DRAWING NO. 123A90-DDL-EL-DG-20014

REV. 1

SYMBOL LEGEND:

- VOLTAGE DETECTOR
- ES — EARTHING SWITCH DISCONNECTOR
- M — MOTORIZED EARTHING SWITCH
- CIRCUIT BREAKER
- FUSE
- CONTACTOR
- THREE-PHASE TRANSFORMER WITH TAP CHANGER, CONNECTION DELTA STAR
- THREE-PHASE TRANSFORMER, CONNECTION DELTA STAR
- THREE-PHASE TRANSFORMER, CONNECTION DELTA DELTA
- THREE-PHASE TRANSFORMER, WITH THREE WINDINGS
- NER — NEUTRAL EARTHING RESISTOR
- VOLTAGE TRANSFORMER
- CURRENT TRANSFORMER
- SURGE ARRESTER
- CORE BALANCE CURRENT TRANSFORMER
- SURGE ARRESTOR FOR T-CONNECTOR (N.1 FOR EACH PHASE)
- VOLTAGE & CURRENT TRANSFORMER (3Ø X 2) (LPIT TYPE)
- VOLTAGE TRANSFORMER (3Ø X 2) (LPVT TYPE)
- CABLE BOX
- T-CONNECTOR CABLE TERMINATION
- CABLE AIR TERMINATION

LEGEND:

►	= DIRECTION OF SIGNAL
------	= CONTROL CABLE
25	= CHECK SYNCHRONISATION
26OT	= OIL TEMPERATURE INDICATOR
50	= INSTANTANEOUS OVERCURRENT PROTECTION
50N	= INSTANTANEOUS EARTH FAULT PROTECTION
51	= AC INVERSE TIME OVERCURRENT PROTECTION
51G	= AC INVERSE TIME EARTH FAULT PROTECTION
97T	= BUCHHOLZ RELAY
59N	= NEUTRAL OVERVOLTAGE RELAY
63T	= TRANSFORMER PRESSURE RELAY
67	= DIRECTIONAL OVERCURRENT PROTECTION
67N	= DIRECTIONAL EARTH FAULT PROTECTION
71OOLTC	= OLTC OIL LEVEL INDICATOR
71OT	= TRANSFORMER OIL LEVEL SWITCH
74	= TRIP CIRCUIT SUPERVISION
86	= LOCK OUT RELAY
49T	= WINDING TEMPERATURE THERMAL IMAGE RELAY
87NT	= RESTRICTED GROUND FAULT
87T	= DIFFERENTIAL PROTECTION
94B	= BUCHHOLZ ALARM AND TRIP AUXILIARY RELAY
94L	= OIL LEVEL ALARM AUXILIARY RELAY
94OT	= OIL TEMPERATURE ALARM AND TRIP AUXILIARY RELAY
94WT	= WINDING TEMPERATURE ALARM AND TRIP AUXILIARY RELAY
94P	= PRESSURE RELIEF DEVICE ALARM AND TRIP AUXILIARY RELAY
94X	= TRANSFORMER PROTECTION ALARM AND TRIP AUXILIARY RELAY
97OLTC	= OLTC PROTECTION RELAY
98T.1	= BLADDER RUPTURE RELAY
98T.2	= SELF DEHYDRATING BREATHER
OLTC	= ON LOAD TAP CHANGE
OCTC	= OPEN CIRCUIT TAP CHANGE
LSIG	= LONG TIME/SHORT TIME INSTANTAANEOUS AND GROUND FAULTS

NOTES:

1. PARTIAL DISCHARGE SYSTEM ON SG-100D1 6.6kV SWITCHGEAR IS INSTALLED IN MEASURE COLUMN. IT IS INTERFACED TO CCS VIA MODBUS TCP/IP.
2. EXERTHERM INTERFACE TO CCS IS VIA MODBUS TCP/IP AND IT IS LOCATED IN THE MEASURE COLUMN.

