	Project: NMDC TURBO BLOWER STATION (PACKAGE 010A) Customer : NMDC LTD Consultant: MECON LIMITED	Bharat Heavy Electricals Limited Project Engineering Department Drg No:PEEC 04681;Rev No:00

SIGNAL INPUT LIST TO DCS

TAG PHILOSOPHY FOR I/O SIGNALS

E	XXXXX	XXXXX
1	2	3

1st Barrel - INDICATES ELECTRICAL SYSTEM
2nd barrel -Indicates equipment
3th barrel -type of signal

2ND BARREL DESCRIPTION

415M1	-	415V MCC-1
415M2	-	415V MCC-2
415M3	-	415V MCC-3

3TH BARREL DESCRIPTION

ICXCS	-	INCOMER CB CLOSE	ICXRC	-	INCOMER CB RTC	BCXCS	-	BUS COUPLER CB CLOSE
ICXON	-	INCOMER CB OPEN	ICXTC	-	INCOMER CB TRIP CKT TROUBLE	BCXON	-	BUS COUPLER CB OPEN
BCXRC	-	BUS COUPLER CB RTC	BCXDC	-	BUS COUPLER CB DC FAIL	ICXAX	-	METERING SIGNAL FOR INCOMER AMP.
BCXTC	-	BUS COUPLER CB TRIP CKT TROUBLE	BPTVX	-	METERING SIGNAL FOR BUS PT VOLT.	ICXVX	-	METERING SIGNAL FOR INCOMER VOLT.
TRTBX	-	TRANSFORMER TROUBLE	ICXKW	-	METERING SIGNAL FOR INCOMER KW			

BHEL	Project: NMDC TURBO BLOWER STATION (PACKAGE 010A) Customer : NMDC LTD Consultant: MECON LIMITED	Bharat Heavy Electricals Limited Project Engineering Department Drg No:PEEC 04681;Rev No:00

SIGNAL INPUT LIST TO DCS/EACP

Sl. NO.	TAG NO.	DESCRIPTION	TYPE OF I/O	PURPOSE				Normal Field Contact Status	REMARKS	REV
				DCS CRT	EACP	SOE	Interlock			
1.1.	**415V MCC-1**									
1	E415M1IC1CS	415V MCC-1 - INCOMER-1 - CB CLOSE	DI	√	_	_	_	_	FEEDBACK	00
2	E415M1IC1ON	415V MCC-1 - INCOMER-1 - CB OPEN	DI	√	_	_	_	_	FEEDBACK	00
3	E415M1IC1RC	415V MCC-1 - INCOMER-1 - CB RTC	DI	√	_	_	_	_	FEEDBACK	00
4	E415M1IC1TC	415V MCC-1 - INCOMER-1 - CB TRIP CIRCUIT TROUBLE	DI	√	_	_	_	_	FEEDBACK	00
5	E415M1IC2CS	415V MCC-1 - INCOMER-2 - CB CLOSE	DI	√	_	_	_	_	FEEDBACK	00
6	E415M1IC2ON	415V MCC-1 - INCOMER-2 - CB OPEN	DI	√	_	_	_	_	FEEDBACK	00
7	E415M1IC2RC	415V MCC-1 - INCOMER-2 - CB RTC	DI	√	_	_	_	_	FEEDBACK	00
8	E415M1IC2TC	415V MCC-1 - INCOMER-2 - CB TRIP CIRCUIT TROUBLE	DI	√	_	_	_	_	FEEDBACK	00
9	E415M1BC1CS	415V MCC-1 - BUS COUPLER-1 - CB CLOSE	DI	√	_	_	_	_	FEEDBACK	00
10	E415M1BC1ON	415V MCC-1 - BUS COUPLER-1 - CB OPEN	DI	√	_	_	_	_	FEEDBACK	00
11	E415M1BC1RC	415V MCC-1 - BUS COUPLER-1 - CB RTC	DI	√	_	_	_	_	FEEDBACK	00
12	E415M1BC1TC	415V MCC-1 - BUS COUPLER-1 - CB TRIP CIRCUIT TROUBLE	DI	√	_	_	_	_	FEEDBACK	00
13	E415M1BC1DC	415V MCC-1 - BUS COUPLER-1 - DC FAIL	DI	√	_	_	_	_	FEEDBACK	00
1.1.	**415V MCC-2**									
14	E415M2IC1CS	415V MCC-2 - INCOMER-1 - CB CLOSE	DI	√	_	_	_	_	FEEDBACK	00
15	E415M2IC1ON	415V MCC-2 - INCOMER-1 - CB OPEN	DI	√	_	_	_	_	FEEDBACK	00
16	E415M2IC1RC	415V MCC-2 - INCOMER-1 - CB RTC	DI	√	_	_	_	_	FEEDBACK	00
17	E415M2IC1TC	415V MCC-2 - INCOMER-1 - CB TRIP CIRCUIT TROUBLE	DI	√	_	_	_	_	FEEDBACK	00
18	E415M2IC2CS	415V MCC-2 - INCOMER-2 - CB CLOSE	DI	√	_	_	_	_	FEEDBACK	00
19	E415M2IC2ON	415V MCC-2 - INCOMER-2 - CB OPEN	DI	√	_	_	_	_	FEEDBACK	00
20	E415M2IC2RC	415V MCC-2 - INCOMER-2 - CB RTC	DI	√	_	_	_	_	FEEDBACK	00
21	E415M2IC2TC	415V MCC-2 - INCOMER-2 - CB TRIP CIRCUIT TROUBLE	DI	√	_	_	_	_	FEEDBACK	00
22	E415M2BC1CS	415V MCC-2 - BUS COUPLER-1 - CB CLOSE	DI	√	_	_	_	_	FEEDBACK	00
23	E415M2BC1ON	415V MCC-2 - BUS COUPLER-1 - CB OPEN	DI	√	_	_	_	_	FEEDBACK	00
24	E415M2BC1RC	415V MCC-2 - BUS COUPLER-1 - CB RTC	DI	√	_	_	_	_	FEEDBACK	00
25	E415M2BC1TC	415V MCC-2 - BUS COUPLER-1 - CB TRIP CIRCUIT TROUBLE	DI	√	_	_	_	_	FEEDBACK	00
26	E415M2BC1DC	415V MCC-2 - BUS COUPLER-1 - DC FAIL	DI	√	_	_	_	_	FEEDBACK	00

