Infrastructure & Cities Sector - Low and Medium Voltage Division

Electrotechnical documents

for
Purchaser

User CAELUS ENERGY

Plant 8DA10 34.5 kV SWITCHGEAR
GENERAL ARRANGEMENT DRAWING

Plant Section =H00

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Date | 11.10.14 | APP: | | | | | | | | |
| | | | | Drawn | VIETING | CER: | | CAELUS ENERGY | Siemens AG | 8DA10 34.5kV SWITCHGEAR | | =HZ00 | A | =H00 |
| | | | | Checked | WITZEL | A.B.: | | NUNA DRILL SITE | | GENERAL ARRANGEMENT DRAWING | | | | +H00 /1 |
| Index | Revision | Date | Name | Appr. | | Orig./Prep.for/Prep.by | | | | COVER SHEET | | 87XXXX | (3) W92210-EXXXX-U001 | Sheet 1- |
| | | | | | | | | | | Cover sheet | | | | 1 Sh. |

OBJECT NUMBER:

| Designation | | | Manufacturer document number<br>Customer document number | Sheet | Sheets | Date | Description | Prepared by |
|---|---|---|---|---|---|---|---|---|
| A | =H00<br>+H00 | /1 | (3) W92210-EXXXX-U001 | 1- | 1 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>COVER SHEET<br>Cover sheet | EM MS O GIS SWF PR OP SEN FFM |
| A | =H00<br>+H00 | A1 | (3) W92210-EXXXX-L002 | 1+ | 2 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>List of documents<br>List of documents | EM MS O GIS SWF PR OP SEN FFM |
| A | =H00<br>+H00 | A2 | (3) W92210-EXXXX-L002 | 2- | 2 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>List of documents<br>List of documents | EM MS O GIS SWF PR OP SEN FFM |
| B | =H00<br>+H00 | B1 | (3) W92210-EXXXX-P003 | 1+ | 9 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>ONE LINE VIEW<br>Circuit diagram | EM MS O GIS SWF PR OP SEN FFM |
| B | =H00<br>+H00 | B2 | (3) W92210-EXXXX-P003 | 2+ | 9 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>FRONT VIEW<br>Circuit diagram | EM MS O GIS SWF PR OP SEN FFM |
| B | =H00<br>+H00 | B3 | (3) W92210-EXXXX-P003 | 3+ | 9 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>PLAN VIEW<br>Circuit diagram | EM MS O GIS SWF PR OP SEN FFM |
| B | =H00<br>+H00 | B4 | (3) W92210-EXXXX-P003 | 4+ | 9 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>SECTION VIEW<br>Circuit diagram | EM MS O GIS SWF PR OP SEN FFM |
| B | =H00<br>+H00 | B5 | (3) W92210-EXXXX-P003 | 5+ | 9 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>GAS VIEW<br>Circuit diagram | EM MS O GIS SWF PR OP SEN FFM |
| B | =H00<br>+H00 | B6 | (3) W92210-EXXXX-P003 | 6+ | 9 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>PANEL WEIGHTS<br>Circuit diagram | EM MS O GIS SWF PR OP SEN FFM |
| B | =H00<br>+H00 | B7 | (3) W92210-EXXXX-P003 | 7+ | 9 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>GENERAL INFORMATION<br>Circuit diagram | EM MS O GIS SWF PR OP SEN FFM |
| B | =H00<br>+H00 | B8 | (3) W92210-EXXXX-P003 | 8+ | 9 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>GENERAL INFORMATION<br>Circuit diagram | EM MS O GIS SWF PR OP SEN FFM |
| B | =H00<br>+H00 | B9 | (3) W92210-EXXXX-P003 | 9- | 9 | 11.10.14 | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>GENERAL INFORMATION<br>Circuit diagram | EM MS O GIS SWF PR OP SEN FFM |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Date | 11.10.14 | APP: | | | | | =HZ00 | A | =H00 |
| | | | | Drawn | VIETING | CER: | CAELUS ENERGY | Siemens AG | 8DA10 34.5kV SWITCHGEAR | | | | +H00 |
| | | | | Appr. | WITZEL | A.B.: | NUNA DRILL SITE | | GENERAL ARRANGEMENT DRAWING | | | | |
| Revision | Revision | Date | Name | Standard | | | Orig./Prep.for/Prep.by | | List of documents | | 87XXXX | (3) W92210-EXXXX-L002 | |
| | | | | | | | | | List of documents | | | | |

| | | | | |
|---|---|---|---|---|
| | | A1 | Sheet 1- | |
| | | | 1 Sh. | |

ELCAD-Version 7.3.2.SP3
Last edit: 17.11.14
Archive: =H00 / B / B / 1

Project: I:\ELCAD_7\ANSI\87XXXX_CAELUS_ENERGY.pro
Symbol library 1: ANSI_7
Symbol library 2: PTD_MD_CoC_E
Symbol library 3: ANSI_7
Symbol library 4: ANSI721

Template file a: TVMS_E
Template file b: Iec1
Template file c: FB_EN.elr, 04-11-24
Template file d: Iec
Template file e: Iec

| =H01<br>+H01<br>=HZ01 | =H02<br>+H02<br>=HZ02 | =H03<br>+H03<br>=HZ02 | =H04<br>+H04<br>=HZ02 | =H05<br>+H05<br>=HZ03 | =H06<br>+H06<br>=HZ02 |
|---|---|---|---|---|---|
| -T15 3 L1,L2,L3 34.5kV/120V √3 / √3 WXY / CL. 0.6 | | | | | |
| -Q61 | | | | | |
| | | | | -F5 1x S2 1250A | |
| -Q1 -Y1 -Y5 | -Q1 -Y1 -Y5 | -Q1 -Y1 -Y5 | -Q1 -Y1 -Y5 | -Q1 -Y1 -Y5 | -Q1 -Y1 -Y5 |
| -Q0 52 1250 A | -Q0 52 1250 A | -Q0 52 1250 A | -Q0 52 1250 A | -Q0 52 1250 A | -Q0 52 1250 A |
| H1 L1,L2,L3<br>-T1 3 1200 MR A/5A/5A<br>C200<br>H2 C200 | H1 L1,L2,L3<br>-T1 3 1200 MR A/5A/5A<br>C200<br>H2 C200 | H1 L1,L2,L3<br>-T1 3 1200 MR A/5A/5A<br>C200<br>H2 C200 | H1 L1,L2,L3<br>-T1 3 1200 MR A/5A/5A<br>C200<br>H2 C200 | H1 L1,L2,L3<br>-T1 3 1200 MR A/5A/5A<br>C200<br>H2 C200 | H1 L1,L2,L3<br>-T1 3 1200 MR A/5A/5A<br>C200<br>H2 C200 |
| CAPDIS S2+<br>-A51 | LRM<br>-A51 | LRM<br>-A51 | LRM<br>-A51 | LRM<br>-A51 | LRM<br>-A51 |
| 1x S3 | 1x S2 | 1x S2 | 1x S2 | 1x S2 | 1x S2 |
| -T91 1 L1,L2,L3 50A/5A C5 | -T91 1 L1,L2,L3 50A/5A C5 | -T91 1 L1,L2,L3 50A/5A C5 | -T91 1 L1,L2,L3 50A/5A C5 | -T91 1 L1,L2,L3 50A/5A C5 | -T91 1 L1,L2,L3 50A/5A C5 |
| INCOMER FROM OTP | FEEDER 52-F1 | FEEDER 52-F2 | FEEDER 52-F3 | FEEDER 52-F4 | FEEDER 52-F5 |