REFERENCES:

1. 123A90-DDL-EL-SP-20166-ELECTRICAL PROTECTION PHILOSOPHY
2. 123A90-DDL-EL-SP-20141 ELECTRICAL SYSTEM DESCRIPTION & DESIGN PHILOSOPHY
3. 123A90-DDL-EL-DG-20158 OVERALL/KEY SINGLE LINE DIAGRAM
4. 123A90-DDL-EL-DG-20015 ELECTRICAL SINGLE LINE DIAGRAM 6.6kV SYSTEMS
5. 1723002197-EL-DG-00010 SG-100D1 ELECTRICAL SINGLE LINE DIAGRAM

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
1	14/05/24	ASA	LMA/AMA	MDO	ACCEPTED FOR CONSTRUCTION (AFC)
0	21/12/23	DSF	CB/AMA	CHYO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : ELECTRICAL CONTROL, PROTECTION AND METERING DIAGRAMS LEGEND

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE N/A
DRAWN GPA	CHECKED LMA/AMA	APPROVED MDO	DATE 14/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DG-20014	SHEET 001/007	REV. 1

File Name : 123A90-DDL-EL-DG-20014_REV01.dwg

66 / 6.6 kV TRANSFORMER INCOMER

110 V DC
CONTROL + PROTECTIVE
RELAY SUPPLY

HNA6-AFA70 - 66 kV

SURGE ARRESTOR

VD1

ES
QZ92

1250A
DS
QZ92

NOTE 3

NOTE 3

SIEMENS/7SJ85

25 | 27
50 | 51
50N | 51G
67 | 67N

SIEMENS/7UT85

87 | 87NT

FO/MM/2 CORE

IEC61850
TO EMCS

LPVT

MERGING
UNIT

66:V3 kV
Cl. 0.5/3P

CB
Q0(QA1)
31.5kA
1250A

DS
QZ91
1250A

ES
QZ91

86-1

74

66:V3 kV
Cl. 0.5/3P
250A
Cl. 0.25/5TPE

LPIT

INTERTRIP

PERMISSIVES

VD2

3x(1x300)

TR-100AD1
KNAN
7MVA
66KV+/-8*1.25%%%/6.9kV
DynII
Zcc=8%

63T | 98T.1
71OT | 98T.2
26OT | 71OOLTC
97T | 97OLTC
49T

3x(2x120)+1x120

NEUTRAL CTs
1 1

200/1A
5VA, 5P20
5VA, 5P20

RR - 100D1
NER - 400A

NOTE 8

100/1A
5VA, 5P5
CBCT

6600:V3/110:V3/110:3 V
20VA, 0.5+3P
30VA, 0.5+3P
30VA, 3P

x3

7KV SURGE ARRESTOR

EARTH SWITCH

VOLTAGE
TRANSFORMER

600/1/1A
10VA, 5P25
5VA, 0.5+5P20

CURRENT
TRANSFORMER

REX640

MEASURE

U	pF
I	W
F	VAR
-	-

PROTECTION

50	50N
25	-
51	51N
74	86
50BF	59N

94X

NOTE 8

K86

TRIP

x3

ARC FAULT

IEC61850
ETH (RJ45)
redundant port

COM

ETH-cat6

ETH-cat6

IEC 61850
TO EMCS

PERMANENT INFRARED HOTSPOT DETECTION

FROM OTHER DEVICE

TO OTHER DEVICE

EXERTHERM

Alarm Temp.
Control
Ch 1 ÷ 8

TR1

MODBUS TCP/IP
TO EMCS

x8
Sens

A6-12KV,630A VCB

NOTE 3

SG-100D1 - 6.6 kV

110 V DC
CONTROL + PROTECTIVE
RELAY SUPPLY

NOTES:

1. DELETED.
2. DELETED.
3. MCBS SHALL HAVE FACILITY TO LOCK IN OPEN POSITION.
4. TO PREVENT A TRIP DURING TRANSFORMER ENERGISATION SECOND HARMONIC BLOCKING SHALL BE USED.
5. DELETED.
6. DELETED.
7. CHECK SYNCHRONISATION TO BE INCLUDED TO VERIFY THE VOLTAGE, PHASE ANGLE AND FREQUENCY ARE WITHIN ACCEPTABLE LIMITS PRIOR TO CLOSING THE CIRCUIT BREAKER. THE CHECK SYNCHRONISATION SHALL INCLUDE THE FACILITY FOR DEAD BUS CLOSING.
8. TRANSFORMER ALARMS ARE WIRED TO PROTECTION RELAY, TRIP SIGNALS ARE INSTEAD WIRED TO 94X INTERPOSING RELAYS: 94B, 94OT, 94L, 94P, 94WT, 94L-OLTC, 94P-OLTC.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
1	14/05/24	ASA	LMA/AMA	MDO	ACCEPTED FOR CONSTRUCTION (AFC)
0	21/12/23	DSF	CB/AMA	DYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : ELECTRICAL CONTROL, PROTECTION AND METERING DIAGRAMS
66 / 6.6 kV TRANSFORMER INCOMER