BHEL	Project: NMDC TURBO BLOWER STATION (PACKAGE 010A) Customer : NMDC LTD Consultant: MECON LIMITED	Bharat Heavy Electricals Limited Project Engineering Department Drg No:PEEC 04681;Rev No:00

SIGNAL INPUT LIST TO DCS/EACP

Sl. NO.	TAG NO.	DESCRIPTION	TYPE OF I/O	PURPOSE				Normal Field Contact Status	REMARKS	REV
				DCS CRT	EACP	SOE	Interlock			
1.1.	**415V MCC-3**									
27	E415M3IC1CS	415V MCC-3 - INCOMER-1 - CB CLOSE	DI	√	_	_	_	_	FEEDBACK	00
28	E415M3IC1ON	415V MCC-3 - INCOMER-1 - CB OPEN	DI	√	_	_	_	_	FEEDBACK	00
29	E415M3IC1RC	415V MCC-3 - INCOMER-1 - CB RTC	DI	√	_	_	_	_	FEEDBACK	00
30	E415M3IC1TC	415V MCC-3 - INCOMER-1 - CB TRIP CIRCUIT TROUBLE	DI	√	_	_	_	_	FEEDBACK	00
31	E415M3IC2CS	415V MCC-3 - INCOMER-2 - CB CLOSE	DI	√	_	_	_	_	FEEDBACK	00
32	E415M3IC2ON	415V MCC-3 - INCOMER-2 - CB OPEN	DI	√	_	_	_	_	FEEDBACK	00
33	E415M3IC2RC	415V MCC-3 - INCOMER-2 - CB RTC	DI	√	_	_	_	_	FEEDBACK	00
34	E415M3IC2TC	415V MCC-3 - INCOMER-2 - CB TRIP CIRCUIT TROUBLE	DI	√	_	_	_	_	FEEDBACK	00
35	E415M3BC1CS	415V MCC-3 - BUS COUPLER-1 - CB CLOSE	DI	√	_	_	_	_	FEEDBACK	00
36	E415M3BC1ON	415V MCC-3 - BUS COUPLER-1 - CB OPEN	DI	√	_	_	_	_	FEEDBACK	00
37	E415M3BC1RC	415V MCC-3 - BUS COUPLER-1 - CB RTC	DI	√	_	_	_	_	FEEDBACK	00
38	E415M3BC1TC	415V MCC-3 - BUS COUPLER-1 - CB TRIP CIRCUIT TROUBLE	DI	√	_	_	_	_	FEEDBACK	00
39	E415M3BC1DC	415V MCC-3 - BUS COUPLER-1 - DC FAIL	DI	√	_	_	_	_	FEEDBACK	00