OBJECT NUMBER:

| SYSTEM/RATED FREQUENCY | OPERATING VOLTAGE | RATED VOLTAGE | RATED SHORT-TIME WITHST. CURR. | RATED NORMAL CURRENT | AUXILLARY VOLTAGE, CONTROL/PROTECTION | AMBIENT AIR TEMP./NORMAL CURRENT |
|---|---|---|---|---|---|---|
| 3~60Hz | 34.5kV | 38.0kV | 25.0kA(3s) | 1250A | 125V DC | 40°C/1200A |

**SIEMENS**

| REVISION | DESCRIPTION | DATE | INIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

FACTORY NO: 87XXXX

CUSTOMER: CAELUS ENERGY

CONTRACTOR:

PROJECT: NUNA DRILL SITE
CAELUS ENERGY

DOC NAME: 8DA10 34.5kV SWITCHGEAR
GENERAL ARRANGEMENT DRAWING
ONE LINE VIEW

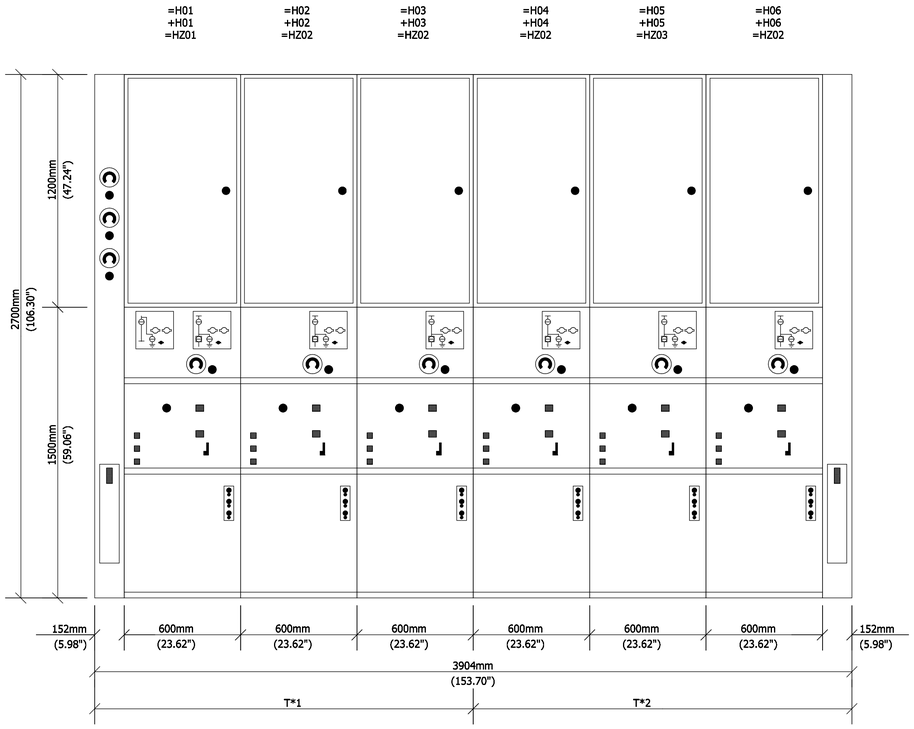
DWG. NO. (3) W92210-EXXXX-P003

PANEL: =H00+H00 | TYPICAL: =HZ00 | PAGE: B/B1

| APPROVED | CHECKED | DRAWN | DATE | SHEET | REVISION |
|---|---|---|---|---|---|
| | WITZEL | VIETING | 11.10.14 | 1+ | |

APP: | CER: | A.B.:

# FRONT VIEW




ELCAD-Version 7.3.2.SP3
Last used: 17.11.14

Archive: =H00 / B / B / 2

Translate file A: TXNS_E
Translate file B: Ver1
Translate file C: C:_PB_EN.xlr, 04-11-24
Translate file D:
Translate file E:

Symbol library 1: I:\ELCAD_7\ANSI\87XXXX_CAELUS_ENERGY.pro
Project: 87XXXX
Symbol library 2: PTD_MD_DOC_E
Symbol library 3: ANSI7XX
Symbol library 4:
Symbol library 5:



OBJECT NUMBER:

LOAD DATA AND
MINIMUM DISTANCES

| | | |
|---|---|---|
| 1) | PERMANENT LOADS | |
| Fv | VERTICAL SINGLE LOAD | 8.6kN |
| 2) | NOT PERMANENT LOADS | |
| pe | LIVE LOAD | 10.9 kN/m² |
| 5) | MINIMUM DISTANCES | |
| | FRONT OPERATING AISLE | 800mm*) |
| | WALL CLEARANCE LEFT | ≥500mm**) |
| | WALL CLEARANCE RIGHT | ≥100mm**) |
| | HEIGHT OF CEILING | ≥2900mm |

The location and detail diagrams have symbolic character and do not show the actual scope of supply.

**SIEMENS**

| REVISION | DESCRIPTION | DATE | INIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

FACTORY NO: 87XXXX

CUSTOMER: CAELUS ENERGY

CONTRACTOR:

PROJECT: NUNA DRILL SITE
CAELUS ENERGY

DOC NAME: 8DA10 34.5kV SWITCHGEAR
GENERAL ARRANGEMENT DRAWING
FRONT VIEW

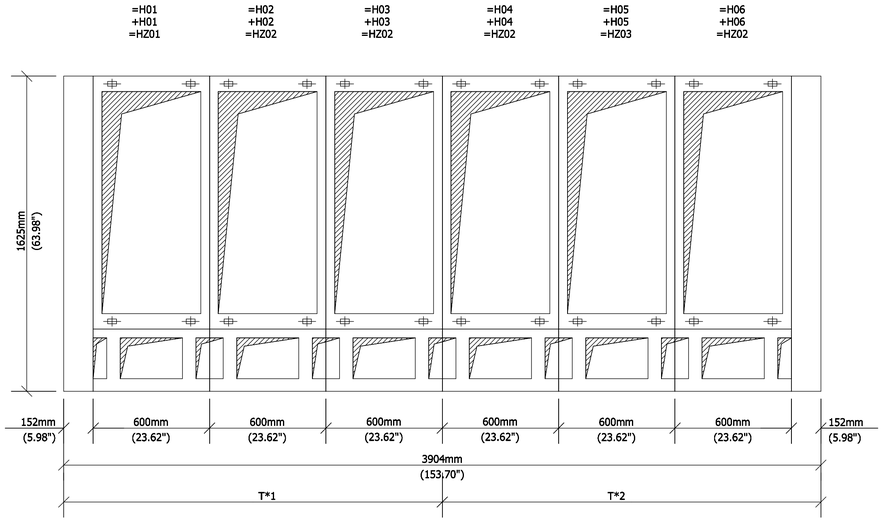
DWG. NO. (3) W92210-EXXXX-P003

PANEL: =H00+H00 | TYPICAL: =HZ00 | PAGE: B/B2

| APPROVED | CHECKED | DRAWN | DATE | SHEET | REVISION |
|---|---|---|---|---|---|
| | WITZEL | VIETING | 11.10.14 | 2+ | |