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE N/A

DRAWN GPA | CHECKED LMA/AMA | APPROVED MDO | DATE 14/05/2024

A1 | DRAWING NO. 123A90-DDL-EL-DG-20014 | SHEET 002/007 | REV. 1

DRAWING NO. 123A90-DDL-EL-DG-20014 REV. 1

File Name : 123A90-DDL-EL-DG-20014_REV01.dwg

6.6 KV BESS FEEDER

SG-100D1 - 6.6 kV

110 V DC
CONTROL + PROTECTIVE
RELAY SUPPLY

FUSE-7.2KV, 160A

A3-LC, 7.2KV, 400A DCO

TRIP

NOTE 3

REX640

MEASURE		PROTECTION	
U	pF	50	50N
I	W	51	25
F	VAR	67N	67
-	-	51N	86
		74	59N

K86

PERMANENT INFRARED HOTSPOT DETECTION
FROM OTHER DEVICE
TO OTHER DEVICE
EXERTHERM
TR1
Alarm Temp. Control
Ch 1 ÷ 8
MODBUS TCP/IP TO EMCS
x8
Sens

150/1A
5VA, 0.5+5P20
CURRENT TRANSFORMER
3
XI

x3
ARC FAULT

IEC61850 ETH (RJ45) redundant port
COM
ETH-cat6
ETH-cat6
IEC 61850 TO EMCS

6600:V3/110:V3/110:3 V
20VA, 0.5+3P
30VA, 0.5+3P
30VA, 3P

TRIP

VOLTAGE TRANSFORMER
x3
AVAILABLE

94WT NOTE 9

EARTH SWITCH
7KV SURGE ARRESTOR

100/1A
5VA, 5P5
CBCT

3x(1x70)

INTERTRIPS VIA SERIAL LINK FROM/TO CCS

PACKAGE INTERFACE

18T1
1.25MVA
7KV+/-2*2.5%/620V
Dyn5
Zcc=8%
OCTC,AN

26WT

NOTE 9

80Q1-620V
1250A

1 MW

BESS
1MW/5MWhe

VENDOR

BESS PACKAGE
A-85000

NOTES:

1. DELETED.
2. DELETED.
3. MCBS SHALL HAVE FACILITY TO LOCK IN OPEN POSITION.
4. DELETED.
5. CHECK SYNCHRONISATION TO BE INCLUDED FOR BESS AND FUEL CELL FEEDERS TO VERIFY THE VOLTAGE, PHASE ANGLE AND FREQUENCY ARE WITHIN ACCEPTABLE LIMITS PRIOR TO CLOSING THE SWITCHING DEVICE. THE CHECK SYNCHRONISATION SHALL INCLUDE THE FACILITY FOR DEAD BUS CLOSING.
6. NUMERICAL RELAYS TO PROVIDE EVENT RECORDING AND IEC 61850 CAPABILITY.
7. DELETED.
8. DELETED.
9. TRANSFORMER ALARMS ARE WIRED TO PROTECTION RELAY, TRIP SIGNALS ARE INSTEAD WIRED TO 94X INTERPOSING RELAYS: 94WT.
10. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
1	14/05/24	ASA	LMA/AMA	MDO	ACCEPTED FOR CONSTRUCTION (AFC)
0	21/12/23	DSF	CB/AMA	DYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : ELECTRICAL CONTROL, PROTECTION AND METERING DIAGRAMS
6.6 kV BESS FEEDER

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE N/A
DRAWN GPA	CHECKED LMA/AMA	APPROVED MDO	DATE 14/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DG-20014	SHEET 003/007	REV. 1