NOTES:

1) In addition to above DI Signals, Consider 25% Spare DI Signals for PED use.

2) All the above signals are soft signals.

	Project:NMDC TURBO BLOWER STATION (PACKAGE 010A) Customer : NMDC LTD Consultant: MECON LIMITED	Bharat Heavy Electricals Limited Project Engineering Department Drg No:PEEC 04681;Rev No:00

SIGNAL INPUT LIST TO DCS

SL. No	TAG NO	DESCRIPTION	RANGE	UNITS	TYPE OF I/O	SIGNAL TYPE	DCS	EACP	REMARKS	REV
2.1	**415V MCC-1**									
1	E415M1IC1AR	415V MCC-1 INCOMER-1 CB-CURRENT R PHASE	0-800	A	AI	-	√	-	METERING	00
2	E415M1IC1AY	415V MCC-1 INCOMER-1 CB-CURRENT Y PHASE	0-800	A	AI	-	√	-	METERING	00
3	E415M1IC1AB	415V MCC-1 INCOMER-1 CB-CURRENT B PHASE	0-800	A	AI	-	√	-	METERING	00
4	E415M1IC1VR	415V MCC-1 INCOMER-1 CB-VOLTAGE R PHASE	0-600	V	AI	-	√	-	METERING	00
5	E415M1IC1VY	415V MCC-1 INCOMER-1 CB-VOLTAGE Y PHASE	0-600	V	AI	-	√	-	METERING	00
6	E415M1IC1VB	415V MCC-1 INCOMER-1 CB-VOLTAGE B PHASE	0-600	V	AI	-	√	-	METERING	00
7	E415M1IC2AR	415V MCC-1 INCOMER-2 CB-CURRENT R PHASE	0-800	A	AI	-	√	-	METERING	00
8	E415M1IC2AY	415V MCC-1 INCOMER-2 CB-CURRENT Y PHASE	0-800	A	AI	-	√	-	METERING	00
9	E415M1IC2AB	415V MCC-1 INCOMER-2 CB-CURRENT B PHASE	0-800	A	AI	-	√	-	METERING	00
10	E415M1IC2VR	415V MCC-1 INCOMER-2 CB-VOLTAGE R PHASE	0-600	V	AI	-	√	-	METERING	00
11	E415M1IC2VY	415V MCC-1 INCOMER-2 CB-VOLTAGE Y PHASE	0-600	V	AI	-	√	-	METERING	00
12	E415M1IC2VB	415V MCC-1 INCOMER-2 CB-VOLTAGE B PHASE	0-600	V	AI	-	√	-	METERING	00
13	E415M1IC1KW	415V MCC-1 INCOMER-1 CB-KW METER READING	0-5	MW	AI	-	√	-	METERING	00
14	E415M1IC2KW	415V MCC-1 INCOMER-2 CB-KW METER READING	0-5	MW	AI	-	√	-	METERING	00
15	E415M1BPTV1	415V MCC-1 BUS PT -1 - VOLTAGE R PHASE	0-800	A	AI	-	√	-	METERING	00
16	E415M1BPTV2	415V MCC-1 BUS PT -2 - VOLTAGE R PHASE	0-800	A	AI	-	√	-	METERING	00
2.2	**415V MCC-2**									
17	E415M2IC1AR	415V MCC-2 INCOMER-1 CB-CURRENT R PHASE	0-800	A	AI	-	√	-	METERING	00
18	E415M2IC1AY	415V MCC-2 INCOMER-1 CB-CURRENT Y PHASE	0-800	A	AI	-	√	-	METERING	00
19	E415M2IC1AB	415V MCC-2 INCOMER-1 CB-CURRENT B PHASE	0-800	A	AI	-	√	-	METERING	00
20	E415M2IC1VR	415V MCC-2 INCOMER-1 CB-VOLTAGE R PHASE	0-600	V	AI	-	√	-	METERING	00
21	E415M2IC1VY	415V MCC-2 INCOMER-1 CB-VOLTAGE Y PHASE	0-600	V	AI	-	√	-	METERING	00
22	E415M2IC1VB	415V MCC-2 INCOMER-1 CB-VOLTAGE B PHASE	0-600	V	AI	-	√	-	METERING	00
23	E415M2IC2AR	415V MCC-2 INCOMER-2 CB-CURRENT R PHASE	0-800	A	AI	-	√	-	METERING	00
24	E415M2IC2AY	415V MCC-2 INCOMER-2 CB-CURRENT Y PHASE	0-800	A	AI	-	√	-	METERING	00
25	E415M2IC2AB	415V MCC-2 INCOMER-2 CB-CURRENT B PHASE	0-800	A	AI	-	√	-	METERING	00
26	E415M2IC2VR	415V MCC-2 INCOMER-2 CB-VOLTAGE R PHASE	0-600	V	AI	-	√	-	METERING	00
27	E415M2IC2VY	415V MCC-2 INCOMER-2 CB-VOLTAGE Y PHASE	0-600	V	AI	-	√	-	METERING	00
28	E415M2IC2VB	415V MCC-2 INCOMER-2 CB-VOLTAGE B PHASE	0-600	V	AI	-	√	-	METERING	00
29	E415M2IC1KW	415V MCC-2 INCOMER-1 CB-KW METER READING	0-5	MW	AI	-	√	-	METERING	00
30	E415M2IC2KW	415V MCC-2 INCOMER-2 CB-KW METER READING	0-5	MW	AI	-	√	-	METERING	00
31	E415M2BPTV1	415V MCC-2 BUS PT -1 - VOLTAGE R PHASE	0-800	A	AI	-	√	-	METERING	00
32	E415M2BPTV2	415V MCC-2 BUS PT -2 - VOLTAGE R PHASE	0-800	A	AI	-	√	-	METERING	00