APP: | CER: | A.B.:

# PLAN VIEW






LOAD DATA AND
MINIMUM DISTANCES

| | | |
|---|---|---|
| 1) | PERMANENT LOADS | |
| Fv | VERTICAL SINGLE LOAD | 8.6kN |
| 2) | NOT PERMANENT LOADS | |
| pe | LIVE LOAD | 10.9 kN/m² |
| 5) | MINIMUM DISTANCES | |
| | FRONT OPERATING AISLE | 800mm*) |
| | WALL CLEARANCE LEFT | ≥500mm**) |
| | WALL CLEARANCE RIGHT | ≥100mm**) |
| | HEIGHT OF CEILING | ≥2900mm |

FOR INFORMATION ONLY, NOT TO BE USED FOR CONSTRUCTION. FURTHER CONSTRUCTION DATA CAN BE FOUND IN THE RELATED OPERATING AND INSTRUCTION MANUAL

*) ACCORDING TO NATIONAL REGULATIONS

**) IN CASE OF SWITCHABLE DEVICES AT BUSBAR A MINIMUM DISTANCE OF 800mm (ALTERNATIVELY LEFT OR RIGHT SIDE) IS REQUIRED.

T*) TRANSPORTATION UNIT

FOR FITTINGS AT THE BUSBAR OBSERVE ADDITIONAL HEIGHT OF PANEL

1) THE FLOOR PENETRATION FOR THE HIGH-VOLTAGE TERMINATIONS SHOULD TAKE THE FORM OF A CONTINUOUS SLOT FOR EACH ROW OF PANELS. BEAM BENEATH THE PANEL JUNCTION IS POSSIBLE.

2) FLOOR PENETRATION REQUIRED IF THERE IS A BEAM NEBEATH THE PANEL JUNCTION.

TOLERANCES:
FALL (MAX.) 1mm/1m, 2mm OVER THE TOTAL LENGTH,
FLATNESS 1mm WITHIN 1m MEASURED LENGTH. ADJUST TOLERANCES WITH SHMS.



OBJECT NUMBER:

**SIEMENS**

| REVISION | DESCRIPTION | DATE | INIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

FACTORY NO: 87XXXX

CUSTOMER: CAELUS ENERGY

CONTRACTOR:

PROJECT: NUNA DRILL SITE
CAELUS ENERGY

DOC NAME: 8DA10 34.5kV SWITCHGEAR
GENERAL ARRANGEMENT DRAWING
PLAN VIEW

DWG. NO. (3) W92210-EXXXX-P003

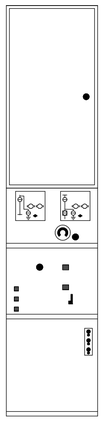
PANEL: =H00+H00 | TYPICAL: =HZ00 | PAGE: B/B3

| APPROVED | CHECKED | DRAWN | DATE | SHEET | REVISION |
|---|---|---|---|---|---|
| | WITZEL | VIETING | 11.10.14 | 3+ | |

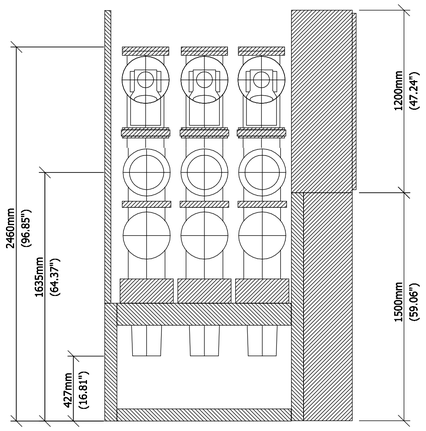
APP: | CER: | A.B.:

=HZ01

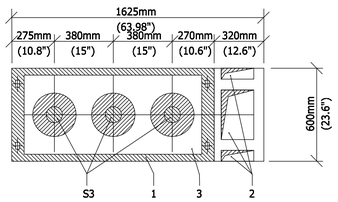
FRONT VIEW



SIDE VIEW

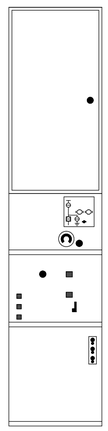



BOTTOM VIEW

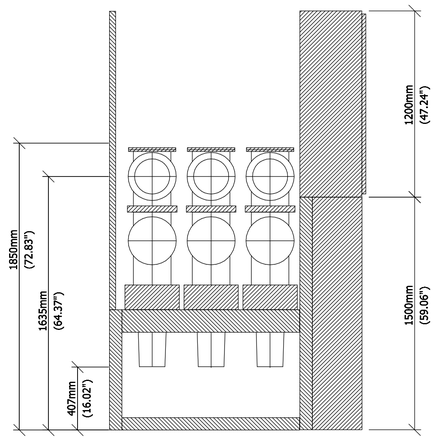



=HZ02

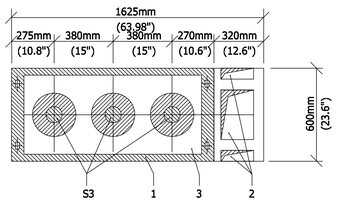
FRONT VIEW



SIDE VIEW




BOTTOM VIEW

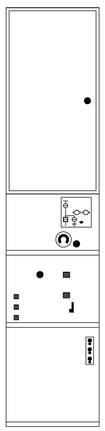



Top view / Inscription:

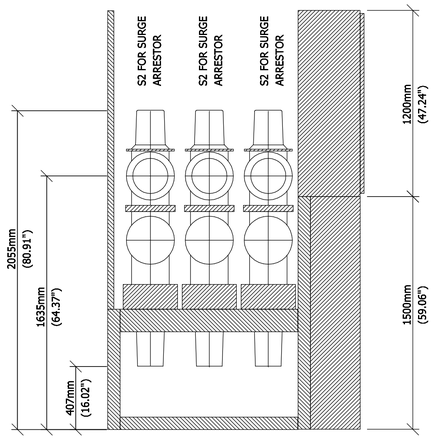
1. Base frame
2. Area for floor openings for control cables
3. Floor opening (e.g. for high-voltage cable)