File Name : 123A90-DDL-EL-DG-20014_REV01.dwg

DRAWING NO. 123A90-DDL-EL-DG-20014

REV. 1

6.6 KV ELECTROLYSER FEEDER

SG-100D1 - 6.6 kV

110 V DC
CONTROL + PROTECTIVE
RELAY SUPPLY

A1
VCB(VD4)
12KV,630A
25KA

NOTE 3

OPENING

CLOSURE BLOCK

REX640

MEASURE		PROTECTION	
U	pF	50	50N
I	W	51	51N
F	VAR		
-	-	74	86

K86

PERMANENT INFRARED HOTSPOT DETECTION

FROM OTHER DEVICE

TO OTHER DEVICE

EXERTHERM TR1

Alarm Temp. Control

Ch 1 ÷ 8

MODBUS TCP/IP
TO EMCS

x8 Sens

3

X1

400/1A
5VA, 0.5+5P20
CURRENT
TRANSFORMER

x3

ARC FAULT

IEC61850
ETH (RJ45)
redundant port

COM

ETH-cat6

ETH-cat6

IEC 61850
TO EMCS

6600:V3/110:V3/110:3 V
20VA, 0.5+3P
30VA, 0.5+3P
30VA, 3P

TRIP

VOLTAGE
TRANSFORMER

x3

AVAILABLE

94X NOTE 8

EARTH SWITCH

7KV SURGE ARRESTOR

100/1A
5VA, 5P5
CBCT

ADDITIONAL
INTERTRIPS VIA SERIAL
LINK FROM/TO CCS

3x(1x120)

PACKAGE
INTERFACE

T4
3.2MVA
6.6/0.4/0.36KV
Dyn11
Zcc=7%
OCTC, KNAN

49T
63T
26OT

NOTE 8

1.25MW

1.25MW

ELECTROLYSER
2.5MW

VENDOR

ELECTROLYSER PACKAGE
A-20000

NOTES:

1. DELETED.
2. DELETED.
3. MCBS SHALL HAVE FACILITY TO LOCK IN OPEN POSITION.
4. DELETED.
5. CHECK SYNCHRONISATION TO BE INCLUDED TO VERIFY THE VOLTAGE, PHASE ANGLE AND FREQUENCY ARE WITHIN ACCEPTABLE LIMITS PRIOR TO CLOSING THE SWITCHING DEVICE. THE CHECK SYNCHRONISATION SHALL INCLUDE THE FACILITY FOR DEAD BUS CLOSING.
6. NUMERICAL RELAYS TO PROVIDE EVENT RECORDING AND IEC 61850 CAPABILITY.
7. DELETED.
8. TRANSFORMER ALARMS ARE WIRED TO PROTECTION RELAY, TRIP SIGNALS ARE INSTEAD WIRED TO 94X INTERPOSING RELAYS: 94WT, 94OT, 94P.
9. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
1	14/05/24	ASA	LMA/AMA	MDO	ACCEPTED FOR CONSTRUCTION (AFC)
0	21/12/23	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : ELECTRICAL CONTROL, PROTECTION AND METERING DIAGRAMS
6.6 kV ELECTROLYSER FEEDER

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE N/A
DRAWN GPA	CHECKED LMA/AMA	APPROVED MDO	DATE 14/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DG-20014	SHEET 004/007	REV. 1

File Name : 123A90-DDL-EL-DG-20014_REV01.dwg

DRAWING NO. 123A90-DDL-EL-DG-20014

REV. 1

6.6 KV FUEL CELL FEEDER

SG-100D1 - 6.6 kV

110 V DC
CONTROL + PROTECTIVE
RELAY SUPPLY

FUSE-7.2KV, 160A

A7-LC, 7.2KV, 400A DCO

OPENING

NOTE 3

REX640

MEASURE		PROTECTION	
U	pF	50	50N
I	W	51	25
F	VAR	67N	67
-	-	51N	86
		74	59N

K86

PERMANENT INFRARED HOTSPOT DETECTION

FROM OTHER DEVICE

TO OTHER DEVICE

EXERTHERM TR1

Alarm Temp. Control

Ch 1 ÷ 8

MODBUS TCP/IP
TO EMCS

x8 Sens

150/1A
5VA, 0.5+5P20
CURRENT TRANSFORMER

3

XI

x3 ARC FAULT

IEC61850
ETH (RJ45)
redundant port

COM

ETH-cat6

ETH-cat6

IEC 61850
TO EMCS

6600:V3/110:V3/110:3 V
20VA, 0.5+3P
30VA, 0.5+3P
30VA, 3P

TRIP

VOLTAGE TRANSFORMER

x3

AVAILABLE

94WT NOTE 9

EARTH SWITCH

7KV SURGE ARRESTOR

100/1A
5VA, 5P5
CBCT

3x(1x70)