	Project:NMDC TURBO BLOWER STATION (PACKAGE 010A) Customer : NMDC LTD Consultant: MECON LIMITED	Bharat Heavy Electricals Limited Project Engineering Department Drg No:PEEC 04681;Rev No:00

SIGNAL INPUT LIST TO DCS

SL. No	TAG NO	DESCRIPTION	RANGE	UNITS	TYPE OF I/O	SIGNAL TYPE	DCS	EACP	REMARKS	REV
2.3	**415V MCC-3**									
33	E415M3IC1AR	415V MCC-3 INCOMER-1 CB-CURRENT R PHASE	0-800	A	AI	-	√	-	METERING	00
34	E415M3IC1AY	415V MCC-3 INCOMER-1 CB-CURRENT Y PHASE	0-800	A	AI	-	√	-	METERING	00
35	E415M3IC1AB	415V MCC-3 INCOMER-1 CB-CURRENT B PHASE	0-800	A	AI	-	√	-	METERING	00
36	E415M3IC1VR	415V MCC-3 INCOMER-1 CB-VOLTAGE R PHASE	0-600	V	AI	-	√	-	METERING	00
37	E415M3IC1VY	415V MCC-3 INCOMER-1 CB-VOLTAGE Y PHASE	0-600	V	AI	-	√	-	METERING	00
38	E415M3IC1VB	415V MCC-3 INCOMER-1 CB-VOLTAGE B PHASE	0-600	V	AI	-	√	-	METERING	00
39	E415M3IC2AR	415V MCC-3 INCOMER-2 CB-CURRENT R PHASE	0-800	A	AI	-	√	-	METERING	00
40	E415M3IC2AY	415V MCC-3 INCOMER-2 CB-CURRENT Y PHASE	0-800	A	AI	-	√	-	METERING	00
41	E415M3IC2AB	415V MCC-3 INCOMER-2 CB-CURRENT B PHASE	0-800	A	AI	-	√	-	METERING	00
42	E415M3IC2VR	415V MCC-3 INCOMER-2 CB-VOLTAGE R PHASE	0-600	V	AI	-	√	-	METERING	00
43	E415M3IC2VY	415V MCC-3 INCOMER-2 CB-VOLTAGE Y PHASE	0-600	V	AI	-	√	-	METERING	00
44	E415M3IC2VB	415V MCC-3 INCOMER-2 CB-VOLTAGE B PHASE	0-600	V	AI	-	√	-	METERING	00
45	E415M3IC1KW	415V MCC-3 INCOMER-1 CB-KW METER READING	0-5	MW	AI	-	√	-	METERING	00
46	E415M3IC2KW	415V MCC-3 INCOMER-2 CB-KW METER READING	0-5	MW	AI	-	√	-	METERING	00
47	E415M3BPTV1	415V MCC-3 BUS PT -1 - VOLTAGE R PHASE	0-800	A	AI	-	√	-	METERING	00
48	E415M3BPTV2	415V MCC-3 BUS PT -2 - VOLTAGE R PHASE	0-800	A	AI	-	√	-	METERING	00
Note ;-										
	1) In addition to above AI Signals, Consider 25% Spare AI Signals PED use. All the above signals are soft signals.									