=HZ03

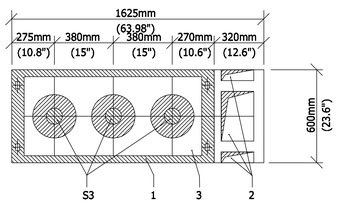
FRONT VIEW



SIDE VIEW




BOTTOM VIEW




**SIEMENS**

| REVISION | DESCRIPTION | DATE | INIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| | |
|---|---|
| FACTORY NO: | 87XXXX |
| CUSTOMER | CAELUS ENERGY |
| CONTRACTOR | |
| PROJECT | NUNA DRILL SITE<br>CAELUS ENERGY |
| DOC NAME | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>SECTION VIEW |
| DWG. NO. | (3) W92210-EXXXX-P003 |

| PANEL: =H00+H00 | TYPICAL: =HZ00 | PAGE: B/B4 |
|---|---|---|

| APPROVED | CHECKED | DRAWN | DATE | SHEET | REVISION |
|---|---|---|---|---|---|
| | WITZEL | VIETING | 11.10.14 | 4+ | |

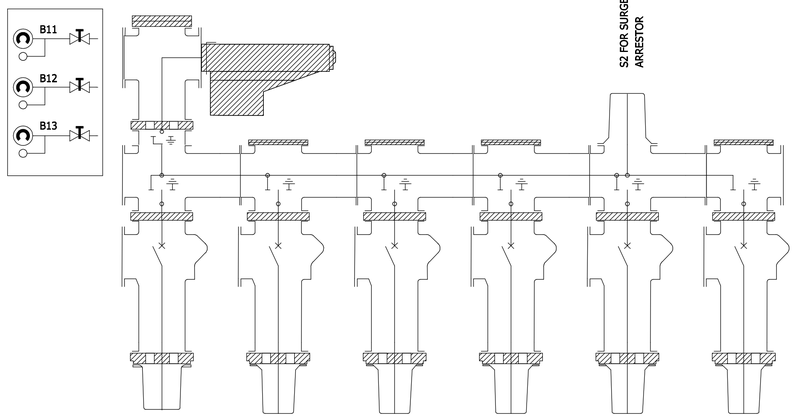
| APP: | | CER: | | A.B.: | | |
|---|---|---|---|---|---|---|

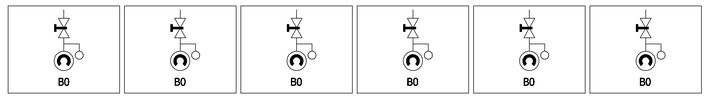


OBJECT NUMBER:

# GAS VIEW

=H01 +H01 =HZ01 | =H02 +H02 =HZ02 | =H03 +H03 =HZ02 | =H04 +H04 =HZ02 | =H05 +H05 =HZ03 | =H06 +H06 =HZ02




Legend:

- Gastight bushing
- Gaspermeable bushing
- Shut off valve
- Pressure gauge indicator with filling valve

Indication of the pressure indicators for the gas chambers

| (within panel) | (within end wall) |
|---|---|
| B0 Circuit breaker phase L1, L2, L3 | B11 busbar 1 phase L1 |
| | B12 busbar 1 phase L2 |
| | B13 busbar 1 phase L3 |



OBJECT NUMBER:

**SIEMENS**

| REVISION | DESCRIPTION | DATE | INIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| | |
|---|---|
| FACTORY NO: | 87XXXX |
| CUSTOMER | CAELUS ENERGY |
| CONTRACTOR | |
| PROJECT | NUNA DRILL SITE<br>CAELUS ENERGY |
| DOC NAME | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>GAS VIEW |
| DWG. NO. | (3) W92210-EXXXX-P003 |

| PANEL: =H00+H00 | TYPICAL: =HZ00 | PAGE: B/B5 |
|---|---|---|

| APPROVED | CHECKED | DRAWN | DATE | SHEET | REVISION |
|---|---|---|---|---|---|
| | WITZEL | VIETING | 11.10.14 | 5+ | |

APP: | CER: | A.B.:

# PANEL WEIGHTS

| Line No. | Row | Position | Typ.-no. | Typical name | Weight |
|---|---|---|---|---|---|
| 10 | A | +H01 | =HZ01 | Circuit-breaker panel 1250 A | 1107 kg |
| 20 | A | +H02 | =HZ02 | Circuit-breaker panel 1250 A | 762 kg |
| 30 | A | +H03 | =HZ02 | Circuit-breaker panel 1250 A | 762 kg |
| 40 | A | +H04 | =HZ02 | Circuit-breaker panel 1250 A | 762 kg |
| 50 | A | +H05 | =HZ03 | Circuit-breaker panel 1250 A | 954 kg |
| 60 | A | +H06 | =HZ02 | Circuit-breaker panel 1250 A | 762 kg |
| | | | | | |
| | | | | Total weight: | 5109 kg |
| | | | | | |
| | | | | Average weight per panel (without packing) | 852 kg |
| | | | | | |
| | | | | Packing: | |
| | | | | Seafreight packing "IPPC" for shipping in Open-Top-Container (treated wooden box with heat-sealed plastic foil, with desiccants, storage up to 6 month). Packing not stackable per panel | 200 kg |
| | | | | | |
| | | | | Average weight per panel (with packing) | 1052 kg |



OBJECT NUMBER:

**SIEMENS**

| REVISION | DESCRIPTION | DATE | INIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

FACTORY NO: 87XXXX

CUSTOMER: CAELUS ENERGY

CONTRACTOR:

PROJECT: NUNA DRILL SITE
CAELUS ENERGY

DOC NAME: 8DA10 34.5kV SWITCHGEAR
GENERAL ARRANGEMENT DRAWING
PANEL WEIGHTS

DWG. NO. (3) W92210-EXXXX-P003

| PANEL: =H00+H00 | TYPICAL: =HZ00 | PAGE: B/B6 |
|---|---|---|

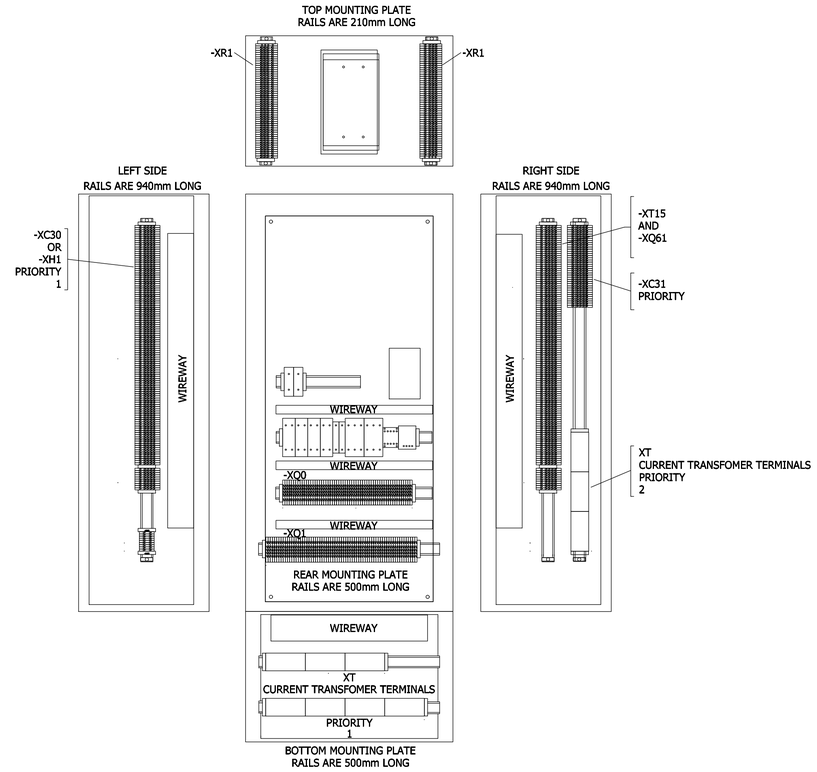
| APPROVED | CHECKED | DRAWN | DATE | SHEET | REVISION |
|---|---|---|---|---|---|
| | WITZEL | VIETING | 11.10.14 | 6+ | |

APP: | CER: | A.B.:

| LEGEND HV COMPARTMENT | SYMBOL |
|---|---|
| CIRCUIT BREAKER 52 | |
| 3 POSITION SWITCH<br>MOTOR DRIVE | |
| 3 POSITION SWITCH | |
| 3 POSITION SWITCH | |
| FUSE | |
| CURRENT TRANSFORMER<br>ZERO SEQUENCE TRANSFORMER | |
| CABLE PLUG | |
| CAPACITIVE VOLTAGE INDICATION | |

| LEGEND LV COMPARTMENT | | SYMBOL |
|---|---|---|
| BINARY INPUT | | |
| NORMALY OPEN CONTACT<br>(NO) | | |
| NORMALY CLOSED CONTACT<br>(NC) | | |
| CHANGE OVER CONTACT | | |
| 3 POSITION SWITCH<br>ISOLATOR SWITCH<br>OFF | ISOLATOR SWITCH IS<br>DISCONNECTED<br>OPEN | |
| 3 POSITION SWITCH<br>ISOLATOR SWITCH<br>ON | ISOLATOR SWITCH IS<br>CONNECTED<br>CLOSED | |
| 3 POSITION SWITCH<br>GROUNDING SWITCH<br>OFF | GROUNDING SWITCH IS<br>NOT GROUNDED<br>OPEN | |
| 3 POSITION SWITCH<br>GROUNDING SWITCH<br>ON | GROUNDING SWITCH IS<br>GROUNDED<br>CLOSED | |
| AUXILIARY RELAY | | |
| COIL | | |
| MINIATURE CIRCUIT BREAKER | | |
| LAMP OR LIGHT<br>WITH RESISTOR | | |
| FUSE DISCONNECTOR | | |
| RESISTOR | | |
| DEVICE POWER SUPPLY | | |
| DEVICE CONNECTION | | |
| UNIT TERMINAL CONNECTION<br>INTER CONNECT TERMINAL CONNECTION | | |
| CUSTOMER TERMINAL CONNECTION | | |
| DEVICE PLUG CONNECTION | | |
| CURRENT TRANSFORMER | | |
| VOLTAGE TRANSFORMER | | |

# LV COMP. 1200mm




LEGEND FOR CIRCUIT BREAKER (Q0)

| | |
|---|---|
| K1 | ANTI-PUMPING RELAY |
| M | SPRING CHARGING MOTOR |
| S1 | CIRCUIT BREAKER AUXILIARY CONTACTS |
| S3 | LIMIT SWITCH, OPEN WHEN CB SPRING IS CHARGED |
| S6 | CIRCUIT BREAKER TRIP SIGNAL (IMPULSE) |
| S7 | BLOCKS OF CB TRIPPING SIGNAL DURING MANUEL OPEN COMMAND |
| S13 | BLOCKS OF CB TRIPPING WHEN 3-POS SW OPERATED MANUALLY |
| S16 | CB LOCKED CLOSED, WHEN LEVER LIFTED |
| S21/22 | LIMIT SWITCH, OPEN WHEN CB SPRING IS CHARGED |
| S41 | LIMIT SWITCH, CLOSED WHEN CB SPRING IS CHARGED |
| S42 | LIMIT SWITCH, OPEN WHEN CB SPRING IS CHARGED |
| V1-V4 | VARISTOR |
| S10/11 | LIMIT SWITCH, CUTS-OFF POWER TO MOTOR WHEN MECHANICAL CLOSE IS PRESSED |
| Y1/2 | TRIPPING COIL |
| Y9 | CLOSING COIL |
| Y16 | INTERLOCKING COIL, CB DRIVE PROHIBITED |

LEGEND FOR MANUAL DISCONNECTOR & GROUND SWITCH, (Q1)

| | |
|---|---|
| S1 | DISCONNECTOR AUXILIARY CONTACTS |
| S1 | GROUNDING SWITCH AUXILIARY CONTACTS |
| S25 | OPENS WHEN SWITCH KEY INSERTED & TURNED (INDICATES MANUAL OPERATION OF DISCONNECTOR OR GRD SWITCH) |
| Y1 | ELECTROMAGNETIC INTERLOCK OF THE DISCONNECTOR |
| Y5 | ELECTROMAGNETIC INTERLOCK OF THE GRD SWITCH |
| BO | MANOMETER FOR CB / CABLE HOUSING |



**SIEMENS**

| REVISION | DESCRIPTION | DATE | INIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

FACTORY NO: 87XXXX

CUSTOMER: CAELUS ENERGY

CONTRACTOR:

PROJECT: NUNA DRILL SITE
CAELUS ENERGY

DOC NAME: 8DA10 34.5kV SWITCHGEAR
GENERAL ARRANGEMENT DRAWING
GENERAL INFORMATION

DWG. NO. (3) W92210-EXXXX-P003

PANEL: =H00+H00 | TYPICAL: =HZ00 | PAGE: B/B7

| APPROVED | CHECKED | DRAWN | DATE | SHEET | REVISION |
|---|---|---|---|---|---|
| | WITZEL | VIETING | 11.10.14 | 7+ | |

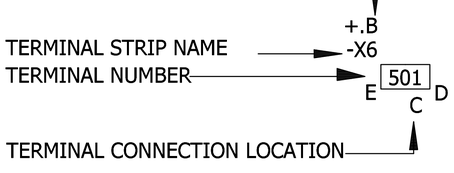
APP: | CER: | A.B.:

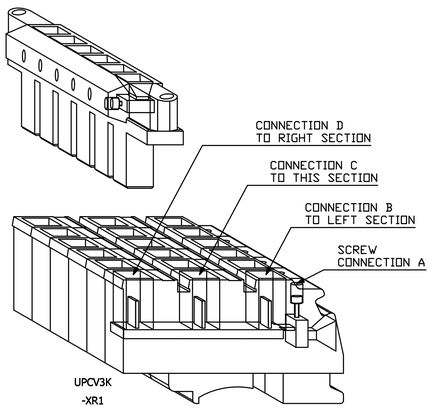
LOCATION WITHIN COMPARTMENT

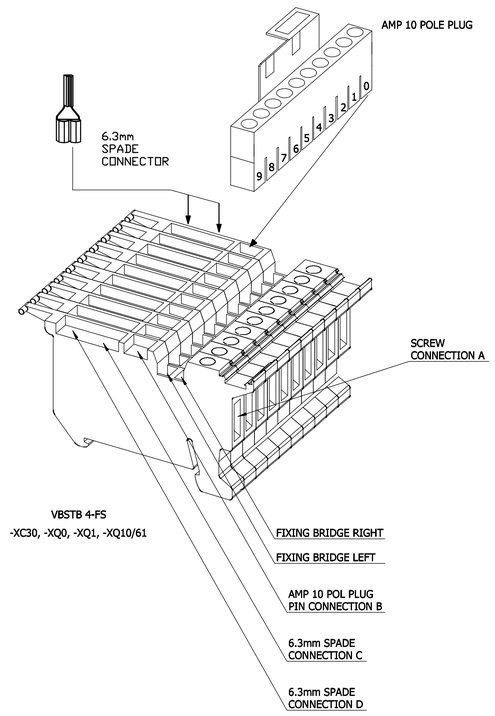
TERMINAL STRIP NAME

TERMINAL NUMBER

TERMINAL CONNECTION LOCATION




Page numbering.
The pages of the documentation
For each section are numbered
according to the following
structure:

A A List of Documents
S M Schematic Diagram
S S Three Line Diagram
S Z Device detail drawings
V / Terminals

Cross references.
Detail of each device used
is given in the Z pages.
A cross reference is provided
to the page where a connection
point is used.
For example /M1.3 means
on schematic diagram page M1
in column 3.

Designation of electrical items
Each terminal connection is uniquely identified by this code

The complete designation is made up of blocks
identified by prefix signs.
= Plant
+ Location
- Kind/Number/Function
: Terminal

The Plant designation block has
the prefix "="
This also serves to identify the section and the circuit diagram
of each section.
This appears in the lower right corner of the title block
on each page.
For example =H02

The Location designation block
has the prefix "+"
This is generally the same as the plant code.
For example +H02

The fine Location code
has the prefix "+."
+.T Door
+.B Device mounting plate
+.F Frame (switchgear chassis)
+.D 3 position switch
+.L Circuit Breaker

The Kind/Number/Function
Terminal designation block has the prefix ":"
designation block has the prefix "-"
Kind
A Assemblies (multiple function)
F Protection
H Signalling devices
K Relays
Q Switching devices (power circuit)
X Terminals
S Switches

Number
Each device has a number
Between 1 and 3 digits
Function
In this case, Phase identifier
Examples
–K10 (relay 10)
–L1C (CT 1 in phase C)

| DRAWING STATUS | | |
|---|---|---|
| (PRE:) PRELIMINARY | : | CONCEPTUAL LAYOUT DO NOT USE FOR CONSTRUCTION |
| (APP:) APPROVAL | : | DO NOT USE FOR CONSTRUCTION |
| (CER:) CERTIFIED | : | USE FOR CONSTRUCTION |
| (A.B.:) AS BUILT | : | JOB AS FACTORY BUILT |
| (A.I.:) AS INSTALLED | : | JOB AS INSTALLED ON SITE |

GENERAL INFORMATION NOTES

1 THE RATED MAX VOLTAGE OF THE SWITCHGEAR IS 38.0kV
2 THE OPERATING VOLTAGE OF THE SWITCHGEAR IS 34.5kV
3 THE OPERATING FREQUENCY OF THE SWITCHGEAR IS 3~60Hz
4 THE SWITCHGEAR IS DESIGNED FOR A 3 PHASE, 3 WIRE SYSTEM
5 STANDARD A-B-C PHASE ROTATION USE A-B-C PHASE DESIGNATIONS
6 RATED SHORT-TIME WITHSTAND CURRENT IS 25.0kA(3s)
7 MAIN BUS IS RATED FOR 1250A
8 PAINT IS IEC STANDARD LIGHT - BASIC SN700
9 SIZE OF ALL CONTROL WIRING IS # AWG 14 GAUGE UNLESS OTHERWISE SPECIFIED
10 SIZE OF ALL CURRENT CIRCUIT WIRING IS # AWG 12 GAUGE UNLESS OTHERWISE SPECIFIED
11 BREAKER WITH DC SUPPLY 125V DC
12 FASTON TERMINALS FOR CONTROL CIRCUITS
13 RING TONGUE TERMINALS FOR CT CIRCUITS
14 GENERAL INTERNAL USE TB ARE VBSTB 4-FS, 300V, 20A, FOR FASTON & PLUG CONNECTORS
15 INTERWIRING TB ARE UPCV3K, 300V, 20A, MODULAR TYPE USING PLUG CONNECTORS
16 CUSTOMER USE TB ARE THE SAME AS INTERNAL/INTERWIRING TB
17 CT SHORT CIRCUIT TB ARE MARATHON 1506/1504SC USING RING TONGUE TERMINALS
18 WIRE OUT ALL CT TAPS TO SCTB
19 TERMINAL BLOCK MARKING STRIPS TYPED WITH TERMINALS NUMBERS (1,2,3ETC)
20 NON-PVC TUBE TYPE WIRE MARKERS ARE PROVIDED FOR ALL WIRING-STANDARD
21 WIRE MARKERS TYPED WITH WIRE SOURCE AND DESTINATION
22 BREAKER CONTROL PWR DISC IS 2P 6A 125V DC MCB
23 AC CONTROL POWER IS 120V AC & SUPPLIED BY CUSTOMER
24 CONTROL POWER IS 125V DC & SUPPLIED BY CUSTOMER
25 EXTERNAL CONTROL POWER ENTERS SECTION 2
26 WIRE ALL AVAILABLE CONTACTS IF POSSIBLE AND SPACE PERMITS TO CUSTOMER TERMINAL STRIP
27 LV COMPARTMENT NPS MOUNTED BY SELF-TAPPING STAINLESS STELL SCREWS
28 LOW VOLTAGE COMPARTMENT IS 1200 mm HIGH
29 LOW VOLTAGE COMPARTMENT WILL SHIP INSTALLED WITH PRIMARY PART
30 LV COMP DOOR LATCH IS EMKA T-HANDLE
31 ENCLOSURE TYPE IS IP3XD
32 UL LISTING LABELS ARE REQUIRED
33 NAMEPLATE MATERIAL TO BE LAMICOID-BLACK WITH WHITE CORE
34 CELL NAMEPLATES WITH 0.75" CHARACTERS
35 DEVICE NAMEPLATES WITH 0.125" CHARACTERS
36 NAMEPLATES FOR ALL CELLS
37 NAMEPLATES FOR ALL PANEL DEVICES