INTERTRIPS VIA SERIAL
LINK FROM/TO CCS

PACKAGE INTERFACE

TA 30
1.25MVA
6.6KV+/-2*2.5%/400V
Dd0
Zcc=6%
OCTC,AN

26WT

NOTE 9

FC30-400V
2500A

TB30

1 MW

FUEL CELL
1MW

VENDOR

FUEL CELL PACKAGE
A-80000

NOTES:

1. DELETED.
2. DELETED.
3. MCBS SHALL HAVE FACILITY TO LOCK IN OPEN POSITION.
4. DELETED.
5. CHECK SYNCHRONISATION TO BE INCLUDED FOR BESS AND FUEL CELL FEEDERS TO VERIFY THE VOLTAGE, PHASE ANGLE AND FREQUENCY ARE WITHIN ACCEPTABLE LIMITS PRIOR TO CLOSING THE SWITCHING DEVICE. THE CHECK SYNCHRONISATION SHALL INCLUDE THE FACILITY FOR DEAD BUS CLOSING.
6. NUMERICAL RELAYS TO PROVIDE EVENT RECORDING AND IEC 61850 CAPABILITY.
7. DELETED.
8. DELETED.
9. TRANSFORMER ALARMS ARE WIRED TO PROTECTION RELAY, TRIP SIGNALS ARE INSTEAD WIRED TO 94X INTERPOSING RELAYS: 94WT.
10. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
1	14/05/24	ASA	LMA/AMA	MDO	ACCEPTED FOR CONSTRUCTION (AFC)
0	21/12/23	DSF	CB/AMA	DYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : ELECTRICAL CONTROL, PROTECTION AND METERING DIAGRAMS
6.6 kV FUEL CELL FEEDER

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE N/A
DRAWN GPA	CHECKED LMA/AMA	APPROVED MDO	DATE 14/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DG-20014	SHEET 005/007	REV. 1

File Name : 123A90-DDL-EL-DG-20014_REV01.dwg

6.6 / 0.4 kV DISTRIBUTION TRANSFORMER FEEDER

SG-100D1 - 6.6 kV

110 V DC
CONTROL + PROTECTIVE
RELAY SUPPLY

FUSE-7.2KV, 200A

A4-LC, 7.2KV, 400A DCO

NOTE 3

TRIP

INTERTRIP

REX640

MEASURE		PROTECTION	
U	pF	50	50N
I	W	51	-
F	VAR	-	-
-	-	51N	86
		74	59N
		51G	

NOTE 10

K86

PERMANENT INFRARED HOTSPOT DETECTION

FROM OTHER DEVICE

TO OTHER DEVICE

EXERTHERM TR1

Alarm Temp. Control

Ch 1 ÷ 8

MODBUS TCP/IP TO EMCS

x8 Sens

3

XI

200/1A
5VA, 0.5+5P20
CURRENT TRANSFORMER

x3

ARC FAULT

IEC61850 ETH (RJ45) redundant port

COM

ETH-cat6

ETH-cat6

IEC 61850 TO EMCS

TRIP

94X NOTE 7

EARTH SWITCH

7KV SURGE ARRESTOR

PERMISSIVE

100/1A
5VA, 5P5
CBCT

3x(1x70)

TR-200DE1
KNAN
1.6MVA
6.6KV+/-2x2.5%/0.42KV
Dyn 11
Zcc=6%
OCTC

49T
63T
97T
260T
710T

NOTE 7

INTERTRIPS VIA SERIAL LINK FROM/TO CCS

1

NEUTRAL CT

2500/1A
6VA,SP20

5x(1x300) + 3x (1x300)

SA

2500A ACB

NOTE 6

M

3

TRIP

REF 615

50 51 50N 51N

PERMISSVES

TRIP

SG-200N1- 400 V

NOTES:

1. DELETED.
2. DELETED.
3. MCBS SHALL HAVE FACILITY TO LOCK IN OPEN POSITION.
4. DELETED.
5. DELETED.
6. DELETED.
7. TRANSFORMER ALARMS ARE WIRED TO PROTECTION RELAY TRIP SIGNALS ARE INSTEAD WIRED TO 94X INTERPOSING RELAYS: 94B, 94OT, 94WT.
8. NUMERICAL RELAYS TO PROVIDE EVENT RECORDING AND IEC 61850 CAPABILITY.
9. DELETED.
10. 59G TO BE CONNECTED TO THE OPEN DELTA VOLTAGE FROM BUSBAR CUBICLE.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
1	14/05/24	ASA	LMA/AMA	MDO	ACCEPTED FOR CONSTRUCTION (AFC)
0	21/12/23	DSF	CB/AMA	OYO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : ELECTRICAL CONTROL, PROTECTION AND METERING DIAGRAMS
6.6 / 0.4 kV DISTRIBUTION TRANSFORMER FEEDER

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE N/A
DRAWN GPA	CHECKED LMA/AMA	APPROVED MDO	DATE 14/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DG-20014	SHEET 006/007	REV. 1

File Name : 123A90-DDL-EL-DG-20014_REV01.dwg

DRAWING NO. 123A90-DDL-EL-DG-20014

REV. 1

6.6 kV SOLAR PACKAGE FEEDER

SG-100D1 - 6.6 kV

110 V DC
CONTROL + PROTECTIVE
RELAY SUPPLY

FUSE-7.2KV, 63A

A2-LC, 7.2KV, 400A DCO

NOTE 3

OPENING

INTERTRIP

REX640

MEASURE		PROTECTION	
U	pF	50	50N
I	W	51	25
F	VAR	67N	67
-	-	51N	86
		74	59N

K86

XI

3

50/1A
2.5VA, 0.5+5P15

CURRENT
TRANSFORMER

x3

ARC FAULT

IEC61850
ETH (RJ45)
redundant port

COM

ETH-cat6

ETH-cat6

IEC 61850
TO EMCS

6600:V3/110:V3/110:3 V
20VA, 0.5+3P
30VA, 0.5+3P
30VA, 3P

TRIP

VOLTAGE
TRANSFORMER

x3

AVAILABLE

94X

NOTE 5

EARTH SWITCH

7KV SURGE ARRESTOR

PERMISSIVE

100/1A
5VA, 5P5

CBCT

3x(1x70)

TR-200ED1
KNAN
0.5MVA
6.6kV+/-2*2.5%/0.8KV
Dyn 11
Zcc=6%
OCTC

49T
63T
97T
260T
710T

NOTE 5

INTERTRIPS VIA SERIAL
LINK FROM/TO CCS

3x (1x300)

SG-200D2

QB1
630A

QB2
630A

SA

3x (1x300)

PACKAGE
INTERFACE

SOLAR FARM VENDOR
PACKAGE

330 kVA

330 kVA

POWER DC 480kW

PERMANENT INFRARED HOTSPOT DETECTION

FROM OTHER DEVICE

TO OTHER DEVICE

EXERTHERM

TR1

Alarm Temp. Control

Ch 1 ÷ 8

MODBUS TCP/IP
TO EMCS

x8

Sens

NOTES:

1. DELETED.
2. DELETED.
3. MCBS SHALL HAVE FACILITY TO LOCK IN OPEN POSITION.
4. DELETED.
5. TRANSFORMER ALARMS ARE WIRED TO PROTECTION RELAY, TRIP SIGNALS ARE INSTEAD WIRED TO 94X INTERPOSING RELAYS: 94WT, 94OT, 94P.
6. CHECK SYNCHRONISATION TO BE INCLUDED TO VERIFY THE VOLTAGE, PHASE ANGLE AND FREQUENCY ARE WITHIN ACCEPTABLE LIMITS PRIOR TO CLOSING THE SWITCHING DEVICE. THE CHECK SYNCHRONISATION SHALL INCLUDE THE FACILITY FOR DEAD BUS CLOSING.
7. NUMERICAL RELAYS TO PROVIDE EVENT RECORDING AND IEC 61850 CAPABILITY.
8. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
1	14/05/24	ASA	LMA/AMA	MDO	ACCEPTED FOR CONSTRUCTION (AFC)
0	21/12/23	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : ELECTRICAL CONTROL, PROTECTION AND METERING DIAGRAMS
6.6 kV SOLAR PACKAGE FEEDER

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE N/A
DRAWN GPA	CHECKED LMA/AMA	APPROVED MDO	DATE 14/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DG-20014	SHEET 007/007	REV. 1

File Name : 123A90-DDL-EL-DG-20014_REV01.dwg