Cheklist for Serial Communication between maxDNA Systems and Foreign Device :BHEL

A Device Specific :

SN	Parameters	Options available	Remarks if any
1	Modle No.& Make of Device		
2	Communications Link Options	☐ Multidrop ☐ Peer to Peer ☐ N/w topology attached	
3	Protocol Mode (Device is a)	☐ Master ☐ Slave ☐ Master/Slave	
4	Protocol	☐ RTU ☐ ASCII ☐ Other ————	
5	Master	☐ System maxDNA ☐ Other ————	
6	Redundancy Requirements	Yes / No	
7	Dist.bet.maxDNA System & Device*	☐ ———— Feet ☐ ———— Meters	

B Electrical Spcific :

1	Interface Type	☐ RS232 ☐ RS422 ☐ RS485	
2	Wiring at Device end	☐ 2 Wire ☐ 4 Wire	
3	Transmission Channel	☐ Half Duplex ☐ Full Duplex	
4	Baud Rates (bps)	☐ 1200 ☐ 2400 ☐ 4800 ☐ 9600 ☐ 19200	
5	Databits	☐ 8 ☐ 7	
6	Stopbits	☐ 1 ☐ 2	
7	Parity	☐ None ☐ Odd ☐ Even	
8	H/w & Software Handshake	☐ Yes ☐ No	
9	Response Timeout time (Sec)	☐ ———— ☐ Configurable timeout	
10	Data Formats Supported	☐ Boolean ☐ Real ☐ Char ☐ Sn.Int ☐ UnSn.Int	
11	Transmission mode	☐ Asynchronous ☐ Synchronous	

C Application Specific : *

1	Primary Function*	☐ Data Acquisition ☐ Data Acquisition & Control	
		☐ Download parameter sets	
2	Analog Points to read	------Nos. ☐ Details attached ☐ Details not attached	
3	Analog Points to write	------Nos. ☐ Details attached ☐ Details not attached	
4	Digital Points to read	------Nos. ☐ Details attached ☐ Details not attached	
5	Digital Points to write	------Nos. ☐ Details attached ☐ Details not attached	
6	Memory / Flag Points to read	------Nos. ☐ Details attached ☐ Details not attached	
7	Memory / Flag Points to write	------Nos. ☐ Details attached ☐ Details not attached	

D Hardware Specific :

1	Cable type	☐ Boolean cable ☐ Twisted pair cable	
2	Cable Details Enclosed	☐ Yes ☐ No	
3	Any specific Converter required	☐ Yes ☐ No ☐ Details enclosed	

E Device Documents :

1	Manufacturer's Documents*	☐ Tech., Spec. ☐ Operating Manual	

***Notes:**

A6 To identify converter requirement and cable length.

C The sr.no.1 to 7 are reqd.to be furnished for interface impl. :such as Tagname,Description,point type, modbus(Register) address,EU,range & device (dlave) address

C1 What is the primary purpose of the communications link?

