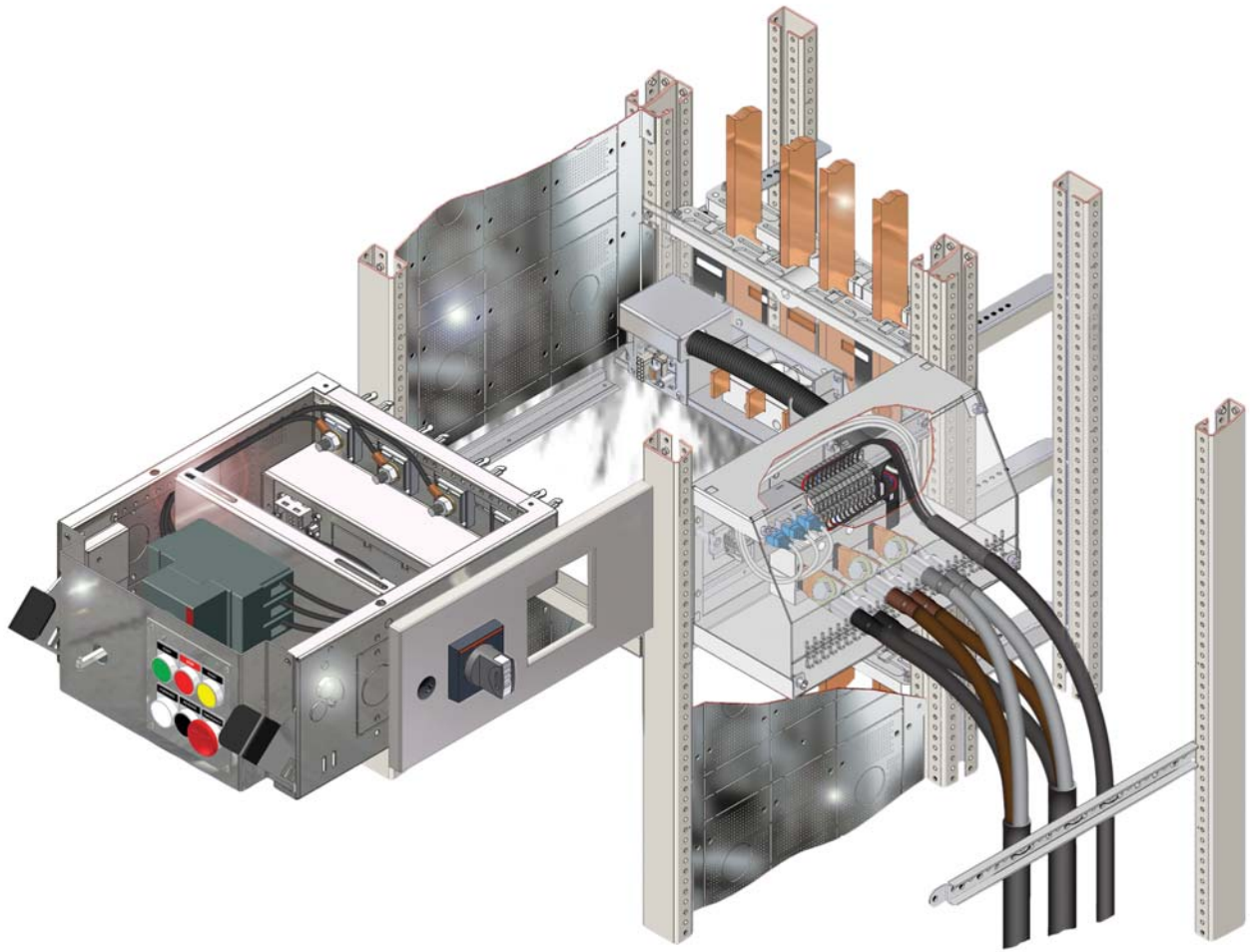


POWER CASSETTE

The Power Cassette is designed as an economical withdrawable solution. It is perfect for pre-fabricated motorstarters or intelligent units that can quickly be replaced.