**SIEMENS**

| REVISION | DESCRIPTION | DATE | INIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

FACTORY NO: 87XXXX

CUSTOMER: CAELUS ENERGY

CONTRACTOR:

PROJECT: NUNA DRILL SITE
CAELUS ENERGY

DOC NAME: 8DA10 34.5kV SWITCHGEAR
GENERAL ARRANGEMENT DRAWING
GENERAL INFORMATION

DWG. NO. (3) W92210-EXXXX-P003

PANEL: =H00+H00 | TYPICAL: =HZ00 | PAGE: B/B8

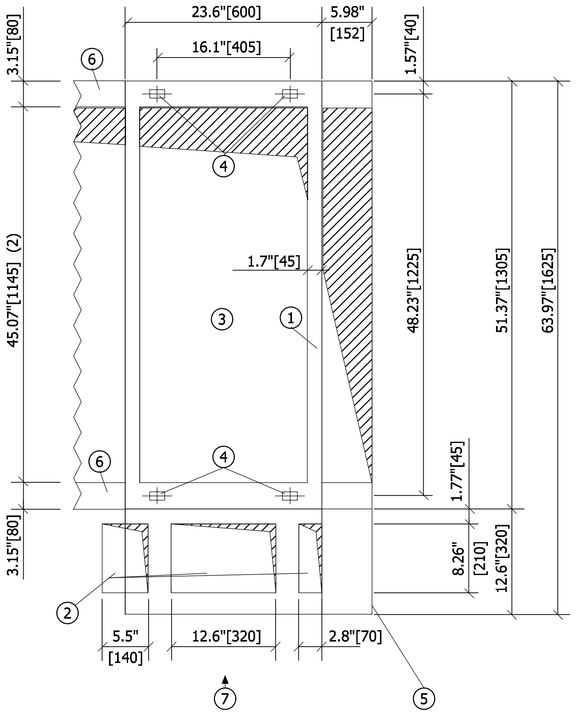
| APPROVED | CHECKED | DRAWN | DATE | SHEET | REVISION |
|---|---|---|---|---|---|
| | WITZEL | VIETING | 11.10.14 | 8+ | |

APP: | CER: | A.B.:



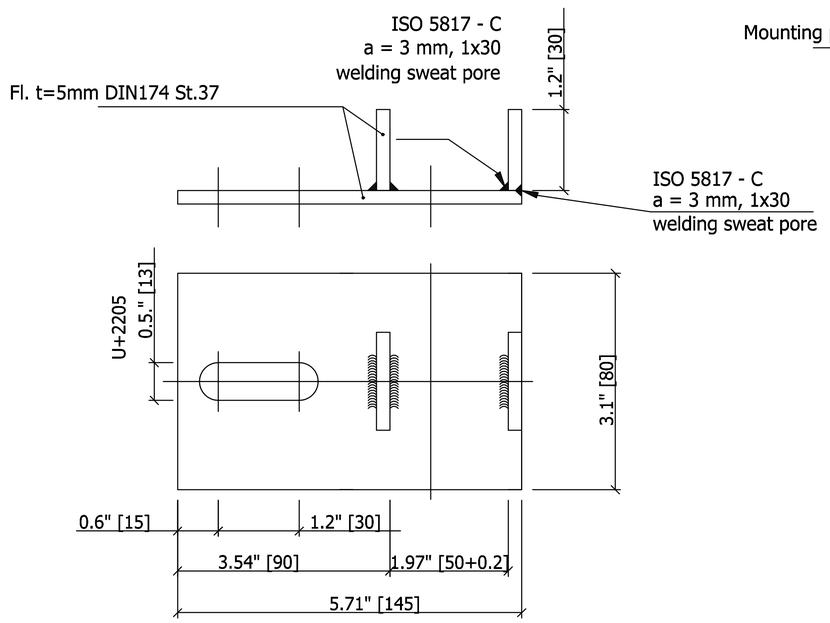
OBJECT NUMBER:

Distance for Mounting plate < = 600mm



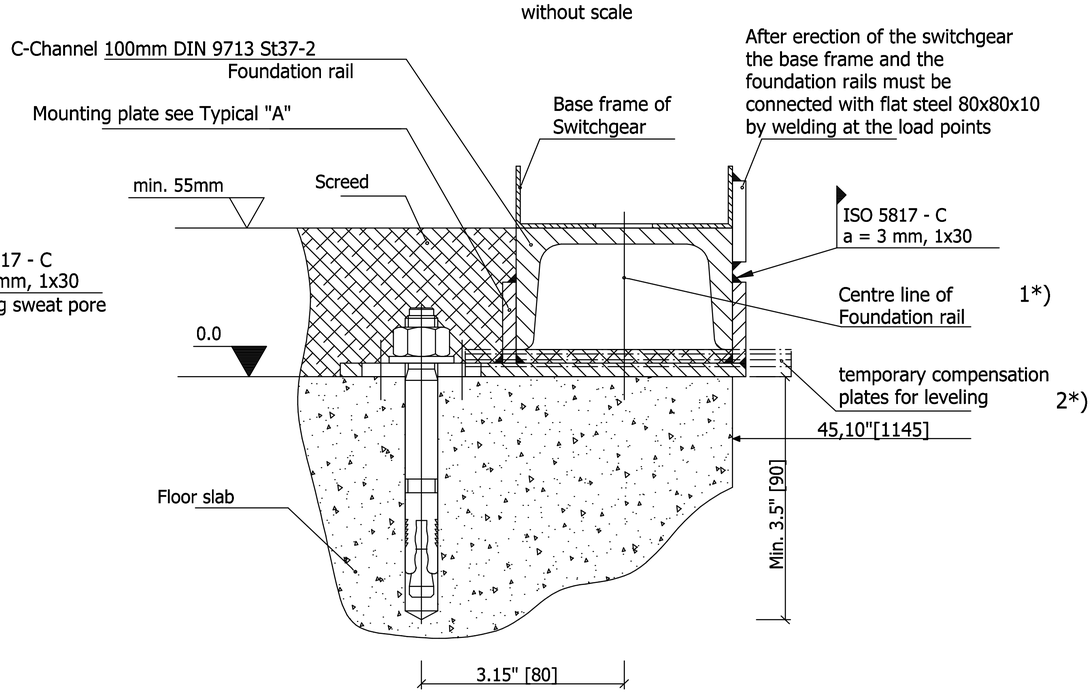

Typical "A"

Mounting plate
without scale
Distance < = 600mm




Section "A"

without scale




PROPOSAL

MUST BE RECHECKED BY CIVIL ENGINEERS

(BY OTHERS)

1. BASE FRAME
2. AREA FOR FLOOR OPENINGS AND CONTROL CABLES
3. FLOOR OPENINGS FOR HIGH-VOLTAGE CABLES
4. STANDARD DESIGN:
   -FIXING HOLES (26x45] FOR M10
   -INTERCONNECT TWO POINTS DIAGONALLY
   ASEISMIC DESIGN:
   -FIXING HOLES (12x40] FOR M10
   -INTERCONNECT ALL FOUR POINTS
5. SWITCHGEAR END WALL
6. FOUNDATION RAILS
7. OPERATING SIDE OF THE PANEL

(2) FOR LARG PANEL CONNECTION HOUSINGS (VERSION 7 AND 8)
THE DIMENSION MUST NO BE SMALLER THAN 45.07"[1145].