E1 Reqd. Contents : This document must provide an overview of the device including its intended use(a general technical,communication & electrical details)

Refer second sheet for modbus mapping address list format requirement.

This Document is to be filled by LT Switchgear Vendor and submitted to BHEL during detail engineering.

Tag name (Maximum 15 Char.)	Tag Description (Maximum of 32 Char.)	Point Type (Note-1)	DCS		Modbus Range		Engg. Unit	Alarm Requirement (Y / N)	Alarm Priority (URGENT/HI/LO)	Alarm SetPoint	State text for 0 condition	State text for 1 condition	Normal State (State 0 or State 1)	History Required (Y/N)	Data Format (Note-3)	Device ID (Address)	Modbus address	Function Code / Register Type (Note-4)
			Min	Max	Min	Max												
E415M1IC1AR	415V MCC-1 INCOMER-1 CB-CURRENT R PHASE	AI																
E415M1IC1AY	415V MCC-1 INCOMER-1 CB-CURRENT Y PHASE	AI																
E415M1IC1AB	415V MCC-1 INCOMER-1 CB-CURRENT B PHASE	AI																
E415M1IC1VR	415V MCC-1 INCOMER-1 CB-VOLTAGE R PHASE	AI																
E415M1IC1VY	415V MCC-1 INCOMER-1 CB-VOLTAGE Y PHASE	AI																
E415M1IC1VB	415V MCC-1 INCOMER-1 CB-VOLTAGE B PHASE	AI																
E415M1IC2AR	415V MCC-1 INCOMER-2 CB-CURRENT R PHASE	AI																
E415M1IC2AY	415V MCC-1 INCOMER-2 CB-CURRENT Y PHASE	AI																
E415M1IC2AB	415V MCC-1 INCOMER-2 CB-CURRENT B PHASE	AI																
E415M1IC2VR	415V MCC-1 INCOMER-2 CB-VOLTAGE R PHASE	AI																
E415M1IC2VY	415V MCC-1 INCOMER-2 CB-VOLTAGE Y PHASE	AI																
E415M1IC2VB	415V MCC-1 INCOMER-2 CB-VOLTAGE B PHASE	AI																
E415M1IC1KW	415V MCC-1 INCOMER-1 CB-KW METER READING	AI																
E415M1IC2KW	415V MCC-1 INCOMER-2 CB-KW METER READING	AI																
E415M1BPTV1	415V MCC-1 BUS PT -1 - VOLTAGE R PHASE	AI																
E415M1BPTV2	415V MCC-1 BUS PT -2 - VOLTAGE R PHASE	AI																
E415M2IC1AR	415V MCC-2 INCOMER-1 CB-CURRENT R PHASE	AI																
E415M2IC1AY	415V MCC-2 INCOMER-1 CB-CURRENT Y PHASE	AI																
E415M2IC1AB	415V MCC-2 INCOMER-1 CB-CURRENT B PHASE	AI																
E415M2IC1VR	415V MCC-2 INCOMER-1 CB-VOLTAGE R PHASE	AI																
E415M2IC1VY	415V MCC-2 INCOMER-1 CB-VOLTAGE Y PHASE	AI																
E415M2IC1VB	415V MCC-2 INCOMER-1 CB-VOLTAGE B PHASE	AI																
E415M2IC2AR	415V MCC-2 INCOMER-2 CB-CURRENT R PHASE	AI																
E415M2IC2AY	415V MCC-2 INCOMER-2 CB-CURRENT Y PHASE	AI																
E415M2IC2AB	415V MCC-2 INCOMER-2 CB-CURRENT B PHASE	AI																
E415M2IC2VR	415V MCC-2 INCOMER-2 CB-VOLTAGE R PHASE	AI																
E415M2IC2VY	415V MCC-2 INCOMER-2 CB-VOLTAGE Y PHASE	AI																
E415M2IC2VB	415V MCC-2 INCOMER-2 CB-VOLTAGE B PHASE	AI																
E415M2IC1KW	415V MCC-2 INCOMER-1 CB-KW METER READING	AI																

This document is to be filled by LT Switchgear Vendor and submitted to BHEL during detail engineering.

E415M2IC2KW	415V MCC-2 INCOMER-2 CB-KW METER READING	AI																
E415M2BPTV1	415V MCC-2 BUS PT -1 - VOLTAGE R PHASE	AI																
E415M2BPTV2	415V MCC-2 BUS PT -2 - VOLTAGE R PHASE	AI																
E415M3IC1AR	415V MCC-3 INCOMER-1 CB· CURRENT R PHASE	AI																
E415M3IC1AY	415V MCC-3 INCOMER-1 CB· CURRENT Y PHASE	AI																
E415M3IC1AB	415V MCC-3 INCOMER-1 CB· CURRENT B PHASE	AI																
E415M3IC1VR	415V MCC-3 INCOMER-1 CB· VOLTAGE R PHASE	AI																
E415M3IC1VY	415V MCC-3 INCOMER-1 CB· VOLTAGE Y PHASE	AI																
E415M3IC1VB	415V MCC-3 INCOMER-1 CB· VOLTAGE B PHASE	AI																
E415M3IC2AR	415V MCC-3 INCOMER-2 CB· CURRENT R PHASE	AI																
E415M3IC2AY	415V MCC-3 INCOMER-2 CB· CURRENT Y PHASE	AI																
E415M3IC2AB	415V MCC-3 INCOMER-2 CB· CURRENT B PHASE	AI																
E415M3IC2VR	415V MCC-3 INCOMER-2 CB· VOLTAGE R PHASE	AI																
E415M3IC2VY	415V MCC-3 INCOMER-2 CB· VOLTAGE Y PHASE	AI																
E415M3IC2VB	415V MCC-3 INCOMER-2 CB· VOLTAGE B PHASE	AI																
E415M3IC1KW	415V MCC-3 INCOMER-1 CB-KW METER READING	AI																
E415M3IC2KW	415V MCC-3 INCOMER-2 CB-KW METER READING	AI																
E415M3BPTV1	415V MCC-3 BUS PT -1 - VOLTAGE R PHASE	AI																
E415M3BPTV2	415V MCC-3 BUS PT -2 - VOLTAGE R PHASE	AI																
E415M1IC1CS	415V MCC-1 - INCOMER-1 - CB CLOSE	DI																
E415M1IC1ON	415V MCC-1 - INCOMER-1 - CB OPEN	DI																
E415M1IC1RC	415V MCC-1 - INCOMER-1 - CB RTC	DI																
E415M1IC1TC	415V MCC-1 - INCOMER-1 - CB TRIP CIRCUIT TROUBLE	DI																
E415M1IC2CS	415V MCC-1 - INCOMER-2 - CB CLOSE	DI																
E415M1IC2ON	415V MCC-1 - INCOMER-2 - CB OPEN	DI																
E415M1IC2RC	415V MCC-1 - INCOMER-2 - CB RTC	DI																
E415M1IC2TC	415V MCC-1 - INCOMER-2 - CB TRIP CIRCUIT TROUBLE	DI																
E415M1BC1CS	415V MCC-1 - BUS COUPLER-1 - CB CLOSE	DI																
E415M1BC1ON	415V MCC-1 - BUS COUPLER-1 - CB OPEN	DI																
E415M1BC1RC	415V MCC-1 - BUS COUPLER-1 - CB RTC	DI																
E415M1BC1TC	415V MCC-1 - BUS COUPLER-1 - CB TRIP CIRCUIT TROUBLE	DI																
E415M1BC1DC	415V MCC-1 - BUS COUPLER-1 - DC FAIL	DI																

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E415M2IC1CS	415V MCC-2 - INCOMER-1 - CB CLOSE	DI																
E415M2IC1ON	415V MCC-2 - INCOMER-1 - CB OPEN	DI																
E415M2IC1RC	415V MCC-2 - INCOMER-1 - CB RTC	DI																
E415M2IC1TC	415V MCC-2 - INCOMER-1 - CB TRIP CIRCUIT TROUBLE	DI																
E415M2IC2CS	415V MCC-2 - INCOMER-2 - CB CLOSE	DI																
E415M2IC2ON	415V MCC-2 - INCOMER-2 - CB OPEN	DI																
E415M2IC2RC	415V MCC-2 - INCOMER-2 - CB RTC	DI																
E415M2IC2TC	415V MCC-2 - INCOMER-2 - CB TRIP CIRCUIT TROUBLE	DI																
E415M2BC1CS	415V MCC-2 - BUS COUPLER-1 - CB CLOSE	DI																
E415M2BC1ON	415V MCC-2 - BUS COUPLER-1 - CB OPEN	DI																
E415M2BC1RC	415V MCC-2 - BUS COUPLER-1 - CB RTC	DI																
E415M2BC1TC	415V MCC-2 - BUS COUPLER-1 - CB TRIP CIRCUIT TROUBLE	DI																
E415M2BC1DC	415V MCC-2 - BUS COUPLER-1 - DC FAIL	DI																
E415M3IC1CS	415V MCC-3 - INCOMER-1 - CB CLOSE	DI																
E415M3IC1ON	415V MCC-3 - INCOMER-1 - CB OPEN	DI																
E415M3IC1RC	415V MCC-3 - INCOMER-1 - CB RTC	DI																
E415M3IC1TC	415V MCC-3 - INCOMER-1 - CB TRIP CIRCUIT TROUBLE	DI																
E415M3IC2CS	415V MCC-3 - INCOMER-2 - CB CLOSE	DI																
E415M3IC2ON	415V MCC-3 - INCOMER-2 - CB OPEN	DI																
E415M3IC2RC	415V MCC-3 - INCOMER-2 - CB RTC	DI																
E415M3IC2TC	415V MCC-3 - INCOMER-2 - CB TRIP CIRCUIT TROUBLE	DI																
E415M3BC1CS	415V MCC-3 - BUS COUPLER-1 - CB CLOSE	DI																
E415M3BC1ON	415V MCC-3 - BUS COUPLER-1 - CB OPEN	DI																
E415M3BC1RC	415V MCC-3 - BUS COUPLER-1 - CB RTC	DI																
E415M3BC1TC	415V MCC-3 - BUS COUPLER-1 - CB TRIP CIRCUIT TROUBLE	DI																
E415M3BC1DC	415V MCC-3 - BUS COUPLER-1 - DC FAIL	DI																
1-TBPM-OPNC-01	CEP-A MOTOR START CMD	DO																
1-TBPM-CLSC-01	CEP-A MOTOR STOP CMD	DO																
1-EPB-TBPM-01	CEP-A MOTOR EMERENGECY STOP PUSH BUTTION FBK	DI																
1-MDF-TBPM-01	CEP-A MOTOR MCC DISTURBANCE FBK	DI																
1-ROF-TBPM-01	CEP-A MOTOR RUN/ON FBK	DI																
1-RSF-TBPM-01	CEP-A MOTOR REMOTE SELECTION FBK	DI																
1-CFB-TBPM-01	CEP-A MOTOR CURRENT FBK	AI																
1-TRF-TBPM-01	CEP-A MOTOR TRIPPED FBK	DI																
1-TBPM-OPNC-02	CEP-B MOTOR START CMD	DO																

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1-TBPM-CLSC-02	CEP-B MOTOR STOP CMD	DO																
1-EPB-TBPM-02	CEP-B MOTOR EMERENGECY STOP PUSH BUTTION FBK	DI																
1-MDF-TBPM-02	CEP-B MOTOR MCC DISTURBANCE FBK	DI																
1-ROF-TBPM-02	CEP-B MOTOR RUN/ON FBK	DI																
1-RSF-TBPM-02	CEP-B MOTOR REMOTE SELECTION FBK	DI																
1-CFB-TBPM-02	CEP-B MOTOR CURRENT FBK	AI																
1-TRF-TBPM-02	CEP-B MOTOR TRIPPED FBK	DI																

Notes:
1. Data type (AI/AO/DI/DO) shall be specified with respect to DCS.
2. For Digital points (IOs) please indicate the alarm state.
3. Data Format : SIGN16, USIGN16, SIGN32, USIGN32, FLOAT32, LONG32, BOOL, LOGIC
4. Function code: 1-Coil Status, 2-Input Status, 3-Holding Register, 4- Input Register, 5-Force single Coil, 6-Preset Single Register, **as per Modbus Standard**

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