Power Cassette - Rear Termination



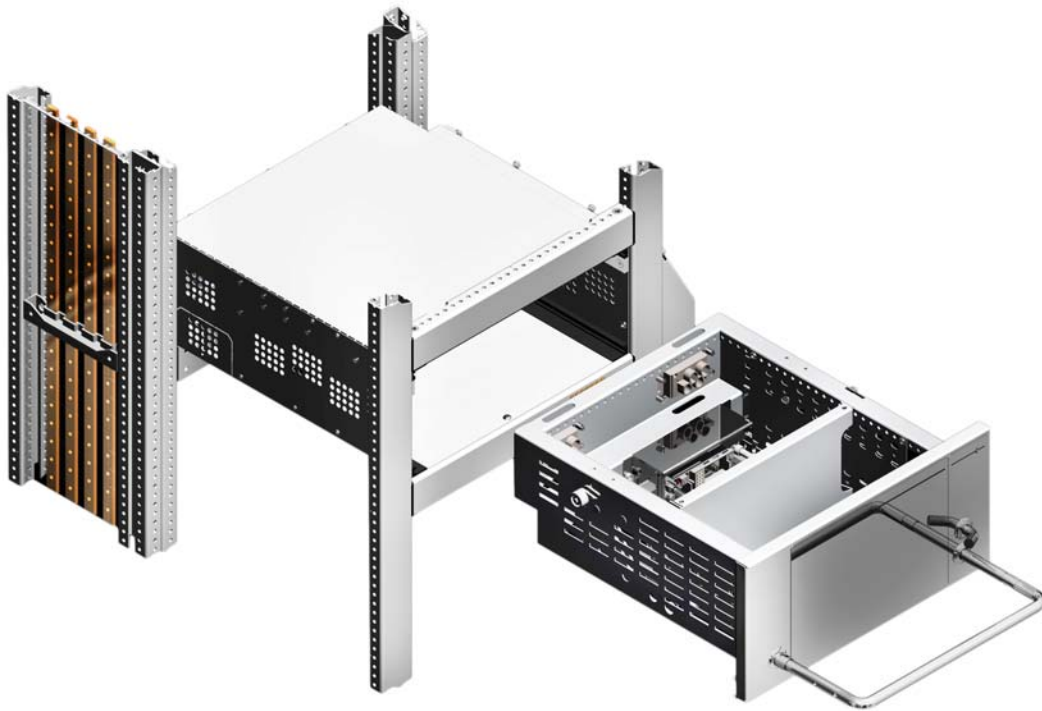
Power Cassette - Side Termination

Instead of a local electrician trying to rectify a fault you can send the unit for fast replacement and restart your process quickly.

FULLY WITHDRAWABLE

This is beyond doubt the fastest and most successful way of changing starters. The heavy duty solid stainless steel mechanism ensures many years of reliable operation.

The optional digital diagnostic display informs the operator of the different positions of the drawer, as well as temperature / amps / voltage / r.p.m.s. etc.



Withdrawable

Where lives are at stake and / or high capital investment is involved, fully withdrawable units are recommended.
Available up to 630 AMP.



FORM 3 + 4

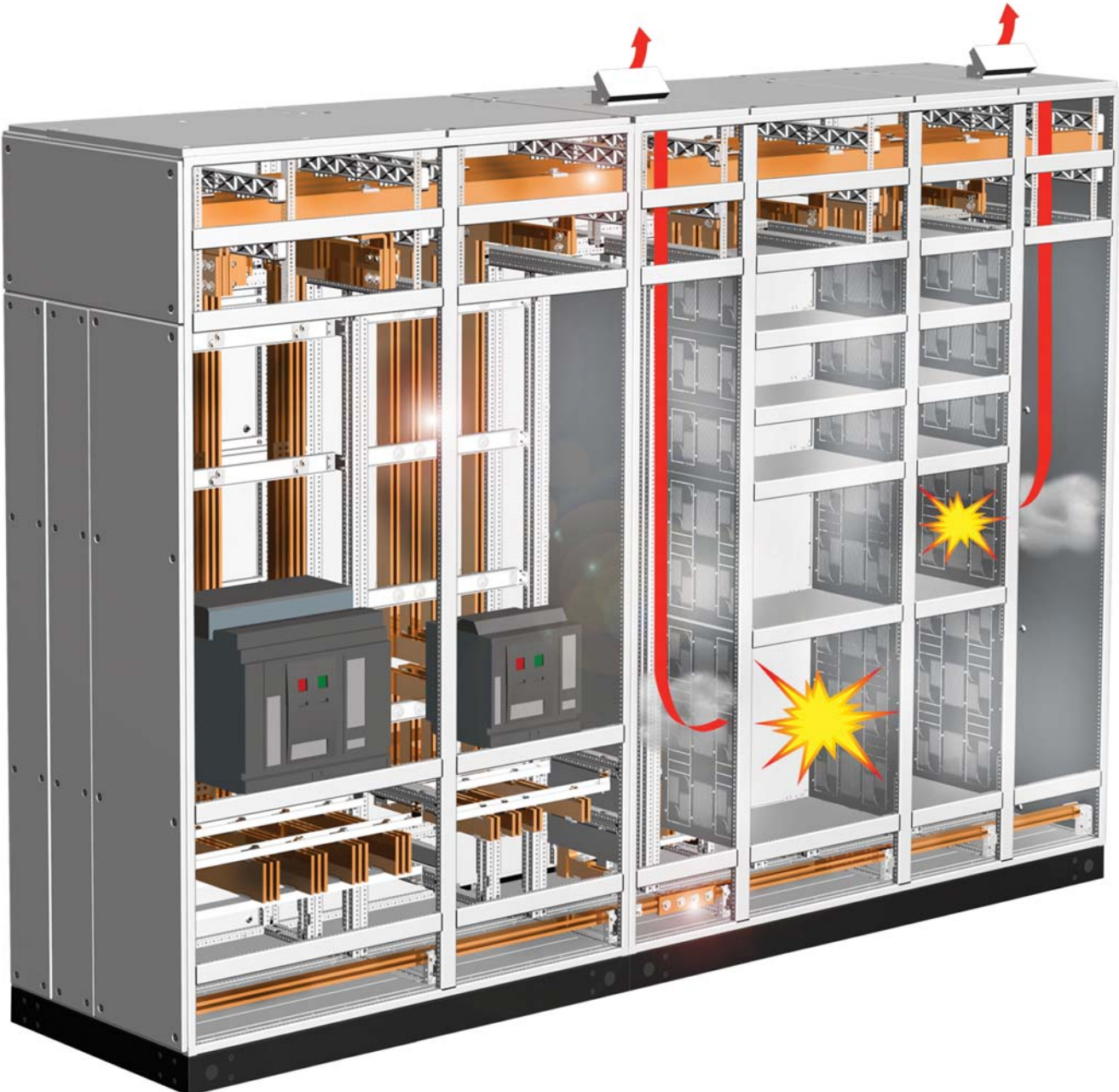
Highest form of personal safety - yes - but also protection of material and environment.

With these separation plates installed it is possible to work in one section of the panel board while the rest of the panel is live.

Separation plates prevent foreign objects or particles resulting from a short circuit in one section, to contaminate the whole panel. Thereby preventing the risk of complete panel damage.



ARC FAULTS



Arc Filters have been included in the design of the separation plate. Once you install the standard chimneys - your enclosure is arc safe.

This means that no flames or solid objects will explode towards the operator in front of the panel.

TESTING + FINISH



Each and every panel is tested by the panel builder/ integrator in accordance with specifications from the Constructors Manual and the routine test specified in IEC 61439-1 before shipment.

The surface of the panel is powder coated in RAL 7035 fine textured finish, It's easy to maintain and will look as new for many years.

Phosphated and chrome passivated pretreatment makes the panel suitable for tough tropical conditions.

Degree of protection up to IP55

After commissioning, the panel is easily expanded and breakers or motor starters can be removed or fitted while it is live.

INSTALLATION COMMISSIONING

TRANSPORT AND INSTALLATION INSTRUCTIONS

LIFTING OF AN ENCLOSURE
Overhead hoisting

300 kg Max.
If load > 300kg
Use Heavy Duty Pinch

600 kg Max.
60' max

Wooden support

Steel rod

Cotton waste

Safety strap

Fork lift

Shipping skid/ Pallet

ELSTEEL
Approved by: N. F. Drawn by: U. K. Date:

TRANSPORT AND INSTALLATION INSTRUCTIONS

MOVING A ENCLOSURE

Palette truck

ELSTEEL Transport wheels

ELSTEEL
Approved by: N. F. Drawn by: U. K. Date: 18/09/2008

TRANSPORT AND INSTALLATION INSTRUCTIONS

JOINING TWO PANELS
Enclosures must be mounted on an even and leveled surface

1

2

3

47 mm

OK

ELSTEEL
Approved by: N. F. Drawn by: U. K. Date: 18/09/2008

TRANSPORT AND INSTALLATION INSTRUCTIONS

FASTENING A PANEL TO FLOOR
Enclosures must be mounted on an even and leveled surface

Detail for drilling

70

70

1

2

21000

Ensure all joints, bolts, etc., are tightened properly before commissioning	
Bolt size	Torque Nm
M5	6
M6	10
M8	24
M10	47
M12	81

ELSTEEL
Approved by: N. F. Drawn by: U. K. Date: 18/09/2008 Pg No: 04

Each and every ELSTEEL enclosure is tested in accordance with IEC 61439-1. Not only at the test station, but also by the panel builder. Instructions are delivered with each panel explaining in detail how to transport and start the panel.

CERTIFICATION

Certificate No. 12798

ASTA CERTIFICATION SERVICES

Established in the year 1986 ASTA House, Oberkrafeld Road, CVT 17C, England

CERTIFICATE OF SHORT-CIRCUIT RATING

APPARATUS: Three Phase and Neutral Horizontal and Vertical Connections in a Type Tested Assembly Sub Rated Voltage 415/240V (50/60 Hz) Rated Current

DESIGNATION: Type 'Elsteel' Technomodule System 2300A

MANUFACTURER: Elsteel Limited, Export Processing Zone, Kal

TESTED BY: Falcon Testing Laboratory Limit

DATE OF TESTS: 6th to 20th July 1995.

The apparatus, constructed in accordance with the description on this Certificate, has been subjected to the series of proving tests 1) BS EN 60439-1:1994, EN 60439-1:1994 and IEC 439-1:1995

The results are shown in the Record of Proving Tests and the values obtained and the general performance are considered and to justify the ratings assigned by the manufacturer as stated.

Short-time and peak current withstand ratings:


- 3000A Horizontal and vertical busbars : 2x150mmx10mm
- 3000A Incoming circuit connections : 2x150mmx10mm
- Three phase : 80kA for 1 second
- Adjacent phase and neutral : 50kA for 1 second

This Certificate also verifies the temperature rise limits of the 3000A in accordance with Clause B.2.1.

The record of Proving Tests applies only to the apparatus test of any apparatus having the same designation with this test.

This Certificate comprises 11 pages, 1 diagram, 4 photographs, 12 drawings on page 1.

Only integral reproduction of this Certificate (or parts) which are clearly the property of the issuing authority, are permitted as Services. ASTA House, Oberkrafeld Road, A.



IPH - Institut für elektrische Hochleistungstechnik GmbH

TYPE TEST REPORT

Test document file: 170.265.2.230

Client: Eric Legshøj
Sylstingvej 8
DK-3060 Espergærde / Denmark

Manufacturer: ELSTEEL
Siparwood 2, Katanayake IPZ, Sri Lanka

Equipment under test: Busbar sub-section of a low-voltage switchgear controller assembly

Type: TECHNOMODULE BUSBAR SYSTEM

Rated voltage (three-phase 50 Hz):
Rated normal current of main busbar:
Rated short-circuit withstand current of main busbar:
Rated current of outgoing unit (2x10mmx20mm):
Rated short-circuit withstand current of outgoing unit:
Rated duration of short-circuit:

Normative documents: DIN VDE 0660 part 500/4 91;
IEC 439-1, edition 1995;
EN 60439-1, edition 1994;
BS 5485 part 1

Test performed:
- Temperature rise-test
- Verification of short-circuit withstand strength
- Verification of the effectiveness of the protection

Test result: The equipment under test has passed the test performed at its rated characteristics.

Berlin, 8 January 2003

E. Legshøj
Head of Test Lab

This documentation shall not be reproduced, either wholly or in part, without the written consent of the issuing authority.

The IPH-Berlin is an independent test institute. Its test laboratories are accredited to European norms by a national accreditation body with the following designations: VDE 2105/1 (DIN EN ISO 9001) and VDE 2105/2 (DIN EN ISO 17025).



INSTITUT „PROFFELD“ FÜR ELEKTRISCHE HOCHLEISTUNGSTECHNIK GAMBIA

Unabhängiges, akkreditiertes Prüflaboratorium / Independent, accredited test laboratory

TYPE TEST REPORT

Document No.:
Client:

Manufacturer:

Test object:

Type:

Manufacturing No.:

Rated characteristics:
Rated operational voltage
Rated insulation voltage
Rated current
Main busbar
Distribution bus
Rated short-time withstand current
Main busbar
Distribution bus
Degree of protection

Normative documents:

Test performed:

Date of test:

Test result:
Result: Satisfactory
Head of low-voltage test laboratory
Test engineer

Berlin, 28 June 1998

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IPH - SANDERBERG ALLEE 27B - D-12051 BERLIN



Type Approval Certificate Extension

This is to certify that Certificate No. 02/2000 for the undated products is extended and renumbered as shown.

This certificate is issued to:

PRODUCER: Elsteel Denmark A/S
Lufthavn 23,
DK-3000 Helsingør
Denmark

PLACE OF PRODUCTION: Elsteel Ltd,
Spar Road 2,
I.P.Z. Katanayake,
Sri Lanka

Elsteel Poland Spolka Z O.O.
Ul. Słowackiego 5
40-040 Ostrowiec
Poland

DESCRIPTION: Low voltage modular switchboard assemblies & stainless steel cabinets.

TYPE: Techno-module modular system for 690V, 50-60 Hz, bus ratings: 250-3000A, SOC, made from stainless steel cabinets.

APPLICATION: Marine, offshore and industrial use where the test specification is satisfactory for the intended operation.

STANDARD: Type tested to EN 60439-1:1994
Enclosure protection IP 42 to EN 60529 (switchboards)
Enclosure protection IP 20 to EN 60529 (SOC Bus)

RATINGS: For switchboard assemblies having different rating of bus bar/rating configuration and/or enclosure protection different from the tested assemblies, the actual properties may be derived by calculations based on the tested items.

Certificate No.: 02/2000(03)
Issue Date: 29 October 2007
Expiry Date: 17 April 2012
Sheet: 3 of 2

Lloyd's Register EMEA
Shearwater Way, EC2A 4PU London

Lloyd's Register, its officers and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the "Lloyd's Register Group". The Lloyd's Register Group assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice of any person acting in the capacity of a consultant, whether or not such person is named herein, or for any consequences arising from the use of the information contained in this document.

Paul Erik Hansen
Copenhagen Design Support Center



CERTIFICATE OF TYPE APPROVAL PROGRAM

CERTIFICATE NUMBER: CL1687410.X

PLANT LOCATION: Valmikiya, Sri Lanka

ABS OFFICE:

CERTIFICATE OF Manufacturing As

This is to Certify that a representative of this ELSTEEL (PVT) LT

Attend their facilities at the location noted above, in order to ensure associated quality assurance and quality control program of consistently manufacturing.

Power Distribution Module

In compliance with their ABS Product Design Assessment standards defined therein, the product listed on their Certificate are eligible to be placed on the Bureau's List of annual facility audits by a representative of this Bureau, and (5) years.

ISSUE DATE: 19 Jun 09

SUBMITTER'S SIGNATURE: [Signature]

FIRST ANNUAL ENCOUNTERMENT: [Signature]

SECOND ANNUAL ENCOUNTERMENT: [Signature]

THIRD ANNUAL ENCOUNTERMENT: [Signature]

FOURTH ANNUAL ENCOUNTERMENT: [Signature]

ABS# 203-06

Note: This certificate evidences compliance with one or more of the Rules, Code of Construction, or a statutory, technical or manufacturer's standard, its conditions, its terms, or other authorized entities. This certificate is governed by law.

Page 1/3
Certificate number: 22875AU BY



TYPE APPROVAL CERTIFIC

This certificate is issued to:

ELSTEEL (PRIVATE) LTD.
SRI LANKA

for the type of product:

SWITCHBOARDS (LOW VOLTA
Low Voltage Modular Electrical Switchboards & Motor Control


Requirements:
Bureau Veritas Rules for the Classification of Diesel Ships, IEC 60439-1.

This certificate is issued to attest that ELSTEEL (PVT) LT has obtained the relevant approval and is bound to comply with the relevant technical standards.

This certificate will expire on: 16 Jun 21

For BUREAU VERITAS, At: RU MEASUR (DOMESTIC), on 16 Jun 2015.

Signature: [Signature]



DET NORSKE VEI TYPE APPROVAL CER

CERTIFICATE NO. E-18273
This Certificate consists of 4 pages.

This is to certify that the Power Switch Board with Busbar Techno Module

Manufacturer: **ELSTEEL(Private)L**
Katanayake, Sri Lanka

is found to comply with Det Norske Veritas' Rules for Classification of Ships, High Voltage Offshore Standard IEC 60439-1.

Application: Type approval regards system design per Drawings for the actual application is to be submitted for

Rated voltage (V) | 415 - 690 - 10
Rated current (A) | up to 7100
Rated freq. (Hz) | 50 or 60

Place and date:
Havik, 2010-07-08
For Det Norske Veritas AS
Matti Lammason
Head of Section

Local Office:
Chennai

Note: This Certificate is subject to terms and conditions available on the website of Det Norske Veritas AS. The validity date relates to the Type Approval Certificate and not to the approval of the product.

Det Norske Veritas AS, Havn 100, Norway
Form No. 22-064 Issue January 08

RUSSIAN MARITIME REGISTER OF SHIPPING
RUSSIAN MARITIME REGISTER OF SHIPPING

СВИДЕТЕЛЬСТВО О ТИПОВОМ ОДОБРЕНИИ TYPE APPROVAL CERTIFICATE

6.3.3

Исполнитель: **ELSTEEL (PVT) LTD.**

Адрес: Spar Road 2, Phase 1, I.P.Z., Katanayake, Sri Lanka

Продукт: Technomodule

Модуль коммутационной аппаратуры низкого напряжения и системы "TECHNO MODULE", "TECHNO MODULE LIGHT", "BOXES-BUSSES", "TECHNO MODULE LIGHT", "BOXES-MUSSES".

Low-voltage switchgear and controller assemblies "TECHNO MODULE", "TECHNO MODULE LIGHT", "BOXES-BUSSES".

Код идентификации: 11190000

Этот сертификат выдан в соответствии с требованиями Регистра, в том числе в отношении соответствия требованиям международных конвенций, в том числе в отношении соответствия требованиям международных конвенций, в том числе в отношении соответствия требованиям международных конвенций.

This is to certify that on the basis of the survey and tests carried out the above mentioned type complies with the requirements of Russian Maritime Register of Shipping.

Применяются классификация и конструкция морских судов, часть XI, издание 2010.

Rules for the Classification and Construction of Sea-Going Ships, Part XI, Edition 2010.

Настоящий Сертификат выдан в соответствии с требованиями Регистра, в том числе в отношении соответствия требованиям международных конвенций, в том числе в отношении соответствия требованиям международных конвенций.

The Type Approval Certificate is valid until: 24.03.2015

Настоящий Сертификат выдан в соответствии с требованиями Регистра, в том числе в отношении соответствия требованиям международных конвенций, в том числе в отношении соответствия требованиям международных конвенций.

This Type Approval Certificate becomes invalid in case of departure from the Technical Specifications during Construction of Ships and Manufacture of Shipboard Materials and Products.

Дата выдан: 24.03.2010

№: 11.00001.270

Дата истечения: 24.03.2015

Российский морской регистр судоходства
Russian Maritime Register of Shipping

Директор: [Signature]

Исполнитель: **ELSTEEL (PVT) LTD.**

TEST PERFORMED	CERTIFICATION AUTHORITY	CERTIFICATE REFERENCE
Techno Module Panels Comply to IEC 60439-1 / IEC 61439-1 & 2		
01. 400A Design Verified with Schneider breakers	ASTA	18047
02. 400A type tested with LS breakers (Instant Panel Light)	ASTA	17013
03. 800A Design Verified with Schneider breakers	ASTA	18048
04. 800A Design Verified with ABB breakers	ASTA	17545
05. Additional temperature rise test for ASTA-17545 test	IPH	3345.2091256.0969
06. 800A type tested with LS breakers (TM Light Panel)	ASTA	17012
07. 800A type tested with MG breakers (TM Light Panel)	ASTA	16899
08. 1600A Design Verified with Schneider breakers	ASTA	17864
09. Additional temperature rise test for ASTA-17864 test	IPH	2633.2100582.0704
10. 1600A Design Verified with ABB breakers	ASTA	17544
11. Additional temperature rise test for ASTA-17544 test	IPH	3345.2091255.0986
12. 1600A type tested with LS breakers	ASTA	17011
13. 1600A type tested with GE breakers	ASTA	16149
14. 2000A type tested with Siemens breakers	ASTA	16783
15. 2500A Design Verified with Schneider breakers	ASTA	18046
16. 2500A Design Verified with Schneider breakers	ASTA	17865
17. Additional Temperature rise test for ASTA-17865 test	IPH	2633.2101351.0729
18. 2500A Design Verified with ABB breakers	ASTA	18050
19. Additional Temperature rise test for ASTA-18850 test	IPH	3457.2100397.0221
20. Additional Temperature rise test for ASTA-18850 test	IPH	3457.2100397.1032
21. 2500A Design Verified with ABB breakers	ASTA	17543
22. Additional temperature rise test for ASTA-17543 test	IPH	3345.2091254.0982
23. 2500A type tested with LS breakers	ASTA	17010
24. 2500A type tested with GE breakers	ASTA	16150
25. 2500A type tested with MG, ABB, Siemens, Jean Muller breakers	IPH	513.228.6.384
26. 2500A temperature rise test & short circuit test	IPH	170.265.2.230
27. 3200A Design Verified with MG breakers	ASTA	17615
28. Additional temperature rise test for ASTA-17615 test	IPH	3467.2100399.0218
29. 3200A type tested (AI Busbar) with ABB breakers	CPRI	S2060728
30. 3200A Short circuit test (AI Busbar) with ABB breakers	CPRI	S2060729
31. 3200A temperature rise test & short circuit test	ASTA	12798
32. 4000A Design Verified with Schneider breakers	ASTA	17756
33. Additional Temperature rise test for ASTA-17756 Test	IPH	2633.2100584.0506
34. 4000A Design Verified with ABB breakers	ASTA	17542
35. Additional temperature rise test for ASTA-17542 test	IPH	3345.2091253.0999
36. 4000A type tested with Terasaki breakers	IPH	1819.1206.5.668
37. 5000A type tested with ABB & Jean Muller breakers	IPH	1513.832.0.468
38. 5000A temperature rise test & short circuit test	ASTA	12890
39. 6300A Design Verified with ABB breakers	ASTA	17541
40. Additional temperature rise test for ASTA-17541 test	IPH	3345.2091252.1010
41. 6300A type tested with ABB breakers	IPH	1819.1061.3.431
42. 7100A type tested with ABB breakers	IPH	1819.1061.3.434
43. Short circuit test 50kA/3sec for 2×10×100 Cu	ASTA	14902
44. Short circuit test 63kA/1sec for 1×50×10 Cu	TÜV	19300462 001
45. Short circuit test 63kA for Power Cassette, FTM & Flexi Cu	TÜV	19300462 004 19300462 005
46. Short circuit test 100kA/1sec for 4×10×150 Cu	ASTA	15216

For more certifications and latest updates please see www.elsteel.com

TEST PERFORMED	CERTIFICATION AUTHORITY	CERTIFICATE REFERENCE
Techno Module Panels Comply to other Standards		
01. Internal Arc fault test according to IEC 61641 & AS/NZS 3439.1 : 2002	TCA	102601 102380/ 102378
02. Internal Arc fault test according to AS/NZS 3439.1 : 2002	TÜV	19300462 002 19300462 003 19300462 006 19300462 007
03. Cold & Damp Heat tests according to IEC 60068-2-1 & 60068-2-30 respectively	RST	P50-11-0101e
04. Vibrations test according to IEC 68-2-6 & IEC 68-2-36	VIPAC	302649-01
05. Seismic test according IEC 68-3-3	VIPAC	302649-02
06. UL/ cUL Mark for TM Panels and components	UL	E207550:Vol-2
07. Lloyd's Register type approval certificate for marine, offshore and industrial applications of stainless steel enclosure & 19" cabinets	LR	02/70003 (E1)
08. ABS type approval certificate for shipboard and associated marine & offshore installation	ABS	08-SG366750-PDA
09. Russian Maritime Register of Shipping (RS) Type approval certificate for Marine use	RS	10.00001.270
10. Bureau Veritas (BV) Type Approval Certificate for Marine use	BV	22875/A0 BV
11. Det Norske Veritas (DNV) Type Approval Certificate for offshore use	DNV	E-10273
12. Germanischer Lloyd (GL) Type Approval Certificate for offshore use	GL	19479-11 HH

TEST PERFORMED	CERTIFICATION AUTHORITY	CERTIFICATE REFERENCE
Box Enclosures		
01 Certificate of compliance for Painted Steel Boxes and Terminal Boxes comply to UL 50 Type 4, 4X, 12 and CSA 94 Certificate of compliance for Stainless Steel Boxes and Terminal Boxes comply to UL 50 Type 4, 4X, 12, 13 and CSA 94	CSA	227808
02. Degree of Protection Test (IPH) for Stainless Steel Box enclosure Test passed for IP 69K	IPH	1819.1575.7.619
03. Degree of Protection Test (IP Test) for Mild Steel Box enclosure Test passed for IP 65	UL	129169-02/A1
04. Degree of Protection Test (IP Test) for Stainless Steel Box enclosure Test passed for IP 66	DEMKO	93/53 BTh
05. Lloyd's Register Type Approval Certificate for Marine, Offshore and industrial application of Stainless Steel Enclosures & 19" cabinets.	LR	02/70003 (E1)
06. ABS Type Approval Certificate for Shipboard and Associated Marine & Offshore installations.	ABS	08-SG366750-PDA
07. Russian Maritime Register of Shipping Type approval certificate for SS and MS Boxes for marine use.	RS	10.00001.270

For more certifications and latest updates please see www.elsteel.com

MATERIAL SPECIFICATION

Techno Module	
Base Frame	2mm mild steel powder coated in black (RAL 9005)
Corners	Aluminium die casted powder coated in Light grey (RAL 7035) Fine tex.
Corner Bar / Cross Bar	Electro galvanized 2mm powder coated in Light grey (RAL 7035) Fine tex.
Doors / Covers	Mild steel 1.5mm powder coated in Light grey (RAL 7035) Fine tex.
Doors with window	Mild steel 1.5mm powder coated in Light grey (RAL 7035) Fine tex. & 4mm Tempered Tinted glass
Door Stabilisor	Mild steel 20×20×1.5 square pipe powder coated in Light grey (RAL 7035) Fine tex.
Door with cable glands	Mild steel 1.5mm powder coated in Light grey (RAL 7035) Fine tex.
Mounting Plate	Mild steel 2mm powder coated white (RAL 9010) / 2mm Alu-zinc
Separation Plates	Mild steel (2×2, 2×4, 2×6, 4×4, 4×6,) 1 mm painted white (RAL 9010) All other sizes 1.2 mm
Flat Cover	Mild steel 1.5mm painted in Light grey (RAL 7035) Fine tex.
Panel Assembly Kit	Mild steel 3mm zinc plated
Cable Holder	Mild steel 1.5mm painted white (RAL 9010) for up to 600mm and Mild steel 2mm painted white (RAL 9010) for 600mm & above
Lifting Eyes (14380)	Mild steel 3mm powder coated in black (RAL 9005)
Lifting Eyes (14390)	Mild steel 3mm zinc plated
Wall Mounting Brackets	Mild steel 3mm powder coated in Light grey (RAL 7035) Fine tex.
Transport Wheel Holder	Mild steel 3mm powder coated in black (RAL 9005)
Busbar Holder	Self extinguishing fibre material / reinforced PC
Fish Plate	Copper 10mm
H to V connectors	Copper 10mm
Busbar tap off - 21000	Dia 10mm zinc plated
- 21010 & 21020	Copper 5mm
- 21030	Mild steel 3mm zinc plated
Bracket for earth conductor	Mild steel 3mm zinc plated
Copper Spacer	Copper Dia 30
Instant Panel - Casing	Mild steel 1.5mm powder coated in Light grey (RAL 7035) Fine tex.
- Doors	Mild steel 1.5mm powder coated in Light grey (RAL 7035) Fine tex.
- Mounting Plate	Mild steel 2mm powder coated in white (RAL 9010) / Alu-zinc 2mm
Techno Module Light	
- Base frame Light	Mild steel 1.5 mm powder coated in black (RAL 9005)
- Corner bar/ Cross bar Light	Electro galvanized 1mm powder coated in Light grey (RAL 7035) Fine tex.
- Doors / Covers Light	Mild steel 1mm powder coated in Light grey (RAL 7035) Fine tex.
- Instant plate Light	Mild steel 1mm powder coated in Light grey (RAL 7035) Fine tex.
- Gland plate Light	Mild steel 1.5mm powder coated in Light grey (RAL 7035) Fine tex.

REFERENCES

Customer	Product	Country
Olympic Stadium	Main Distribution Panel	Australia
British Aerospace	Main Distribution Panel	Australia
Colt Telecom	Techno Module	Belgium
NATO Headquarters	Techno Module MCC	Belgium
Ministry of Defence	Motor Control Center	Dubai
Giga Gold Refinery	2500A LV Panels	Dubai
Jebel Ali Air Port	Main Distribution	Dubai
Nordbahnhof Berlin	NSHV and GHV	Germany
Alcatel Stuttgart	NSHV and GHV	Germany
National Hospital	4000A Switchboard	Iceland
Eskifjord Ltd	2500A Switchboard	Iceland
Hyundai Motor India Ltd	Techno Module	India
Nokia Mobile Phone Facility Project	Techno Module	India
Toyota Kirloskar Motor Pvt Ltd	PCC Panels - Techno Module	India
Radisson Hotel	Techno Module/ Form 4	Jordan
Amman East Station	Form 4 Motor Control Center D/O	Jordan
Central Bank of Kenya	Main Board/ Sub Boards	Kenya
Commercial Bank of Africa	Main Board/ Sub Boards	Kenya
Multilinx Factory	Distribution Boards	Maldives
SAVANNAH Sugar Estate	Techno Module and MCC	Mauritius
Ulvesund Elektro AS	1600A Main Panels	Norway
Power Plant Mar Kraftverk	Motor Control Center	Norway
Qatar International Stadium	Distribution Panel	Qatar
West Bay Cooling System - Phase 1	Form 4 Panel 7000A	Qatar
SAB Miller Beer Factory	Motor Control Center WWT Plant	Romana
Hydro Tech Engineering	Motor Control Center WWT Plant	Romana
Esso Deepwater Ltd	Generator Control Panel	Singapore
Shang Ri La Hotel	Techno Module	Singapore
Greenpoint Stadium (2010 World Cup)	Techno Module	South Africa
Coca Cola Dar Es Salaam	Techno Module	South Africa
Barcelona Air Port	Form 4 Motor Control Center	Spain
Jerez Air Port	Form 4 Motor Control Center	Spain
Manchester Air Port	Form 4 Motor Control Center	UK
Nokia	Main Switchboard	UK
International Air Port Doha	Techno Module MCC	UAE
Fujairah	Techno Module MCC	UAE
Brodosplit Shipyard	Marine Panel 6300A	Croatia

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