NOTES:
SECONDARY CABLES TO ENTER SWITCHGEAR FROM THE BOTTOM

THE FLOOR PENETRATION FOR THE HIGH VOLTAGE TERMINATIONS SHOULD TAKE THE FORM OF A CONTINOUS SLOT FOR EACH ROW OF PANELS. BEAMS BENEATH THE PANEL JUNCTION IS POSSIBLE.

△2 FLOOR PENETRATION REQUIRED IF THERE IS A BEAM BENEATH THE PANEL JUNCTION (MAY NOT BE REQUIRED).

▨ FLOOR OPENING

△1

MINIMUM DISTANCES

| | |
|---|---|
| CONTROL ASILE | 31.5IN. |
| MINIMUM LATERAL WALL DISTANCE | 4 IN. |
| LATERAL WALL DISTANCE | 20 IN. |
| CEILING HEIGHT | 110.25 IN. |
| WALL STANDING ARRANGEMENT: | |
| MINIMUM WALL DISTANCE REAR | 4 IN. |
| FREE STANDING ARRANGEMENT: | |
| MINIMUM WALL DISTANCE REAR | 34.5 IN. |

TRANSPORT WEIGHTS

1 Panel : 1653 lb
2 Panels: 3306 lb
3 Panels: 4960 lb
4 Panels: 6613 lb

TOLERANCES:

FALL (MAX.) 1MM/1M LENGTH, 2MM OVER THE TOTAL LENGTH;
FLATNESS 1MM WITHIN 1M MEASURED LENGTH.
ADJUST TOLERANCES WITH SHIMS.

LOAD DATA

| | |
|---|---|
| VERTICAL SINGLE LOAD | : 8.6kN |
| LIVELOAD | :10.9kN/m² |

NOTE:

- THE METAL FIXING RAILS SHOULD BE LEVEL AND FLAT IN ACCORDANCE WITH THE TOLERANCE DOWN IN DIN 43661, THAT IS, 1MM PER M, BUT A MAXIMUM OF 2MM OVER THE TOTAL SWITCHGEAR LENGTH.
- WHERE FOUNDATION RAILS BUTT AGAINST EACH OTHER, THEY SHOULD BE WELDED TOGETHER FULL CROSS-SECTION IN ORDER TO SATISFY THE EARTH CONTINUITY REQUIREMENTS.
- ON HOLD BEFORE LAYING THE FINAL FLOOR SCREED, ENSURE THAT THE RAILS ARE PROPERLY WITH A WATER GAUGE (OR SIMILAR DEVICE) BY LAYING UNDER OF COMPENSATION PLATES ALL TOGETHER. THE SUPPORTING CEMENT FOR THE FOUNDATION RAILS MUST BE CONTINUOUS AND BEARING OVER THE TOTAL RAIL LENGTH.
- EARTHQUAKE RESISTENT INSTALLATION IS REQUIRED, THE COMPENSATING PLATES, FOUNDATION AND THE SWITCHBOARD STRUCTURE MUST BE WELDED TO ONE ANOTHER AND TO A FLAT STEEL ANCHORED INTO THE BASE CONCRETE (NELSON ANCHOR) AS DESCRIBED, FOR EXAMPLE, IN SEISMIC INSTALLATION INSTRUCTION EMA/MS 403.220.
  THE DETAILS RELATING TO FOUNDATION RAILS, COMPENSATION PLATES AND METHOD OF SECTION SWITCHBOARD ARE NOT THEN VALID, THEY SHOULD BE MODIFIED TO SUIT THE METHOD OF FLOOR
  FOUNDATION RAILS ARE NOT PART OF THE SCOPE OF SUPPLY OF THE ELECTRICAL EQUIPMENT MUST BE OBTAINED LOCALLY.

  FLOOR FINISH: THE FLOOR FINISH SHOULD BE SUCH THAT IT WILL WITHSTAND THE LOADS THE SPECIFICATIONS. FOR SWITCHGEAR ROOMS A FLOOR FINISH, LOAD BEARING QUALITY, IN COMPLIANCE WITH ZE 45 (RATED COMPRESSIVE STRENGHTH 45N/mm, FLEXURALE TENSIDE GRINDING WEAR 9cm/50cm) IS NECESSARY. THE UPPER SURFACE OF THE FLOOR FINISH OR SCREED SHOULD NOT BE HIGHER THAN THE UPPER SURFACE OF THE FOUNDATION RAILS.

**SIEMENS**

| REVISION | DESCRIPTION | DATE | INIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| | |
|---|---|
| FACTORY NO: | 87XXXX |
| CUSTOMER | CAELUS ENERGY |
| CONTRACTOR | |
| PROJECT | NUNA DRILL SITE<br>CAELUS ENERGY |
| DOC NAME | 8DA10 34.5kV SWITCHGEAR<br>GENERAL ARRANGEMENT DRAWING<br>GENERAL INFORMATION |
| DWG. NO. | (3) W92210-EXXXX-P003 |

| PANEL: =H00+H00 | TYPICAL: =HZ00 | PAGE: B/B9 |
|---|---|---|

| APPROVED | CHECKED | DRAWN | DATE | SHEET | REVISION |
|---|---|---|---|---|---|
| | WITZEL | VIETING | 11.10.14 | 9- | |

APP: | CER: | A.B.:



OBJECT NUMBER:

ELCAD-Version 7.3.2.SP3
Last datei: 17.11.14
Archive: =H00 / B / B / 9
Translate file 1: TXNS_E
Translate file 2: CV_PB_EN.xlsx, 04-11-24
Translate file 3:
Translate file 4:
Translate file 5:
Project: I:\ELCAD_7\ANSI\87XXXX_CAELUS_ENERGY.pro
Symbol library 1: P_ANSI.SLI
Symbol library 2: PTD_M2_DOC_E
Symbol library 3: ANSI.SLI
Symbol library 4: ANSI1.SLI
Symbol library 5: