

पावर ग्रिड कार्पोरेशन आफ इंडिया लिमिटेड
केंद्रीय एसेट मैनेजमेंट
अंतर कार्यालय ज्ञापन

प्रेषक : वरिष्ठ महाप्रबंधक
(परिसम्पत्ति प्रबंधन)-
केन्द्रीय कार्यालय

सेवामें : मुख्य महाप्रबंधक (परिसम्पत्ति प्रबंधन)
(उ.क्षे.१/उ.क्षे.२/उ.क्षे.३/ उ.पू.क्षे./ ओड़िशा/
द.क्षे.१/द.क्षे.२/पू.क्षे.१/ पू.क्षे.२/प.क्षे.१/प.क्षे.२),

प्रति : कार्यपालक निदेशक
(उ.क्षे.१/उ.क्षे.२/उ.क्षे.३/ उ.पू.क्षे./ ओड़िशा/
द.क्षे.१/द.क्षे.२/पू.क्षे.१/ पू.क्षे.२/प.क्षे.१/प.क्षे.२),

संदर्भ : के.का./ए.एम./प्रोटेक्शन/2024-25/04


दिनांक : 12 मार्च 2024

Subject : Disturbance Recorder channel standardization- Revised Edition-02

As per NTAMC requirements for DR analysis and uniformity of disturbance record channels configuration of IEDs, CC(AM) has already standardized and circulated the signal list vide IOM Ref IOM: C/AM/C&P Dated 14.07.2015.

Based on various operational and commissioning experiences, it has been observed that the standard DR signal list of some of the IEDs DR were not included in the aforementioned IOM. Thus, the standard DR signal list has undergone a revision and the same is attached herewith for implementation.

As the said signal list has been prepared considering the availability of multiple channels in newer IEDs. It is recommended that implementation as per this signal list to be strictly ensured for the IEDs as per capacity of configurable DR channels of IEDs.


12.03.2024
(मनोज कु. झा)

विनम्र सूचना हेतु प्रेषित:

कार्यपालक निदेशक (परिसम्पत्ति प्रबंधन)

Disturbance Recorder(DR) STANDARD SIGNAL LIST

General Instructions	
S.No	Description of Comment
1	Main / Tie CB status Digital channels shall be made compulsory for Main-1 relays of lines and differential relays of Transformer/Reactor.
2	DR of Main-2 numerical relay should be configured with internal protection signals (Required for analysis) which would also be useful during any outages / shutdown / failures of Main-1 Relay. External signals are optional & the same may be configured through goose.
3	Analog channels over and above 8 channels and Digital Channels above 32 shall be made optional relevant to the station.
4	Any analog triggering may be enabled based on requirement as frequent triggering may exhaust the memory and due to FIFO functionality, the useful information(DR) could be lost.
5	Configuring of Alarms as digital inputs such as PLCC channel fail, Fan/Pump fail, etc., shall be avoided as frequent DR triggering are observed at many stations.
6	In case HV Main & HV Tie CT currents are available separately to the relays as input then summated current shall be made available for analog channels of DR.



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STANDARD DISTURBANCE RECORDER - LIST OF DOCUMENTS

Sl. No	Description	Revision	Remarks
1	Disturbance Recorder for Lines Distance relay for One & Half Breaker Scheme	Rev-02	
2	Disturbance Recorder for Lines Distance relay for DM/DMT Scheme	Rev-02	
3	Disturbance Recorder for Lines Differential relay for One & Half Breaker Scheme	Rev-02	
4	Disturbance Recorder for Lines Differential relay for DM/DMT Scheme	Rev-02	
5	Disturbance Recorder for 3-Ph. Auto Transformer for One & Half Breaker Scheme -Differential relay	Rev-02	
6	Disturbance Recorder for Differential relay in 765kV Transformer OR 3*1-Ph. 400/220/33kV Transformer for One & Half Breaker Scheme	Rev-02	
7	Disturbance Recorder for 3-Ph. Auto Transformer for One & Half Breaker Scheme -REF relay	Rev-02	
8	Disturbance Recorder for 1-Ph. Auto Transformer for One & Half Breaker Scheme -REF relay	Rev-02	
9	Disturbance Recorder for 3Ph & 1 Ph Transformer HV/IV Backup impedance relay in One & Half Breaker Scheme	Rev-02	
10	Disturbance Recorder for 3Ph & 1 Ph Transformer HV/IV Backup Overcurrent relay in One & Half Breaker Scheme	Rev-02	
11	Disturbance Recorder for Bus/line Reactor (3-Ph.) for One & Half Breaker Scheme for Differential Relay	Rev-02	
12	Disturbance Recorder for Bus/line Reactor (1-Ph.) for One & Half Breaker Scheme for Differential Relay	Rev-02	
13	Disturbance Recorder for Line Reactor (3-Ph.) for One & Half Breaker Scheme for Backup Impedance Relay	Rev-02	
14	Disturbance Recorder for Bus/Line Reactor (1-Ph.) for One & Half Breaker Scheme for Backup Impedance Relay	Rev-02	
15	Disturbance Recorder for Bus/Line Reactor (3-Ph.) for One & Half Breaker Scheme for REF Relay	Rev-02	
16	Disturbance Recorder for Bus/Line Reactor (1-Ph.) for One & Half Breaker Scheme for REF Relay	Rev-02	
17	Disturbance Recorder for One & Half Breaker Scheme of Centralised Busbar Protection relay	Rev-02	
18	Disturbance Recorder for DM/DMT Scheme of Centralised Busbar Protection relay	Rev-02	
19	Disturbance Recorder for One & Half Breaker Scheme of De-Centralised Busbar Protection relay	Rev-02	
20	Disturbance Recorder for DM/DMT Scheme of De-Centralised Busbar Protection relay	Rev-02	

Revision History

Rev.No	Description of Remarks	Date	Remarks
01	Initial Release	14.07.2015	
02	<p>1) In the existing list of IEDs, DR Signals has been added as per the O&M Requirement.</p> <p>a) Lines Distance relay for 1 1/2 – For Main-1 & 2 relay having more than 32 channels, required internal signals has been included. b) Lines Distance relay for DM/DMT Scheme– For Main-1 & 2 relay having more than 32 channels, required internal signals has been included. c) 3-Ph. Auto Transformer for One & Half Breaker Scheme - For Differential relay having more than 32 channels, required internal signals have been included & Individual current measurement points has been included in the DR. d) Differential relay in 765kV Transformer OR 3*1-Ph. 400/220/33kV Transformer for One & Half Breaker Scheme - For Differential relay having more than 32 channels, required internal signals have been included & Individual current measurement points has been included in the DR. e) Bus/line Reactor (3-Ph.) for One & Half Breaker Scheme for Differential Relay- For Differential relay having more than 32 channels, required internal signals have been included & Individual current measurement points has been included in the DR. f) Bus/Line Reactor (3-Ph.) for One & Half Breaker Scheme for Backup Impedance Relay - LR Switchable LBB operated & NGR associated signals has been included in the DR. g) Bus/Line Reactor (1-Ph.) for One & Half Breaker Scheme for Backup Impedance Relay- - LR Switchable LBB operated & NGR associated signals has been included in the DR.</p> <p>2) New Protection IEDs - Disturbance recorder signal list for following IEDs has been included.</p> <p>a) Lines Differential relay for One & Half Breaker Scheme b) Lines Differential relay for DM/DMT Scheme c) 3-Ph. Auto Transformer for One & Half Breaker Scheme -REF relay d) 1-Ph. Auto Transformer for One & Half Breaker Scheme -REF relay e) 3Ph & 1 Ph Transformer HV/IV Backup impedance relay in One & Half Breaker Scheme f) 3Ph & 1 Ph Transformer HV/IV Backup Overcurrent relay in One & Half Breaker Scheme g) Bus/line Reactor (1-Ph.) for One & Half Breaker Scheme for Differential Relay h) Bus/Line Reactor (3-Ph.) for One & Half Breaker Scheme for REF Relay i) Bus/Line Reactor (1-Ph.) for One & Half Breaker Scheme for REF Relay j) One & Half Breaker Scheme of Centralised Busbar Protection relay k) DM/DMT Scheme of Centralised Busbar Protection relay l) One & Half Breaker Scheme of De-Centralised Busbar Protection relay m) DM/DMT Scheme of De-Centralised Busbar Protection relay</p>	16.01.2024	

01. Disturbance Recorder for Lines Distance relay for One & Half Breaker Scheme

MAIN-1/MAIN-2

A	CONFIGURATION OF ANALOG CHANNELS	
S.No.	Channel Description	Standardized Channel Name
1	R PHASE CURRENT	I-R PH.
2	Y PHASE CURRENT	I-Y PH.
3	B PHASE CURRENT	I-B PH.
4	NEUTRAL CURRENT	I-N PH.
5	R PHASE VOLTAGE	V-R PH.
6	Y PHASE VOLTAGE	V-Y PH.
7	B PHASE VOLTAGE	V-B PH.
8	NEUTRAL VOLTAGE	V-N PH.
9	MUTUAL CURRENT	I-M PH.

MAIN-1/MAIN-2

B	CONFIGURATION OF DIGITAL CHANNELS - IED WITH 16 DR INPUT				
S.No.	DIGITAL CHANNELS	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M CB_RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M CB_YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M CB_BO	Y	
4	TIE CB R-PHASE OPEN	TIE_CB_R_OPEN	T CB_RO	Y	
5	TIE CB Y-PHASE OPEN	TIE_CB_Y_OPEN	T CB_YO	Y	
6	TIE CB B-PHASE OPEN	TIE_CB_B_OPEN	T CB_BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	
9	AUTO RECLOSE OPTD M/T CB	M/T_CB_A/R_OPTD	M/TCBAR	Y	
10	MAIN1/2 CARRIER RECEIVE	MAIN1/2_CARR_REC	M1/2_CR	N	
11	MAIN 1/2 DEF OPTD	DEF_OPD	DEF_OPD	Y	
12	DT RECEIVE CHANNEL-1/2	DT_REC_CH-1/2	DTRC1/2	Y	
13	OVER VOLTAGE STAGE-1/2 OPERATED	O/V_STG1/2_OPTD	OVST1/2	Y	
14	STUB/TEED/SOTF OPERATED	ST_TEE_SOTF_OPTD	STF_OPD	Y	
15	BUSBAR OPERATED (M1/M2)	BUSBAR_OPTD	BB_OPD	Y	
16	MAIN/TIE CB LBB OPERATED	M/T_LBB_OPTD	M/T_LBB	Y	

MAIN-1

C	CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT				
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M CB_RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M CB_YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M CB_BO	Y	
4	TIE CB R-PHASE OPEN	TIE_CB_R_OPEN	T CB_RO	Y	
5	TIE CB Y-PHASE OPEN	TIE_CB_Y_OPEN	T CB_YO	Y	
6	TIE CB B-PHASE OPEN	TIE_CB_B_OPEN	T CB_BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	MAIN-2
9	AUTO RECLOSE OPTD MAIN CB	MAIN_CB_A/R_OPTD	M CB_AR	Y	
10	MAIN CB AR LOCKOUT	MAIN_CB_AR_LO	MCB_AR_LO	N	
11	AUTO RECLOSE OPTD TIE CB	TIE_CB_A/R_OPTD	T CB_AR	Y	
12	TIE CB AR LOCKOUT	TIE_CB_AR_LO	AR_L/O	N	
13	MAIN1/2 CARRIER RECEIVE	MAIN1/2_CARR_REC	M1/2_CR	N	MAIN-1/2
14	DT RECEIVE CHANNEL-1/2	DT_REC_CH1/2	DTRC1/2	Y	
15	3 PH. GROUP A/B OPERATED	3PH_GR_A/B_OPTD	GRA/B_OPD	Y	
16	OVER VOLTAGE STAGE-1 OPERATED	O/V_STG1_OPTD	O/V_ST1	Y	
17	OVER VOLTAGE STAGE-2 OPERATED	O/V_STG2_OPTD	O/V_ST2	Y	
18	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
19	STUB/TEED OPERATED	STUB_OPTD	SB_OPD	Y	
20	BUSBAR OPERATED (M1/M2)	BUSBAR_OPTD	BB_OPD	Y	
21	MAIN/TIE LBB OPERATED	M/T_LBB_OPTD	M/T_LBB	Y	
22	MAIN 1 ZONE-1 OPTD.	MAIN1_Z1_OPTD	M1Z1_OP	Y	
23	MAIN 1 ZONE-2 START	MAIN1_Z2_START	M1Z2_ST	N	
24	MAIN 1 ZONE-2 OPTD.	MAIN1_Z2_OPTD	M1Z2_OP	Y	
25	MAIN 1 ZONE-3 START	MAIN1_Z3_START	M1Z3_ST	N	
26	MAIN 1 ZONE-3 OPTD.	MAIN1_Z3_OPTD	M1Z3_OP	Y	
27	MAIN 1 REVERSE ZONE OPTD	MAIN1_ZR_OPTD	M1ZR_OP	Y	
28	MAIN 1/2 SOTF OPTD	M1/2_SOTF_OPD	M12SOTF	Y	
29	MAIN 1/2 DEF OPTD	DEF_OPD	DEF_OPD	Y	
30	MAIN1/2 CARR. SEND	M1/2_CARR_SEND	M12CRSD	N	
31	DIRECT TRIP SEND	DIR_TR_SEND	DT_SEND	Y	
32	CARRIER AIDED TRIP	CARR_AID_TRIP	CAR_AID	Y	
33	OVER VOLTAGE STAGE-1 START	O/V_STG1_ST	OV_ST1_ST	Y	MORE THAN 32 CHANNELS
34	SOTF INITIATION	SOTF_INITIATION	SOTF_INIT	N	MORE THAN 32 CHANNELS
35	VOLTAGE EXTENDED FROM REMOTE(ALL POLE DEAD)	VOL_EXT_REMOTE	VOL_EXT_R	Y	MORE THAN 32 CHANNELS
36	STUB ENABLE(LINE ISO OPEN)	STUB_ENABLE	STUB_ENA	N	MORE THAN 32 CHANNELS
37	DEF START	DEF_START	DEF_ST	N	MORE THAN 32 CHANNELS
38	PREP 3PH TRIP MAIN/TIE	PREP_3PH_TR_M/T	PR3P_TR	N	MORE THAN 32 CHANNELS

01. Disturbance Recorder for Lines Distance relay for One & Half Breaker Scheme

39	VT FUSE FAIL ALARM	VT_FUS_FAIL_M1	VT_FF_M1	N	MORE THAN 32 CHANNELS
40	WEAK END FEED TRIP(IF APPLICABLE)	WEAK_FEED_TRIP	WK_ED_TR	Y	MORE THAN 32 CHANNELS
41	MAIN 1 REVERSE ZONE START	MAIN1_ZR_START	M1ZR_ST	N	MORE THAN 32 CHANNELS
42	OPTIONAL				MORE THAN 32 CHANNELS

MAIN-2

D	CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT				
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M CB_RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M CB_YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M CB_BO	Y	
4	TIE CB R-PHASE OPEN	TIE_CB_R_OPEN	T CB_RO	Y	
5	TIE CB Y-PHASE OPEN	TIE_CB_Y_OPEN	T CB_YO	Y	
6	TIE CB B-PHASE OPEN	TIE_CB_B_OPEN	T CB_BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	MAIN-1
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	
9	MAIN 2 ZONE-1 OPTD.	MAIN2_Z1_OPTD	M2Z1_OP	Y	
10	MAIN 2 ZONE-2 START	MAIN2_Z2_START	M2Z2_ST	N	
11	MAIN 2 ZONE-2 OPTD.	MAIN2_Z2_OPTD	M2Z2_OP	Y	
12	MAIN 2 ZONE-3 START	MAIN2_Z3_START	M2Z3_ST	N	
13	MAIN 2 ZONE-3 OPTD.	MAIN2_Z3_OPTD	M2Z3_OP	Y	
14	MAIN 2 REVERSE ZONE START	MAIN2_ZR_START	M2ZR_ST	N	
15	MAIN 2 REVERSE ZONE OPTD	MAIN2_ZR_OPTD	M2ZR_OP	Y	
16	POWER SWING DET.	PS DETECTED	PS_DET	N	
17	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
18	OVER VOLTAGE STAGE-1 START	O/V_STG1_ST	OV_ST1_ST	Y	
19	OVER VOLTAGE STAGE-1 OPERATED	O/V_STG1_OPTD	O/V_ST1	Y	
20	OVER VOLTAGE STAGE-2 OPERATED	O/V_STG2_OPTD	O/V_ST2	Y	
21	SOTF INITIATION	SOTF_INITIATION	SOTF_INIT	N	
22	MAIN 2 SOTF OPTD	MAIN2_SOTF_OPTD	M2SOTF	Y	
23	DEF START	DEF_START	DEF_ST	N	
24	MAIN 2 DEF OPTD	DEF_OPD	DEF_OPD	Y	
25	DIRECT TRIP SEND	DIR_TR_SEND	DT_SEND	Y	
26	STUB ENABLE(LINE ISO OPEN)	STUB_ENABLE	STUB_ENA	N	
27	MAIN 2 STUB OPTD	STUB_OPD	STUB_OPD	Y	
28	MAIN/TIE CB POLE DISCREPANCY	M/T_CB_POLE_DISC	M/T_PLDSC	N	
29	CARRIER AIDED TRIP	CAR_AID_TRP	CAR_TRP	Y	
30	MAIN-2 VT FUSE FAIL	VT_FUS_FAIL_M2	VT_FF_M2	N	
31	MAIN-2 CARRIER RECEIVE	MAIN2_CARR_REC	M2_CR_RC	N	
32	VOLTAGE EXTENDED FROM REMOTE(ALL POLE DEAD)	VOL_EXT_REMOTE	VOL_EXT_R	Y	
33	PREP 3PH TRIP MAIN/TIE	PREP_3PH_TR_M/T	PR3P_TR	N	MORE THAN 32 CHANNELS
34	WEAK END FEED TRIP(IF APPLICABLE)	WEAK_FEED_TRIP	WK_ED_TR	Y	MORE THAN 32 CHANNELS
35	MAIN 2 REVERSE ZONE START	MAIN2_ZR_START	M2ZR_ST	N	MORE THAN 32 CHANNELS
36	OPTIONAL				MORE THAN 32 CHANNELS
37	OPTIONAL				MORE THAN 32 CHANNELS
38	OPTIONAL				MORE THAN 32 CHANNELS
39	OPTIONAL				MORE THAN 32 CHANNELS
40	OPTIONAL				MORE THAN 32 CHANNELS
41	OPTIONAL				MORE THAN 32 CHANNELS
42	OPTIONAL				MORE THAN 32 CHANNELS

Note: Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

02. Disturbance Recorder for Lines Distance relay for DM/DMT Scheme

MAIN-1/MAIN-2

A CONFIGURATION OF ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name
1	R Phase Current	I-R PH.
2	Y Phase Current	I-Y PH.
3	B Phase Current	I-B PH.
4	Neutral Current	I-N PH
5	R Phase Voltage	V-R PH.
6	Y Phase Voltage	V-Y PH.
7	B Phase Voltage	V-B PH.
8	NEUTRAL VOLTAGE	V-N PH
9	MUTUAL CURRENT	I-M PH

MAIN-1/MAIN-2

B CONFIGURATION OF DIGITAL CHANNELS - IED WITH 16 DR INPUT					
S.No.	DIGITAL CHANNELS	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M_CB_RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M_CB_YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M_CB_BO	Y	
4	TBC CB R-PHASE OPEN	TBC_CB_R_OPEN	T_CB_RO	Y	
5	TBC CB Y-PHASE OPEN	TBC_CB_Y_OPEN	T_CB_YO	Y	
6	TBC CB B-PHASE OPEN	TBC_CB_B_OPEN	T_CB_BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	
9	AUTO RECLOSE OPTD M/T CB	M/T_CB_A/R_OPTD	M/TCBAR	Y	
10	MAIN1/2 CARRIER RECEIVE	MAIN1/2_CARR_REC	M1/2_CR	N	
11	MAIN 1/2 DEF OPTD	DEF_OPD	DEF_OPD	Y	
12	DT RECEIVE CHANNEL-1/2	DT_REC_CH-1/2	DTRC1/2	Y	
13	OVER VOLTAGE STAGE-1/2 OPERATED	O/V_STG1/2_OPTD	OVST1/2	Y	
14	SOTF OPERATED	SOTF_OPTD	STF_OPD	Y	
15	BUSBAR OPERATED (M1/M2)	BUSBAR_OPTD	BB_OPD	Y	
16	MAIN/TBC CB LBB OPERATED	M/T_LBB_OPTD	M/T_LBB	Y	

MAIN-1

C CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M_CB_RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M_CB_YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M_CB_BO	Y	
4	TBC CB R-PHASE OPEN	TBC_CB_R_OPEN	T_CB_RO	Y	
5	TBC CB Y-PHASE OPEN	TBC_CB_Y_OPEN	T_CB_YO	Y	
6	TBC CB B-PHASE OPEN	TBC_CB_B_OPEN	T_CB_BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	
9	AUTO RECLOSE OPTD MAIN CB	MAIN_CB_A/R_OPTD	M_CB_AR	Y	
10	MAIN CB AR LOCKOUT	MAIN_CB_AR_LO	MCB_AR_LO	N	
11	AUTO RECLOSE OPTD TBC CB	TBC_CB_A/R_OPTD	T_CB_AR	Y	
12	TBC CB AR LOCKOUT	TBC_CB_A/R_LO	AR_L/O	N	
13	MAIN1/2 CARRIER RECEIVE	MAIN1/2_CARR_REC	M1/2_CR	N	
14	DT RECEIVE CHANNEL-1/2	DT_REC_CH1/2	DTRC1/2	Y	
15	3 PH. GROUP A/B OPERATED	3PH_GR_A/B_OPTD	GRA/B_OPD	Y	
16	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
17	MAIN-1 VT FUSE FAIL	VT_FUS_FAIL_M1	VT_FF_M1	N	
18	BUSBAR OPERATED (M1/M2)	BUSBAR_OPTD	BB_OPD	Y	
19	MAIN/TBC LBB OPERATED	M/T_LBB_OPTD	M/T_LBB	Y	
20	MAIN 1 ZONE-1 OPTD.	MAIN1_Z1_OPTD	M1Z1_OP	Y	
21	MAIN 1 ZONE-2 START	MAIN1_Z2_START	M1Z2_ST	N	
22	MAIN 1 ZONE-2 OPTD.	MAIN1_Z2_OPTD	M1Z2_OP	Y	
23	MAIN 1 ZONE-3 START	MAIN1_Z3_START	M1Z3_ST	N	
24	MAIN 1 ZONE-3 OPTD.	MAIN1_Z3_OPTD	M1Z3_OP	Y	
25	MAIN 1 REVERSE ZONE OPTD	MAIN1_ZR_OPTD	M1ZR_OP	Y	
26	MAIN 1/2 SOTF OPTD	M1/2_SOTF_OPD	M12SOTF	Y	
27	MAIN 1/2 DEF OPTD	DEF_OPD	DEF_OPD	Y	
28	MAIN1/2 CARR. SEND	M1/2_CARR_SEND	M12CRSD	N	
29	DIRECT TRIP SEND	DIR_TR_SEND	DT_SEND	Y	
30	CARRIER AIDED TRIP	CARR_AID_TRIP	CAR_AID	Y	

02. Disturbance Recorder for Lines Distance relay for DM/DMT Scheme

31	SOTF INITIATION	SOTF_INITIATION	SOTF_INIT	N	MORE THAN 32 CHANNELS
32	VT FUSE FAIL ALARM	VT_FUS_FAIL_M1	VT_FF_M1	N	MORE THAN 32 CHANNELS
33	VOLTAGE EXTENDED FROM REMOTE(ALL POLE DEAD)	VOL_EXT_REMOTE	VOL_EXT_R	Y	MORE THAN 32 CHANNELS
34	DEF START	DEF_START	DEF_ST	N	MORE THAN 32 CHANNELS
35	PREP 3PH TRIP MAIN/TIE	PREP 3PH TR M/T	PR3P_TR	N	MORE THAN 32 CHANNELS
36	WEAK END FEED TRIP(IF APPLICABLE)	WEAK_FEED_TRIP	WK_ED_TR	Y	MORE THAN 32 CHANNELS
37	OVER VOLTAGE STAGE-1 START	O/V_STG1_ST	OV_ST1_ST	Y	MORE THAN 32 CHANNELS
38	OVER VOLTAGE STAGE-1 OPERATED	O/V_STG1_OPTD	O/V_ST1	Y	MORE THAN 32 CHANNELS
39	OVER VOLTAGE STAGE-2 OPERATED	O/V_STG2_OPTD	O/V_ST2	Y	MORE THAN 32 CHANNELS
40	MAIN 1 REVERSE ZONE START	MAIN1_ZR_START	M1ZR_ST	N	MORE THAN 32 CHANNELS

MAIN-2

D CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M_CB_RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M_CB_YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M_CB_BO	Y	
4	TBC CB R-PHASE OPEN	TIE_CB_R_OPEN	T_CB_RO	Y	
5	TBC CB Y-PHASE OPEN	TIE_CB_Y_OPEN	T_CB_YO	Y	
6	TBC CB B-PHASE OPEN	TIE_CB_B_OPEN	T_CB_BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	
9	MAIN 2 ZONE-1 OPTD.	MAIN2_Z1_OPTD	M2Z1_OP	Y	
10	MAIN 2 ZONE-2 START	MAIN2_Z2_START	M2Z2_ST	N	
11	MAIN 2 ZONE-2 OPTD.	MAIN2_Z2_OPTD	M2Z2_OP	Y	
12	MAIN 2 ZONE-3 START	MAIN2_Z3_START	M2Z3_ST	N	
13	MAIN 2 ZONE-3 OPTD.	MAIN2_Z3_OPTD	M2Z3_OP	Y	
14	MAIN 2 REVERSE ZONE START	MAIN2_ZR_START	M2ZR_ST	N	
15	MAIN 2 REVERSE ZONE OPTD	MAIN2_ZR_OPTD	M2ZR_OP	Y	
16	POWER SWING DET.	PS DETECTED	PS_DET	N	
17	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
18	SOTF INITIATION	SOTF_INITIATION	SOTF_INIT	N	
19	MAIN 2 SOTF OPTD	MAIN2_SOTF_OPTD	M2SOTF	Y	
20	DEF START	DEF_START	DEF_ST	N	
21	MAIN 2 DEF OPTD	DEF_OPD	DEF_OPD	Y	
22	DIRECT TRIP SEND	DIR_TR_SEND	DT_SEND	Y	
23	MAIN/TIE CB POLE DISCREPANCY	M/T_CB_POLE_DISC	M/T_PLDSC	N	
24	CARRIER AIDED TRIP	CAR_AID_TRP	CAR_TRP	Y	
25	MAIN-2 VT FUSE FAIL	VT_FUS_FAIL_M2	VT_FF_M2	N	
26	MAIN-2 CARRIER RECEIVE	MAIN2_CARR_REC	M2_CR_RC	N	
27	VOLTAGE EXTENDED FROM REMOTE(ALL POLE DEAD)	VOL_EXT_REMOTE	VOL_EXT_R	Y	
28	PREP 3PH TRIP MAIN/TIE	PREP 3PH TR M/T	PR3P_TR	N	
29	OVER VOLTAGE STAGE-1 START	O/V_STG1_ST	OV_ST1_ST	Y	
30	OVER VOLTAGE STAGE-1 OPERATED	O/V_STG1_OPTD	O/V_ST1	Y	
31	OVER VOLTAGE STAGE-2 OPERATED	O/V_STG2_OPTD	O/V_ST2	Y	
32	WEAK END FEED TRIP(IF APPLICABLE)	WEAK_FEED_TRIP	WK_ED_TR	Y	
33	MAIN 2 REVERSE ZONE START	MAIN2_ZR_START	M2ZR_ST	N	

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

03. Disturbance Recorder for Lines Differential relay for One & Half Breaker Scheme

MAIN-1/MAIN-2

A	CONFIGURATION OF ANALOG CHANNELS	
S.No.	Channel Description	Standardized Channel Name
1	LOCAL- R PHASE CURRENT	I-R PH.
2	LOCAL- Y PHASE CURRENT	I-Y PH.
3	LOCAL- B PHASE CURRENT	I-B PH.
4	NEUTRAL CURRENT	I-N PH.
5	REMOTE- R PHASE CURRENT	REM I-R PH.
6	REMOTE- Y PHASE CURRENT	REM I-Y PH.
7	REMOTE- B PHASE CURRENT	REM I-B PH.
8	R PHASE VOLTAGE	V-R PH.
9	Y PHASE VOLTAGE	V-Y PH.
10	B PHASE VOLTAGE	V-B PH.
11	NEUTRAL VOLTAGE	V-N PH
12	R PHASE DIFFERENTIAL CURRENT	IR DIFF
13	Y PHASE DIFFERENTIAL CURRENT	IY DIFF
14	B PHASE DIFFERENTIAL CURRENT	IB DIFF
15	R PHASE BIAS CURRENT	IR BIAS
16	Y PHASE BIAS CURRENT	IY BIAS
17	B PHASE BIAS CURRENT	IB BIAS
18	MUTUAL CURRENT	I-M PH

MAIN-1

B	CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT				
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M CB RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M CB YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M CB BO	Y	
4	TIE CB R-PHASE OPEN	TIE_CB_R_OPEN	T CB RO	Y	
5	TIE CB Y-PHASE OPEN	TIE_CB_Y_OPEN	T CB YO	Y	
6	TIE CB B-PHASE OPEN	TIE_CB_B_OPEN	T CB BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	
9	DIFFERENTIAL OPTD	DIFF_OPTD	DIFF_OPD	Y	
10	DIFFERENTIAL BLOCK	DIFF_BLOCK	DIFF_BLK	N	
11	AUTO RECLOSE OPTD MAIN CB	MAIN_CB_A/R_OPTD	M CB AR	Y	
12	MAIN CB AR LOCKOUT	MAIN_CB_AR_LO	MCB_AR_LO	N	
13	AUTO RECLOSE OPTD TIE CB	TIE_CB_A/R_OPTD	T CB AR	Y	
14	TIE CB AR LOCKOUT	TIE_CB_A/R_LO	AR_L/O	N	
15	MAIN1/2 CARRIER RECEIVE	MAIN1/2_CARR_REC	M1/2_CR	N	
16	DT RECEIVE CHANNEL-1/2	DT_REC_CH1/2	DTRC1/2	Y	
17	3 PH. GROUP A/B OPERATED	3PH_GR_A/B_OPTD	GRA/B_OPD	Y	
18	OVER VOLTAGE STAGE-1 OPERATED	O/V_STG1_OPTD	O/V_ST1	Y	
19	OVER VOLTAGE STAGE-2 OPERATED	O/V_STG2_OPTD	O/V_ST2	Y	
20	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
21	STUB/TEED OPERATED	STUB_OPTD	SB_OPD	Y	Where ever Applicable
22	BUSBAR OPERATED (M1/M2)	BUSBAR_OPTD	BB_OPD	Y	
23	MAIN/TIE LBB OPERATED	M/T_LBB_OPTD	M/T_LBB	Y	
24	MAIN 1 ZONE-1 OPTD.	MAIN1_Z1_OPTD	M1Z1_OP	Y	
25	MAIN 1 ZONE-2 START	MAIN1_Z2_START	M1Z2_ST	N	
26	MAIN 1 ZONE-2 OPTD.	MAIN1_Z2_OPTD	M1Z2_OP	Y	
27	MAIN 1 ZONE-3 START	MAIN1_Z3_START	M1Z3_ST	N	
28	MAIN 1 ZONE-3 OPTD.	MAIN1_Z3_OPTD	M1Z3_OP	Y	
29	MAIN 1 REVERSE ZONE OPTD	MAIN1_ZR_OPTD	M1ZR_OP	Y	
30	MAIN 1/2 SOTF OPTD	M1/2_SOTF_OPD	M12SOTF	Y	
31	MAIN 1/2 DEF OPTD	DEF_OPD	DEF_OPD	Y	
32	MAIN1/2 CARR. SEND	M1/2_CARR_SEND	M12CRSD	N	
33	DIRECT TRIP SEND	DIR_TR_SEND	DT_SEND	Y	MORE THAN 32 CHANNELS
34	CARRIER AIDED TRIP	CARR_AID_TRIP	CAR_AID	Y	MORE THAN 32 CHANNELS
35	OVER VOLTAGE STAGE-1 START	O/V_STG1_ST	OV_ST1_ST	Y	MORE THAN 32 CHANNELS
36	SOTF INITIATION	SOTF_INITIATION	SOTF_INIT	N	MORE THAN 32 CHANNELS
37	VOLTAGE EXTENDED FROM REMOTE(ALL POLE DEAD)	VOL_EXT_REMOTE	VOL_EXT_R	Y	MORE THAN 32 CHANNELS
38	STUB ENABLE(LINE ISO OPEN)	STUB_ENABLE	STUB_ENA	N	MORE THAN 32 CHANNELS
39	DEF START	DEF_START	DEF_ST	N	MORE THAN 32 CHANNELS
40	PREP 3PH TRIP MAIN/TIE	PREP_3PH_TR_M/T	PR3P_TR	N	MORE THAN 32 CHANNELS
41	VT FUSE FAIL ALARM	VT_FUS_FAIL_M1	VT_FF_M1	N	MORE THAN 32 CHANNELS
42	DIFFERENTIAL INTERTRIP	DIFF_INTERTRIP	DIFF_ITR	Y	MORE THAN 32 CHANNELS
43	DIFFERENTIAL SIGNALLING FAIL	DIFF_COM_FAIL	COM_FAIL	N	MORE THAN 32 CHANNELS
44	DIFFERENTIAL 2ND HARMONICS	DIFF_2ND_BLK	DIFF_2ND	N	MORE THAN 32 CHANNELS
45	DIFFERENTIAL 5TH HARMONICS	DIFF_5TH_BLK	DIFF_5TH	N	MORE THAN 32 CHANNELS
46	WEAK END FEED TRIP(IF APPLICABLE)	WEAK_FEED_TRIP	WK_ED_TR	Y	MORE THAN 32 CHANNELS

03. Disturbance Recorder for Lines Differential relay for One & Half Breaker Scheme

47	MAIN 1 REVERSE ZONE START	MAIN1_ZR_START	M1ZR_ST	N	MORE THAN 32 CHANNELS
48	OPTIONAL				MORE THAN 32 CHANNELS
49	OPTIONAL				MORE THAN 32 CHANNELS

MAIN-2

C	CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT				
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M CB RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M CB YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M CB BO	Y	
4	TIE CB R-PHASE OPEN	TIE_CB_R_OPEN	T CB RO	Y	
5	TIE CB Y-PHASE OPEN	TIE_CB_Y_OPEN	T CB YO	Y	
6	TIE CB B-PHASE OPEN	TIE_CB_B_OPEN	T CB BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	
9	DIFFERENTIAL OPTD	DIFF_OPTD	DIFF_OPD	Y	
10	DIFFERENTIAL INTERTRIP	DIFF_INTERTRIP	DIFF_ITR	Y	
11	DIFFERENTIAL SIGNALLING FAIL	DIFF_COM_FAIL	COM_FAIL	N	
12	DIFFERENTIAL BLOCK	DIFF_BLOCK	DIFF_BLK	N	
13	MAIN 2 ZONE-1 OPTD.	MAIN2_Z1_OPTD	M2Z1_OP	Y	
14	MAIN 2 ZONE-2 START	MAIN2_Z2_START	M2Z2_ST	N	
15	MAIN 2 ZONE-2 OPTD.	MAIN2_Z2_OPTD	M2Z2_OP	Y	
16	MAIN 2 ZONE-3 START	MAIN2_Z3_START	M2Z3_ST	N	
17	MAIN 2 ZONE-3 OPTD.	MAIN2_Z3_OPTD	M2Z3_OP	Y	
18	MAIN 2 REVERSE ZONE START	MAIN2_ZR_START	M2ZR_ST	N	
19	MAIN 2 REVERSE ZONE OPTD	MAIN2_ZR_OPTD	M2ZR_OP	Y	
20	POWER SWING DET.	PS_DETECTED	PS_DET	N	
21	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
22	OVER VOLTAGE STAGE-1 START	O/V_STG1_ST	OV_ST1_ST	Y	
23	OVER VOLTAGE STAGE-1 OPERATED	O/V_STG1_OPTD	O/V_ST1	Y	
24	OVER VOLTAGE STAGE-2 OPERATED	O/V_STG2_OPTD	O/V_ST2	Y	
25	SOTF INITIATION	SOTF_INITIATION	SOTF_INIT	N	
26	MAIN 2 SOTF OPTD	MAIN2_SOTF_OPTD	M2SOTF	Y	
27	DEF START	DEF_START	DEF_ST	N	
28	MAIN 2 DEF OPTD	DEF_OPD	DEF_OPD	Y	
29	MAIN 2 STUB OPTD	STUB_OPD	STUB_OPD	Y	
30	CARRIER AIDED TRIP	CAR_AID_TRP	CAR_TRP	Y	MORE THAN 32 CHANNELS
31	MAIN-2 VT FUSE FAIL	VT_FUS_FAIL_M2	VT_FF_M2	N	MORE THAN 32 CHANNELS
32	MAIN-2 CARRIER RECEIVE	MAIN2_CARR_REC	M2_CR_RC	N	MORE THAN 32 CHANNELS
33	VOLTAGE EXTENDED FROM REMOTE(ALL POLE DEAD)	VOL_EXT_REMOTE	VOL_EXT_R	Y	MORE THAN 32 CHANNELS
34	PREP 3PH TRIP MAIN/TIE	PREP_3PH_TR_M/T	PR3P_TR	N	MORE THAN 32 CHANNELS
35	DIRECT TRIP SEND	DIR_TR_SEND	DT_SEND	Y	MORE THAN 32 CHANNELS
36	STUB ENABLE(LINE ISO OPEN)	STUB_ENABLE	STUB_ENA	N	MORE THAN 32 CHANNELS
37	MAIN/TIE CB POLE DISCREPANCY	M/T_CB_POLE_DISC	M/T_PLDSC	N	MORE THAN 32 CHANNELS
38	WEAK END FEED TRIP(IF APPLICABLE)	WEAK_FEED_TRIP	WK_ED_TR	Y	MORE THAN 32 CHANNELS
39	MAIN 2 REVERSE ZONE START	MAIN2_ZR_START	M2ZR_ST	N	MORE THAN 32 CHANNELS
40	OPTIONAL				MORE THAN 32 CHANNELS
41	OPTIONAL				MORE THAN 32 CHANNELS
42	OPTIONAL				MORE THAN 32 CHANNELS

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

04. Disturbance Recorder for Line Differential relay for DM/DMT Scheme

MAIN-1/MAIN-2

A CONFIGURATION OF ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name
1	LOCAL- R PHASE CURRENT	I-R PH.
2	LOCAL- Y PHASE CURRENT	I-Y PH.
3	LOCAL- B PHASE CURRENT	I-B PH.
4	NEUTRAL CURRENT	I-N PH.
5	REMOTE- R PHASE CURRENT	REM I-R PH.
6	REMOTE- Y PHASE CURRENT	REM I-Y PH.
7	REMOTE- B PHASE CURRENT	REM I-B PH.
8	R PHASE VOLTAGE	V-R PH.
9	Y PHASE VOLTAGE	V-Y PH.
10	B PHASE VOLTAGE	V-B PH.
11	NEUTRAL VOLTAGE	V-N PH.
12	R PHASE DIFFERENTIAL CURRENT	IR DIFF
13	Y PHASE DIFFERENTIAL CURRENT	IY DIFF
14	B PHASE DIFFERENTIAL CURRENT	IB DIFF
15	R PHASE BIAS CURRENT	IR BIAS
16	Y PHASE BIAS CURRENT	IY BIAS
17	B PHASE BIAS CURRENT	IB BIAS
18	MUTUAL CURRENT	I-M PH.

MAIN-1

B CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M_CB_RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M_CB_YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M_CB_BO	Y	
4	TBC CB R-PHASE OPEN	TBC_CB_R_OPEN	T_CB_RO	Y	
5	TBC CB Y-PHASE OPEN	TBC_CB_Y_OPEN	T_CB_YO	Y	
6	TBC CB B-PHASE OPEN	TBC_CB_B_OPEN	T_CB_BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	
9	DIFFERENTIAL OPTD	DIFF_OPTD	DIFF_OPD	Y	
10	DIFFERENTIAL BLOCK	DIFF_BLOCK	DIFF_BLK	N	
11	AUTO RECLOSE OPTD MAIN CB	MAIN_CB_A/R_OPTD	M_CB_AR	Y	
12	MAIN CB AR LOCKOUT	MAIN_CB_AR_LO	MCB_AR_LO	N	
13	AUTO RECLOSE OPTD TBC CB	TBC_CB_A/R_OPTD	T_CB_AR	Y	
14	TBC CB AR LOCKOUT	TBC_CB_A/R_LO	AR_L/O	N	
15	MAIN1/2 CARRIER RECEIVE	MAIN1/2_CARR_REC	M1/2_CR	N	
16	DT RECEIVE CHANNEL-1/2	DT_REC_CH1/2	DTRC1/2	Y	
17	3 PH. GROUP A/B OPERATED	3PH_GR_A/B_OPTD	GRA/B_OPD	Y	
18	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
19	MAIN-1 VT FUSE FAIL	VT_FUS_FAIL_M1	VT_FF_M1	N	
20	BUSBAR OPERATED (M1/M2)	BUSBAR_OPTD	BB_OPD	Y	
21	MAIN/TBC LBB OPERATED	M/T_LBB_OPTD	M/T_LBB	Y	
22	MAIN 1 ZONE-1 OPTD.	MAIN1_Z1_OPTD	M1Z1_OP	Y	
23	MAIN 1 ZONE-2 START	MAIN1_Z2_START	M1Z2_ST	N	
24	MAIN 1 ZONE-2 OPTD.	MAIN1_Z2_OPTD	M1Z2_OP	Y	
25	MAIN 1 ZONE-3 START	MAIN1_Z3_START	M1Z3_ST	N	
26	MAIN 1 ZONE-3 OPTD.	MAIN1_Z3_OPTD	M1Z3_OP	Y	
27	MAIN 1 REVERSE ZONE OPTD	MAIN1_ZR_OPTD	M1ZR_OP	Y	
28	MAIN 1/2 SOTF OPTD	M1/2_SOTF_OPD	M12SOTF	Y	
29	MAIN 1/2 DEF OPTD	DEF_OPD	DEF_OPD	Y	
30	MAIN1/2 CARR. SEND	M1/2_CARR_SEND	M12CRSD	N	
31	DIRECT TRIP SEND	DIR_TR_SEND	DT_SEND	Y	MORE THAN 32 CHANNELS
32	CARRIER AIDED TRIP	CARR_AID_TRIP	CAR_AID	Y	MORE THAN 32 CHANNELS
33	VT FUSE FAIL ALARM	VT_FUS_FAIL_M1	VT_FF_M1	N	MORE THAN 32 CHANNELS
34	DIFFERENTIAL INTERTRIP	DIFF_INTERTRIP	DIFF_ITR	Y	MORE THAN 32 CHANNELS
35	DIFFERENTIAL SIGNALLING FAIL	DIFF_COM_FAIL	COM_FAIL	N	MORE THAN 32 CHANNELS
36	SOTF INITIATION	SOTF_INITIATION	SOTF_INIT	N	MORE THAN 32 CHANNELS
37	VOLTAGE EXTENDED FROM REMOTE(ALL POLE DEAD)	VOL_EXT_REMOTE	VOL_EXT_R	Y	MORE THAN 32 CHANNELS
38	DEF START	DEF_START	DEF_ST	N	MORE THAN 32 CHANNELS
39	PREP_3PH_TRIP_MAIN/TBC	PREP_3PH_TR_M/T	PR3P_TR	N	MORE THAN 32 CHANNELS
40	OVER VOLTAGE STAGE-1 START	O/V_STG1_ST	OV_ST1_ST	Y	MORE THAN 32 CHANNELS
41	OVER VOLTAGE STAGE-1 OPERATED	O/V_STG1_OPTD	O/V_ST1	Y	MORE THAN 32 CHANNELS
42	OVER VOLTAGE STAGE-2 OPERATED	O/V_STG2_OPTD	O/V_ST2	Y	MORE THAN 32 CHANNELS
43	WEAK END FEED TRIP(IF APPLICABLE)	WEAK_FEED_TRIP	WK_ED_TR	Y	MORE THAN 32 CHANNELS
44	MAIN 1 REVERSE ZONE START	MAIN1_ZR_START	M1ZR_ST	N	MORE THAN 32 CHANNELS

MAIN-2

04. Disturbance Recorder for Line Differential relay for DM/DMT Scheme

C CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB R-PHASE OPEN	MAIN_CB_R_OPEN	M_CB_RO	Y	
2	MAIN CB Y-PHASE OPEN	MAIN_CB_Y_OPEN	M_CB_YO	Y	
3	MAIN CB B-PHASE OPEN	MAIN_CB_B_OPEN	M_CB_BO	Y	
4	TBC CB R-PHASE OPEN	TBC_CB_R_OPEN	T_CB_RO	Y	
5	TBC CB Y-PHASE OPEN	TBC_CB_Y_OPEN	T_CB_YO	Y	
6	TBC CB B-PHASE OPEN	TBC_CB_B_OPEN	T_CB_BO	Y	
7	MAIN1 TRIP	MAIN1_TRIP	M1_TRIP	Y	MAIN-1
8	MAIN2 TRIP	MAIN2_TRIP	M2_TRIP	Y	
9	DIFFERENTIAL OPTD	DIFF_OPTD	DIFF_OPD	Y	
10	DIFFERENTIAL INTERTRIP	DIFF_INTERTRIP	DIFF_ITR	Y	
11	DIFFERENTIAL SIGNALLING FAIL	DIFF_COM_FAIL	COM_FAIL	N	
12	DIFFERENTIAL BLOCK	DIFF_BLOCK	DIFF_BLK	N	
13	MAIN 2 ZONE-1 OPTD.	MAIN2_Z1_OPTD	M2Z1_OP	Y	
14	MAIN 2 ZONE-2 START	MAIN2_Z2_START	M2Z2_ST	N	
15	MAIN 2 ZONE-2 OPTD.	MAIN2_Z2_OPTD	M2Z2_OP	Y	
16	MAIN 2 ZONE-3 START	MAIN2_Z3_START	M2Z3_ST	N	
17	MAIN 2 ZONE-3 OPTD.	MAIN2_Z3_OPTD	M2Z3_OP	Y	
18	MAIN 2 REVERSE ZONE START	MAIN2_ZR_START	M2ZR_ST	N	
19	MAIN 2 REVERSE ZONE OPTD	MAIN2_ZR_OPTD	M2ZR_OP	Y	
20	POWER SWING DET.	PS_DETECTED	PS_DET	N	
21	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
22	SOTF INITIATION	SOTF_INITIATION	SOTF_INIT	N	
23	MAIN 2 SOTF OPTD	MAIN2_SOTF_OPTD	M2SOTF	Y	
24	DEF START	DEF_START	DEF_ST	N	
25	MAIN 2 DEF OPTD	DEF_OPTD	DEF_OPD	Y	
26	DIRECT TRIP SEND	DIR_TR_SEND	DT_SEND	Y	
27	CARRIER AIDED TRIP	CAR_AID_TRP	CAR_TRP	Y	
28	MAIN-2 VT FUSE FAIL	VT_FUS_FAIL_M2	VT_FF_M2	N	
29	MAIN-2 CARRIER RECEIVE	MAIN2_CARR_REC	M2_CR_RC	N	MORE THAN 32 CHANNELS
30	VOLTAGE EXTENDED FROM REMOTE(ALL POLE DEAD)	VOL_EXT_REMOTE	VOL_EXT_R	Y	MORE THAN 32 CHANNELS
31	PREP_3PH_TRIP_MAIN/TBC	PREP_3PH_TR_M/T	PR3P_TR	N	MORE THAN 32 CHANNELS
32	MAIN/TIE CB POLE DISCREPANCY	M/T_CB_POLE_DISC	M/T_PLDSC	N	MORE THAN 32 CHANNELS
33	OVER VOLTAGE STAGE-1 START	O/V_STG1_ST	OV_ST1_ST	Y	MORE THAN 32 CHANNELS
34	OVER VOLTAGE STAGE-1 OPERATED	O/V_STG1_OPTD	O/V_ST1	Y	MORE THAN 32 CHANNELS
35	OVER VOLTAGE STAGE-2 OPERATED	O/V_STG2_OPTD	O/V_ST2	Y	MORE THAN 32 CHANNELS
36	WEAK END FEED TRIP(IF APPLICABLE)	WEAK_FEED_TRIP	WK_ED_TR	Y	MORE THAN 32 CHANNELS
37	MAIN 2 REVERSE ZONE START	MAIN2_ZR_START	M2ZR_ST	N	MORE THAN 32 CHANNELS
38	OPTIONAL				MORE THAN 32 CHANNELS
39	OPTIONAL				MORE THAN 32 CHANNELS
40	OPTIONAL				MORE THAN 32 CHANNELS
41	OPTIONAL				MORE THAN 32 CHANNELS
42	OPTIONAL				MORE THAN 32 CHANNELS
Note :	Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.				

05. Disturbance Recorder for 3-Ph. Auto Transformer for One & Half Breaker Scheme - Differential relay

A	CONFIGURATION OF ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name	COMMENTS
1	HV MAIN - R Phase Current	HV_M_I-R PH	
2	HV MAIN - Y Phase Current	HV_M_I-Y PH	
3	HV MAIN - B Phase Current	HV_M_I-B PH	
4	HV MAIN - Neutral Current	HV_M_I-N PH	
5	HV TIE - R Phase Current	HV_T_I-R PH	IF AVAILABLE
6	HV TIE - Y Phase Current	HV_T_I-Y PH	IF AVAILABLE
7	HV TIE - B Phase Current	HV_T_I-B PH	IF AVAILABLE
8	HV TIE - Neutral Current	HV_T_I-N PH	IF AVAILABLE
9	IV R Phase Current	IV_M_I-R PH	
10	IV Y Phase Current	IV_M_I-Y PH	
11	IV B Phase Current	IV_M_I-B PH	
12	IV Neutral Current	IV_M_I-N PH	
13	IV R Phase Current	IV_T_I-R PH	IF AVAILABLE
14	IV Y Phase Current	IV_T_I-Y PH	IF AVAILABLE
15	IV B Phase Current	IV_T_I-B PH	IF AVAILABLE
16	IV Neutral Current	IV_T_I-N PH	IF AVAILABLE
17	R Phase DIFFERENTIAL Current (CALCULATED)	I-R DIFF	
18	Y Phase DIFFERENTIAL Current (CALCULATED)	I-Y DIFF	
19	B Phase DIFFERENTIAL Current (CALCULATED)	I-B DIFF	
20	R Phase BIAS Current (CALCULATED)	I-R BIAS	
21	Y Phase BIAS Current (CALCULATED)	I-Y BIAS	
22	B Phase BIAS Current (CALCULATED)	I-B BIAS	
23	HV R Ph Voltage	V-R PH HV	
24	HV Y Ph Voltage	V-Y PH HV	
25	HV B Ph Voltage	V-B PH HV	
26	LV R Phase Current	LV_I-R PH	IF AVAILABLE
27	LV Y Phase Current	LV_I-Y PH	IF AVAILABLE
28	LV B Phase Current	LV_I-B PH	IF AVAILABLE
29	LV Neutral Current	LV_I-N PH	IF AVAILABLE

B	CONFIGURATION OF DIGITAL CHANNELS - IED WITH 16 DR INPUT				
S.No.	DIGITAL CHANNELS	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB OPEN (HV SIDE)	HV_M_CB_OPEN	HV_MCBO	Y	
2	TIE CB OPEN (HV SIDE)	HV_T_CB_OPEN	HV_TCBO	Y	
3	MAIN CB OPEN (IV SIDE)	IV_M_CB_OPEN	IV_MCBO	Y	
4	TBC/TIE CB OPEN (IV SIDE)	IV_T_CB_OPEN	IV_TCBO	Y	
5	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
6	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
7	HV BACKUP PROTECTION OPERATED	HV_B/U_PROTN_OPTD	HVBUOPD	Y	
8	HV/IV OVER FLUXING OPERATED	HV/IV_O/F_OPTD	O/F_OPD	Y	
9	PRV TRIP	PRV_TRIP	PRV_TRP	Y	
10	OTI/WTI TRIP	OTI/WTI_TRIP	OT/WT_T	Y	
11	BUCHHOLZ/OSR TRIP	BUCH/OSR_TRIP	B_OSR_T	Y	
12	MAIN/TIE CB (HV SIDE) LBB OPTD.	M/T_HV_LBB	HV_LBB	Y	
13	MAIN/TBC CB (IV SIDE) LBB OPTD.	M/T_IV_LBB	IV_LBB	Y	
14	BUSBAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
15	HIGHSET OC/EF OPTD	DTOC_OPTD	DTOCOPD	Y	
16	3 PH. GROUP A/B OPERATED	3PH_GR_A/B_OPTD	GRA/B_OPD	Y	

C	CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT				
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	COMMENTS
1	MAIN CB OPEN (HV SIDE)	HV_M_CB_OPEN	HV_MCBO	Y	
2	TIE CB OPEN (HV SIDE)	HV_T_CB_OPEN	HV_TCBO	Y	
3	MAIN CB OPEN (IV SIDE)	IV_M_CB_OPEN	IV_MCBO	Y	
4	TIE/TBC CB OPEN (IV SIDE)	IV_T_CB_OPEN	IV_TCBO	Y	
5	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
6	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
7	HV OC/EF PROTECTION OPERATED	HV_BU_OCEF_OPTD	HVOCEFOP	Y	
8	IV OC/EF PROTECTION OPERATED	IV_BU_OCEF_OPTD	IVOCEFOP	Y	
9	HV BACKUP IMPEDANCE OPERATED	HV_B/U_IMP_OPTD	HVIMPOP	Y	
10	HV OVER FLUXING OPERATED	HV_OVERFLUX_OPTD	HVOFOPD	Y	
11	IV OVER FLUXING OPERATED	IV_OVERFLUX_OPTD	IVOFOPD	Y	
12	PRV TRIP	PRV_TRIP	PRV_TRP	Y	
13	WTI TRIP	WTI_TRIP	WTI_TR	Y	HV/IV/LV

05. Disturbance Recorder for 3-Ph. Auto Transformer for One & Half Breaker Scheme - Differential relay

14	SPR OPERATED	SPR_OPTD	SPR_OPTD	Y	
15	OTI TRIP	OTI_TRIP	OTI_TRP	Y	
16	BUCHHOLZ ALARM	BUCHHOLZ_ALRM	BCZ_ALM	Y	
17	BUCHHOLZ TRIP	BUCHHOLZ_TRIP	BCZ_TRP	Y	
18	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
19	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
20	MAIN CB (HV SIDE) LBB OPTD.	HV_MAIN_LBB_OPTD	H_M_LBB	Y	
21	MAIN CB (IV SIDE) LBB OPTD.	IV_MAIN_LBB_OPTD	I_M_LBB	Y	
22	TIE CB (HV SIDE) LBB OPTD.	HV_T_LBB_OPTD	H_T_LBB	Y	
23	TIE/TBC CB (IV SIDE) LBB OPTD.	IV_T_LBB_OPTD	I_T_LBB	Y	
24	BUSBAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
25	HIGHSET OC/EF OPTD	DTOC_OPTD	DTOCOPD	Y	IF APPLICABLE
26	OLTC OIL SURGE TRIP	OLTC_OIL_SGTR	OL_SR_TR	Y	
27	HV VT FUSE FAIL ALARM	HVVT_FUS_FAIL	HVVT_FF	N	
28	WTI ALARM	WTI_ALARM	WTI_AL	N	HV/IV/LV
29	OTI ALARM	OTI_ALARM	OTI_AL	N	
30	OVER LOAD ALARM	OL_ALARM	OL_AL	N	
31	2ND HARMONICS BLOCKING	2ND_HARM_BLK	2NDHRBK	N	
32	5TH HARMONICS BLOCKING	5TH_HARM_BLK	5THHRBK	N	
33	33KV OVERCURRENT OPTD (IF APPLICABLE)	LV_OC_OPTD	LV_OCOP	Y	MORE THAN 32 CHANNELS
34	33KV EARTHFAULT OPTD (IF APPLICABLE)	LV_EF_OPTD	LV_EFOP	Y	MORE THAN 32 CHANNELS
35	33KV NEUTRAL DISP OV OPTD (IF APPLICABLE)	LV_NV_OPTD	LV_NVOP	Y	MORE THAN 32 CHANNELS
36	33KV CB OPEN (IF APPLICABLE)	LV_CBOPEN	LV_CBOP	Y	MORE THAN 32 CHANNELS
37	33KV 86A/B OPTD (IF APPLICABLE)	LV_86A/B_OPD	LV_86OP	Y	MORE THAN 32 CHANNELS
38	OPTIONAL				MORE THAN 32 CHANNELS
39	OPTIONAL				MORE THAN 32 CHANNELS
40	OPTIONAL				MORE THAN 32 CHANNELS
41	OPTIONAL				MORE THAN 32 CHANNELS

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

**06. Disturbance Recorder for Differential relay in 765kV Transformer OR 3*1-Ph.
400/220/33kV Transformer for One & Half Breaker Scheme**

A	Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name	COMMENTS
1	HV MAIN - R Phase Current	HV_M I-R PH	
2	HV MAIN - Y Phase Current	HV_M I-Y PH	
3	HV MAIN - B Phase Current	HV_M I-B PH	
4	HV MAIN - Neutral Current	HV_M I-N PH	
5	HV TIE - R Phase Current	TV_M I-R PH	IF AVAILABLE
6	HV TIE - Y Phase Current	TV_M I-Y PH	IF AVAILABLE
7	HV TIE - B Phase Current	TV_M I-B PH	IF AVAILABLE
8	HV TIE - Neutral Current	TV_M I-N PH	IF AVAILABLE
9	IV R Phase Current	IV_M I-R PH	
10	IV Y Phase Current	IV_M I-Y PH	
11	IV B Phase Current	IV_M I-B PH	
12	IV Neutral Current	IV_M I-N PH	
13	IV R Phase Current	IV_T I-R PH	IF AVAILABLE
14	IV Y Phase Current	IV_T I-Y PH	IF AVAILABLE
15	IV B Phase Current	IV_T I-B PH	IF AVAILABLE
16	IV Neutral Current	IV_T I-N PH	IF AVAILABLE
17	R Phase DIFFERENTIAL Current (CALCULATED)	I-R DIFF	
18	Y Phase DIFFERENTIAL Current (CALCULATED)	I-Y DIFF	
19	B Phase DIFFERENTIAL Current (CALCULATED)	I-B DIFF	
20	R Phase BIAS Current (CALCULATED)	I-R BIAS	
21	Y Phase BIAS Current (CALCULATED)	I-Y BIAS	
22	B Phase BIAS Current (CALCULATED)	I-B BIAS	
23	HV R Ph Voltage	V-R PH HV	
24	HV Y Ph Voltage	V-Y PH HV	
25	HV B Ph Voltage	V-B PH HV	
26	LV R Phase Current	LV_I-R PH	IF AVAILABLE
27	LV Y Phase Current	LV_I-Y PH	IF AVAILABLE
28	LV B Phase Current	LV_I-B PH	IF AVAILABLE
29	LV Neutral Current	LV_I-N PH	IF AVAILABLE

B	CONFIGURATION OF DIGITAL CHANNELS				
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN HV	HV_M CB_OPEN	HV_MCBO	Y	
2	TIE CB OPEN HV	HV_T CB_OPEN	HV_TCBO	Y	
3	MAIN CB OPEN IV	IV_M CB_OPEN	IV_MCBO	Y	
4	TBC/TIE CB OPEN IV	IV_T CB_OPEN	IV_TCBO	Y	
5	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
6	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
7	HV OC/EF PROTECTION OPTD	HV_BU_PROTN_OPD	HVBUOP	Y	
8	IV OC/EF PROTECTION OPTD	IV_BU_PROTN_OPD	IVBUOP	Y	
9	HV BACKUP IMPEDANCE OPERATED	HV_B/U_IMP_OPTD	HVIMPOP	Y	
10	IV BACKUP IMPEDANCE OPERATED	IV_B/U_IMP_OPTD	IVIMPOP	Y	
11	HV OVER FLUXING START	IV_OVERFLUX_ST	IVOFST	N	
12	HV OVER FLUXING OPERATED	HV_OVERFLUX_OPTD	HVOFOPD	Y	
13	IV OVER FLUXING OPERATED	IV_OVERFLUX_OPTD	IVOFOPD	Y	
14	HV WTI TRIP R-PH.	HV_WTI_TR_R	HVWTT_R	Y	
15	HV WTI TRIP Y-PH.	HV_WTI_TR_Y	HVWTT_Y	Y	
16	HV WTI TRIP B-PH.	HV_WTI_TR_B	HVWTT_B	Y	
17	IV WTI TRIP R-PH.	IV_WTI_TR_R	IVWTT_R	Y	
18	IV WTI TRIP Y-PH.	IV_WTI_TR_Y	IVWTT_Y	Y	
19	IV WTI TRIP B-PH.	IV_WTI_TR_B	IVWTT_B	Y	
20	LV WTI TRIP R-PH.	LV_WTI_TR_R	LVWTT_R	Y	
21	LV WTI TRIP Y-PH.	LV_WTI_TR_Y	LVWTT_Y	Y	
22	LV WTI TRIP B-PH.	LV_WTI_TR_B	LVWTT_B	Y	
23	PRD-1/2 TRIP R Ph.	PRD1/2_TR_R	PRD12_R	Y	
24	PRD-1/2 TRIP Y Ph.	PRD1/2_TR_Y	PRD12_Y	Y	
25	PRD-1/2 TRIP B Ph.	PRD1/2_TR_B	PRD12_B	Y	
26	BUCHHOLZ-1/2 TRIP R Ph.	BCZ1/2_TR_R	BZ1/2_R	Y	
27	BUCHHOLZ-1/2 TRIP R Ph.	BCZ1/2_TR_Y	BZ1/2_Y	Y	
28	BUCHHOLZ-1/2 TRIP R Ph.	BCZ1/2_TR_B	BZ1/2_B	Y	
29	PRD OLTC HIGH PR. TRIP R PH.	PRD_OLTC_HIPR_R	OLT_P_R	Y	
30	PRD OLTC HIGH PR. TRIP Y PH.	PRD_OLTC_HIPR_Y	OLT_P_Y	Y	
31	PRD OLTC HIGH PR. TRIP B PH.	PRD_OLTC_HIPR_B	OLT_P_B	Y	
32	OLTC OIL SURGE TRIP R PH.	OLTC_OIL_SGTR_R	OSRTR_R	Y	
33	OLTC OIL SURGE TRIP Y PH.	OLTC_OIL_SGTR_Y	OSRTR_Y	Y	
34	OLTC OIL SURGE TRIP B PH.	OLTC_OIL_SGTR_B	OSRTR_B	Y	
35	SUDDEN PRESSURE TRIP R PH.	SDN_PR_TR_R	PRTR_R	Y	

**06. Disturbance Recorder for Differential relay in 765kV Transformer OR 3*1-Ph.
400/220/33kV Transformer for One & Half Breaker Scheme**

36	SUDDEN PRESSURE TRIP Y PH.	SDN_PR_TR_Y	PRTR_Y	Y	
37	SUDDEN PRESSURE TRIP B PH.	SDN_PR_TR_B	PRTR_B	Y	
38	OTI TRIP R PH.	OTI_TR_R	OTITR_R	Y	
39	OTI TRIP Y PH.	OTI_TR_Y	OTITR_Y	Y	
40	OTI TRIP B PH.	OTI_TR_B	OTITR_B	Y	
41	TOP OIL TRIP R-PH.	TOP_OIL_TR_R	TPOIL_R	Y	IF APPLICABLE
42	TOP OIL TRIP Y-PH.	TOP_OIL_TR_Y	TPOIL_Y	Y	IF APPLICABLE
43	TOP OIL TRIP B-PH.	TOP_OIL_TR_B	TPOIL_B	Y	IF APPLICABLE
44	DIRECT WDG. TEMP MONITOR TOP OIL R-PH.	DR_WDGTEMPPOIL_R	DWTTOLR	Y	IF APPLICABLE
45	DIRECT WDG. TEMP MONITOR TOP OIL Y-PH.	DR_WDGTEMPPOIL_Y	DWTTOLY	Y	IF APPLICABLE
46	DIRECT WDG. TEMP MONITOR TOP OIL B-PH.	DR_WDGTEMPPOIL_B	DWTTOLB	Y	IF APPLICABLE
47	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
48	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
49	MAIN CB (HV SIDE) LBB OPERATED	HV_MAIN_LBB_OPTD	H_M_LBB	Y	
50	MAIN CB (IV SIDE) LBB OPERATED	IV_MAIN_LBB_OPTD	I_M_LBB	Y	
51	TIE CB (HV SIDE) LBB OPERATED	HV_TIE_LBB_OPTD	H_T_LBB	Y	
52	TBC/TIE CB (IV SIDE) LBB OPTD	IV_T_LBB_OPTD	I_T_LBB	Y	
53	BUSBAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
54	DTOC OPTD	DTOC_OPTD	DTOCOPD	Y	IF APPLICABLE
55	HV VT FUSE FAIL ALARM	HVVT_FUS_FAIL	HVVT_FF	N	
56	WTI ALARM	WTI_ALARM	WTI_AL	N	
57	OTI ALARM	OTI_ALARM	OTI_AL	N	
58	OVER LOAD ALARM	OL_ALARM	OL_AL	N	
59	NEUTRAL CURRENT ALARM	NL_OC_ALM	N_OC_AL	Y	IF APPLICABLE
60	OPTIONAL				
61	OPTIONAL				
62	OPTIONAL				
63	OPTIONAL				
64	OPTIONAL				

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

07. Disturbance Recorder for 3-Ph. Auto Transformer for One & Half Breaker Scheme

-REF relay

A	Configuration of ANALOG CHANNELS	
S.No.	Channel Description	Standardized Channel Name
	High Impedance relay	
1	High Impedance Current	IREF
	Low Impedance relay	
2	Neutral Current	IN
3	3I0 Current	3I0
4	REF Differential Current	IREF-DIFF
5	REF Restraining Current	IREF-RES
	IV Overflux	
6	IV R Ph Voltage	V-R PH IV
7	IV Y Ph Voltage	V-Y PH IV
8	IV B Ph Voltage	V-B PH IV

B	Configuration of Digital Channels				
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN_HV	HV_M_CB_OPEN	HV_MCBO	Y	OPTIONAL
2	TIE CB OPEN_HV	HV_T_CB_OPEN	HV_TCBO	Y	OPTIONAL
3	MAIN CB OPEN_IV	IV_M_CB_OPEN	IV_MCBO	Y	OPTIONAL
4	TBC/TIE CB OPEN_IV	IV_T_CB_OPEN	IV_TCBO	Y	OPTIONAL
5	REF PROTECTION OPERATED	REF_OPTD	REF_OP	Y	
6	IV OVER FLUXING START	IV_OVERFLUX_ST	IVOFST	N	
7	IV OVER FLUXING OPERATED	IV_OVERFLUX_OPTD	IVOFOPD	Y	
8	IV VT FUSE FAIL ALARM	IVVT_FUS_FAIL	IVVT_FF	N	
9	MECHANICAL PROTECTION TRIPPING-1	MECH_TRIP1	MECHTR1	Y	AS PER SCHEME
10	MECHANICAL PROTECTION TRIPPING-2	MECH_TRIP2	MECHTR2	Y	AS PER SCHEME
11	MECHANICAL PROTECTION TRIPPING-3	MECH_TRIP3	MECHTR3	Y	AS PER SCHEME
12	MECHANICAL PROTECTION TRIPPING-4	MECH_TRIP4	MECHTR4	Y	AS PER SCHEME
13	MECHANICAL PROTECTION ALARM-1	MECH_ALM1	MECHAL1	Y	AS PER SCHEME
14	MECHANICAL PROTECTION ALARM-2	MECH_ALM2	MECHAL2	Y	AS PER SCHEME
15	MECHANICAL PROTECTION ALARM-3	MECH_ALM3	MECHAL3	Y	AS PER SCHEME
16	MECHANICAL PROTECTION ALARM-4	MECH_ALM4	MECHAL4	Y	AS PER SCHEME
17	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	AS PER SCHEME
18	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	AS PER SCHEME
19	OPTIONAL				
20	OPTIONAL				
21	OPTIONAL				
22	OPTIONAL				
23	OPTIONAL				
24	OPTIONAL				
25	OPTIONAL				
26	OPTIONAL				
27	OPTIONAL				
28	OPTIONAL				
29	OPTIONAL				
30	OPTIONAL				
31	OPTIONAL				
32	OPTIONAL				

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

OPTIONAL SIGNALS MAY BE CONSIDERED	
1	PHASEWISE START/TRIP SIGNALS (GENERAL/FUNCTIONAL)
2	REQUIRED BINARY INPUT SIGNALS

08. Disturbance Recorder for 1-Ph. Auto Transformer for One & Half Breaker Scheme

-REF relay

A	Configuration of ANALOG CHANNELS	
S.No.	Channel Description	Standardized Channel Name
	High Impedance relay	
1	High Impedance Current - R Phase	I-R-REF
2	High Impedance Current - Y Phase	I-Y-REF
3	High Impedance Current - B Phase	I-B-REF
	Low Impedance relay	
4	IV R Ph Voltage	V-R PH IV
5	IV Y Ph Voltage	V-Y PH IV
6	IV B Ph Voltage	V-B PH IV

B	Configuration of Digital Channels				
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN_HV	HV_M_CB_OPEN	HV_MCBO	Y	OPTIONAL
2	TIE CB OPEN_HV	HV_T_CB_OPEN	HV_TCBO	Y	OPTIONAL
3	MAIN CB OPEN_IV	IV_M_CB_OPEN	IV_MCBO	Y	OPTIONAL
4	TBC/TIE CB OPEN_IV	IV_T_CB_OPEN	IV_TCBO	Y	OPTIONAL
5	R-PH REF PROTECTION OPERATED	R_PH_REF_OPTD	R_REF_OP	Y	
6	Y-PH REF PROTECTION OPERATED	Y_PH_REF_OPTD	Y_REF_OP	Y	
7	B-PH REF PROTECTION OPERATED	B_PH_REF_OPTD	B_REF_OP	Y	
8	IV OVER FLUXING START	IV_OVERFLUX_ST	IVOFST	N	
9	IV OVER FLUXING OPERATED	IV_OVERFLUX_OPTD	IVOFOPD	Y	
10	IV VT FUSE FAIL ALARM	IVVT_FUS_FAIL	IVVT_FF	N	
11	MECHANICAL PROTECTION TRIPPING-1	MECH_TRIP1	MECHTR1	Y	AS PER SCHEME
12	MECHANICAL PROTECTION TRIPPING-2	MECH_TRIP2	MECHTR2	Y	AS PER SCHEME
13	MECHANICAL PROTECTION TRIPPING-3	MECH_TRIP3	MECHTR3	Y	AS PER SCHEME
14	MECHANICAL PROTECTION TRIPPING-4	MECH_TRIP4	MECHTR4	Y	AS PER SCHEME
15	MECHANICAL PROTECTION ALARM-1	MECH_ALM1	MECHAL1	Y	AS PER SCHEME
16	MECHANICAL PROTECTION ALARM-2	MECH_ALM2	MECHAL2	Y	AS PER SCHEME
17	MECHANICAL PROTECTION ALARM-3	MECH_ALM3	MECHAL3	Y	AS PER SCHEME
18	MECHANICAL PROTECTION ALARM-4	MECH_ALM4	MECHAL4	Y	AS PER SCHEME
19	OPTIONAL				
20	OPTIONAL				
21	OPTIONAL				
22	OPTIONAL				
23	OPTIONAL				
24	OPTIONAL				
25	OPTIONAL				
26	OPTIONAL				
27	OPTIONAL				
28	OPTIONAL				
29	OPTIONAL				
30	OPTIONAL				
31	OPTIONAL				
32	OPTIONAL				

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

09. Disturbance Recorder for 3Ph & 1 Ph Transformer HV/IV Backup impedance relay in One & Half Breaker Scheme

A Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name
1	R Phase Current	I-R PH.
2	Y Phase Current	I-Y PH.
3	B Phase Current	I-B PH.
4	Neutral Current	I-N PH.
5	R Phase Voltage	V-R PH.
6	Y Phase Voltage	V-Y PH.
7	B Phase Voltage	V-B PH.
8	Neutral voltage	V-N PH.

B CONFIGURATION OF DIGITAL CHANNELS - IED WITH 16 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	ZONE-1 OPTD.	ZONE1_OPTD	Z1_OP	Y	
6	ZONE-2 START	ZONE2_START	Z2_ST	N	
7	ZONE-2 OPTD.	ZONE2_OPTD	Z2_OP	Y	
8	ZONE-3 START	ZONE3_START	Z3_ST	N	
9	ZONE-3 OPTD.	ZONE3_OPTD	Z3_OP	Y	
10	REVERSE ZONE START	ZONER_START	ZR_ST	N	
11	REVERSE ZONE OPTD	ZONER_OPTD	ZR_OP	Y	
12	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
13	VT FUSE FAIL ALARM	VT_FUS_FAIL	VT_FF	N	
14	3 PH. GROUP A/B OPERATED	3PH_GR_AB_OPTD	GRABOPD	Y	
15	BACKUP OC & EF OPTD	BU_OC_EF_OPD	OCEFOPD	Y	
16	MECHANICAL PROTECTION TRIPPING	MECH_TRIP	MECHTR	Y	AS PER SCHEME

C CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	REMARKS
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	ZONE-1 OPTD.	ZONE1_OPTD	Z1_OP	Y	
6	ZONE-2 START	ZONE2_START	Z2_ST	N	
7	ZONE-2 OPTD.	ZONE2_OPTD	Z2_OP	Y	
8	ZONE-3 START	ZONE3_START	Z3_ST	N	
9	ZONE-3 OPTD.	ZONE3_OPTD	Z3_OP	Y	
10	REVERSE ZONE START	ZONER_START	ZR_ST	N	
11	REVERSE ZONE OPTD	ZONER_OPTD	ZR_OP	Y	
12	POWER SWING DET.	PS_DETECTED	PS_DET	N	
13	POWER SWING BLOCK OPERATED	PS_BLK_OPTD	PSB_OP	N	
14	VT FUSE FAIL ALARM	VT_FUS_FAIL	VT_FF	N	
15	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
16	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
17	BACKUP DIR OVERCURRENT STAGE-1 START	BU_OC_STG1_ST	BUOC1ST	Y	
18	BACKUP DIR OVERCURRENT STAGE-1 OPTD	BU_OC_STG1_OPD	BUOC1OP	Y	
19	BACKUP OVERCURRENT STAGE-2 START	BU_OC_STG2_ST	BUOC2ST	N	
20	BACKUP OVERCURRENT STAGE-2 OPTD	BU_OC_STG2_OPD	BUOC2OP	Y	
21	BACKUP DIR EARTHFAULT STAGE-1 START	BU_EF_STG1_ST	BUEF1ST	Y	
22	BACKUP DIR EARTHFAULT STAGE-1 OPTD	BU_EF_STG1_OPD	BUEF1OP	Y	
23	BACKUP EARTHFAULT STAGE-2 START	BU_EF_STG2_ST	BUEF2ST	N	
24	BACKUP EARTHFAULT STAGE-2 OPTD	BU_EF_STG2_OPD	BUEF2OP	Y	
25	MECHANICAL PROTECTION TRIPPING-1	MECH_TRIP1	MECHTR1	Y	AS PER SCHEME
26	MECHANICAL PROTECTION TRIPPING-2	MECH_TRIP2	MECHTR2	Y	AS PER SCHEME
27	MECHANICAL PROTECTION TRIPPING-3	MECH_TRIP3	MECHTR3	Y	AS PER SCHEME
28	MECHANICAL PROTECTION ALARM-1	MECH_ALM1	MECHAL1	Y	AS PER SCHEME
29	MECHANICAL PROTECTION ALARM-2	MECH_ALM2	MECHAL2	Y	AS PER SCHEME
30	MECHANICAL PROTECTION ALARM-3	MECH_ALM3	MECHAL3	Y	AS PER SCHEME
31	MECHANICAL PROTECTION ALARM-3	MECH_ALM3	MECHAL3	Y	AS PER SCHEME
32	OPTIONAL				

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

10. Disturbance Recorder for 3Ph & 1 Ph Transformer HV/IV Backup Overcurrent relay in One & Half Breaker Scheme

A Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name
1	R Phase Current	I-R PH.
2	Y Phase Current	I-Y PH.
3	B Phase Current	I-B PH.
4	Neutral Current	I-N PH.
5	R Phase Voltage	V-R PH.
6	Y Phase Voltage	V-Y PH.
7	B Phase Voltage	V-B PH.
8	Neutral voltage	V-N PH.

B CONFIGURATION OF DIGITAL CHANNELS - IED WITH 16 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	OPTIONAL
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	OPTIONAL
3	BACKUP DIR OVERCURRENT STAGE-1 START	BU_OC_STG1_ST	BUOC1ST	Y	
4	BACKUP DIR OVERCURRENT STAGE-1 OPTD	BU_OC_STG1_OPD	BUOC1OP	Y	
5	BACKUP OVERCURRENT STAGE-2 START	BU_OC_STG2_ST	BUOC2ST	N	
6	BACKUP OVERCURRENT STAGE-2 OPTD	BU_OC_STG2_OPD	BUOC2OP	Y	
7	BACKUP DIR EARTHFAULT STAGE-1 START	BU_EF_STG1_ST	BUEF1ST	Y	
8	BACKUP DIR EARTHFAULT STAGE-1 OPTD	BU_EF_STG1_OPD	BUEF1OP	Y	
9	BACKUP EARTHFAULT STAGE-2 START	BU_EF_STG2_ST	BUEF2ST	N	
10	BACKUP EARTHFAULT STAGE-2 OPTD	BU_EF_STG2_OPD	BUEF2OP	Y	
11	VT FUSE FAIL ALARM	VT_FUS_FAIL	VT_FF	N	
12	MECHANICAL PROTECTION TRIPPING-1	MECH_TRIP1	MECHTR1	Y	AS PER SCHEME
13	MECHANICAL PROTECTION TRIPPING-2	MECH_TRIP2	MECHTR2	Y	AS PER SCHEME
14	MECHANICAL PROTECTION TRIPPING-3	MECH_TRIP3	MECHTR3	Y	AS PER SCHEME
15	MECHANICAL PROTECTION ALARM-1	MECH_ALM1	MECHAL1	Y	AS PER SCHEME
16	MECHANICAL PROTECTION ALARM-2	MECH_ALM2	MECHAL2	Y	AS PER SCHEME

C CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	REMARKS
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	OPTIONAL
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	OPTIONAL
3	BACKUP DIR OVERCURRENT STAGE-1 START	BU_OC_STG1_ST	BUOC1ST	Y	
4	BACKUP DIR OVERCURRENT STAGE-1 OPTD	BU_OC_STG1_OPD	BUOC1OP	Y	
5	BACKUP OVERCURRENT STAGE-2 START	BU_OC_STG2_ST	BUOC2ST	N	
6	BACKUP OVERCURRENT STAGE-2 OPTD	BU_OC_STG2_OPD	BUOC2OP	Y	
7	BACKUP DIR EARTHFAULT STAGE-1 START	BU_EF_STG1_ST	BUEF1ST	Y	
8	BACKUP DIR EARTHFAULT STAGE-1 OPTD	BU_EF_STG1_OPD	BUEF1OP	Y	
9	BACKUP EARTHFAULT STAGE-2 START	BU_EF_STG2_ST	BUEF2ST	N	
10	BACKUP EARTHFAULT STAGE-2 OPTD	BU_EF_STG2_OPD	BUEF2OP	Y	
11	VT FUSE FAIL ALARM	VT_FUS_FAIL	VT_FF	N	
12	MECHANICAL PROTECTION TRIPPING-1	MECH_TRIP1	MECHTR1	Y	AS PER SCHEME
13	MECHANICAL PROTECTION TRIPPING-2	MECH_TRIP2	MECHTR2	Y	AS PER SCHEME
14	MECHANICAL PROTECTION TRIPPING-3	MECH_TRIP3	MECHTR3	Y	AS PER SCHEME
15	MECHANICAL PROTECTION ALARM-1	MECH_ALM1	MECHAL1	Y	AS PER SCHEME
16	MECHANICAL PROTECTION ALARM-2	MECH_ALM2	MECHAL2	Y	AS PER SCHEME
17	MECHANICAL PROTECTION ALARM-3	MECH_ALM3	MECHAL3	Y	AS PER SCHEME
18	MECHANICAL PROTECTION ALARM-3	MECH_ALM3	MECHAL3	Y	AS PER SCHEME
19	OPTIONAL				
20	OPTIONAL				
21	OPTIONAL				
22	OPTIONAL				
23	OPTIONAL				
24	OPTIONAL				
25	OPTIONAL				
26	OPTIONAL				
27	OPTIONAL				
28	OPTIONAL				
29	OPTIONAL				
30	OPTIONAL				
31	OPTIONAL				
32	OPTIONAL				

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

11. Disturbance Recorder for Bus/line Reactor (3-Ph.) for One & Half Breaker Scheme for Differential Relay

A Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name
1	R Phase Current	I-R PH.
2	Y Phase Current	I-Y PH.
3	B Phase Current	I-B PH.
4	Neutral Current	I-N PH.
5	R Phase Current NEUTRAL SIDE	I-RN PH.
6	Y Phase Current NEUTRAL SIDE	I-YN PH.
7	B Phase Current NEUTRAL SIDE	I-BN PH.
8	R Phase DIFFERENTIAL Current (CALCULATED)	IR DIFF
9	Y Phase DIFFERENTIAL Current (CALCULATED)	IY DIFF
10	B Phase DIFFERENTIAL Current (CALCULATED)	IB DIFF
11	R Phase BIAS Current (CALCULATED)	IR BIAS
12	Y Phase BIAS Current (CALCULATED)	IY BIAS
13	B Phase BIAS Current (CALCULATED)	IB BIAS

B CONFIGURATION OF DIGITAL CHANNELS - IED WITH 16 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	BACKUP IMPEDANCE PROTN OPERATED	BU_IMP_PROTN_OPD	BUIMPOP	Y	
6	PRV TRIP	PRV_TRIP	PRV_TRP	Y	
7	WTI TRIP	WTI_TRIP	WTI_TRP	Y	
8	TEED PROTECTION OPERATED	TEED_PROTN_OPTD	TEE_OPD	Y	
9	OTI TRIP	OTI_TRIP	OTI_TRP	Y	
10	BUCHHHOLZ TRIP	BUCHHHOLZ_TRIP	BCZ_TRP	Y	
11	MAIN/TIE LBB OPERATED	M/T_LBB_OPD	MTLBBOP	Y	
12	LR SWITCHABLE CB LBB OPERATED	LR_CB_LBB_OPD	LRLBBOP	Y	FOR SW L/R
13	BUS BAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
14	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
15	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
16	NGR PROTECTION OPERATED	NGR_PROTN_OPTD	NGR_OPD	Y	FOR SW & NON SW L/R

C CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	BACKUP IMPEDANCE PROTN OPERATED	BU_IMP_PROTN_OPD	BUIMPOP	Y	
6	PRV TRIP	PRV_TRIP	PRV_TRP	Y	
7	WTI TRIP	WTI_TRIP	WTI_TRP	Y	
8	WTI ALARM	WTI_ALARM	WTI_AL	Y	
9	OTI TRIP	OTI_TRIP	OTI_TRP	Y	
10	OTI ALARM	OTI_ALARM	OTI_AL	Y	
11	BUCHHHOLZ TRIP	BUCHHHOLZ_TRIP	BCZ_TRP	Y	
12	BUCHHHOLZ ALARM	BUCHHHOLZ_ALARM	BCZ_AL	Y	
13	MAIN LBB OPERATED	MAIN_LBB_OPD	MLBBOPD	Y	
14	TIE LBB OPERATED	TIE_LBB_OPD	TLBBOPD	Y	
15	LR SWITCHABLE CB LBB OPERATED	LR_CB_LBB_OPD	LRLBBOP	Y	FOR SW L/R
16	BUS BAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
17	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
18	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
19	TEED PROTECTION OPERATED	TEED_PROTN_OPTD	TEE_OPD	Y	
20	VT FUSE FAIL ALARM	VT_FUS_FAIL	VT_FF	N	
21	NGR PROTECTION OPERATED	NGR_PROTN_OPTD	NGR_OPD	Y	FOR SW & NON SW L/R
22	NGR BYPASS COMMAND	NGR_BYPASS_CMD	NGR_BYP	Y	IF AVAILABLE
23	NGR CB/ISO CLOSED	NGR_CB/ISO_CLS	N_CB_CL	Y	IF AVAILABLE
24	OPTIONAL				
25	OPTIONAL				
26	OPTIONAL				
27	OPTIONAL				
28	OPTIONAL				
29	OPTIONAL				
30	OPTIONAL				
31	OPTIONAL				
32	OPTIONAL				

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

12. Disturbance Recorder for Bus/line Reactor (1-Ph.) for One & Half Breaker Scheme for Differential Relay

A	Configuration of ANALOG CHANNELS	
S.No.	Channel Description	Standardized Channel Name
1	R Phase Current	I-R PH.
2	Y Phase Current	I-Y PH.
3	B Phase Current	I-B PH.
4	Neutral Current	I-N PH.
5	R Phase Current NEUTRAL SIDE	I-RN PH.
6	Y Phase Current NEUTRAL SIDE	I-YN PH.
7	B Phase Current NEUTRAL SIDE	I-BN PH.
8	R Phase DIFFERENTIAL Current (CALCULATED)	IR DIFF
9	Y Phase DIFFERENTIAL Current (CALCULATED)	IY DIFF
10	B Phase DIFFERENTIAL Current (CALCULATED)	IB DIFF
11	R Phase BIAS Current (CALCULATED)	IR BIAS
12	Y Phase BIAS Current (CALCULATED)	IY BIAS
13	B Phase BIAS Current (CALCULATED)	IB BIAS

B CONFIGURATION OF DIGITAL CHANNELS - IED WITH 16 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	BACKUP IMPEDANCE PROTN OPERATED	BU_IMP_PROTN_OPTD	BUIMPOP	Y	
6	PRV TRIP	PRV_TRIP	PRV_TRP	Y	
7	WTI TRIP	WTI_TRIP	WTI_TRP	Y	
8	TEED PROTECTION OPERATED	TEED_PROTN_OPTD	TEE_OPD	Y	
9	OTI TRIP	OTI_TRIP	OTI_TRP	Y	
10	BUCHHHOLZ TRIP	BUCHHHOLZ_TRIP	BCZ_TRP	Y	
11	MAIN/TIE LBB OPERATED	M/T_LBB_OPD	MTLBBOP	Y	
12	LR SWITCHABLE CB LBB OPERATED	LR_CB_LBB_OPD	LRLBBOP	Y	FOR SW L/R
13	BUS BAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
14	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
15	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
16	NGR PROTECTION OPERATED	NGR_PROTN_OPTD	NGR_OPD	Y	FOR SW & NON SW L/R

C CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	BACKUP IMPEDANCE PROTN OPERATED	BU_IMP_PROTN_OPTD	BUIMPOP	Y	
6	PRV TRIP R-PH.	PRV_TRIP_R	R_PRVTP	Y	
7	PRV TRIP Y-PH.	PRV_TRIP_Y	Y_PRVTP	Y	
8	PRV TRIP B-PH.	PRV_TRIP_B	B_PRVTP	Y	
9	WTI TRIP R-PH.	WTI_TRIP_R	R_WTITP	Y	
10	WTI TRIP Y-PH.	WTI_TRIP_Y	Y_WTITP	Y	
11	WTI TRIP B-PH.	WTI_TRIP_B	B_WTITP	Y	
12	OTI TRIP R-PH.	OTI_TRIP_R	R_OTITP	Y	
13	OTI TRIP Y-PH.	OTI_TRIP_Y	Y_OTITP	Y	
14	OTI TRIP B-PH.	OTI_TRIP_B	B_OTITP	Y	
15	BUCHHHOLZ TRIP R-PH.	BCZ_TRIP_R	R_BCZTP	Y	
16	BUCHHHOLZ TRIP Y-PH.	BCZ_TRIP_Y	Y_BCZTP	Y	
17	BUCHHHOLZ TRIP B-PH.	BCZ_TRIP_B	B_BCZTP	Y	
18	WTI ALARM R-PH.	WTI_ALM_R	R_WTIAL	Y	
19	WTI ALARM Y-PH.	WTI_ALM_Y	Y_WTIAL	Y	
20	WTI ALARM B-PH.	WTI_ALM_B	B_WTIAL	Y	
21	OTI ALARM R-PH.	OTI_ALM_R	R_OTIAL	Y	
22	OTI ALARM Y-PH.	OTI_ALM_Y	Y_OTIAL	Y	
23	OTI ALARM B-PH.	OTI_ALM_B	B_OTIAL	Y	
24	MAIN/TIE LBB OPERATED	M/T_LBB_OPD	MTLBBOP	Y	
25	LR SWITCHABLE CB LBB OPERATED	LR_CB_LBB_OPD	LRLBBOP	Y	FOR SW L/R
26	BUS BAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
27	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
28	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
29	NGR PROTECTION OPERATED	NGR_PROTN_OPTD	NGR_OPD	Y	FOR SW & NON SW L/R
30	NGR BYPASS COMMAND	NGR_BYPASS_CMD	NGR_BYB	Y	FOR SW & NON SW L/R
31	NGR CB/ISO CLOSED	NGR_CB/ISO_CLS	N_CB_CL	Y	FOR SW & NON SW L/R
32	TEED PROTECTION OPERATED	TEED_PROTN_OPTD	TEE_OPD	Y	IF APPLICABLE

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

13. Disturbance Recorder for Bus/Line Reactor (3-Ph.) for One & Half Breaker Scheme for Backup Impedance Relay

A Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name
1	R Phase Current	I-R PH.
2	Y Phase Current	I-Y PH.
3	B Phase Current	I-B PH.
4	Neutral Current	I-N PH.
5	R Phase Voltage	V-R PH.
6	Y Phase Voltage	V-Y PH.
7	B Phase Voltage	V-B PH.
8	Neutral voltage	V-N PH.

B CONFIGURATION OF DIGITAL CHANNELS - IED WITH 16 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	BACKUP IMPEDANCE PROTN OPERATED	BU_IMP_PROTN_OPD	BUIMPOP	Y	
6	PRV TRIP	PRV_TRIP	PRV_TRP	Y	
7	WTI TRIP	WTI_TRIP	WTI_TRP	Y	
8	TEED PROTECTION OPERATED	TEED_PROTN_OPTD	TEE_OPD	Y	
9	OTI TRIP	OTI_TRIP	OTI_TRP	Y	
10	BUCHHHOLZ TRIP	BUCHHHOLZ_TRIP	BCZ_TRP	Y	
11	MAIN/TIE LBB OPERATED	M/T_LBB_OPD	MTLBBOP	Y	
12	LR SWITCHABLE CB LBB OPERATED	LR_CB_LBB_OPD	LRLBBOP	Y	FOR SW L/R
13	BUS BAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
14	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
15	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
16	NGR PROTECTION OPERATED	NGR_PROTN_OPTD	NGR_OPD	Y	FOR SW & NON SW L/R

C CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	BACKUP IMPEDANCE PROTN OPERATED	BU_IMP_PROTN_OPD	BUIMPOP	Y	
6	PRV TRIP	PRV_TRIP	PRV_TRP	Y	
7	WTI TRIP	WTI_TRIP	WTI_TRP	Y	
8	WTI ALARM	WTI_ALARM	WTI_AL	Y	
9	OTI TRIP	OTI_TRIP	OTI_TRP	Y	
10	OTI ALARM	OTI_ALARM	OTI_AL	Y	
11	BUCHHHOLZ TRIP	BUCHHHOLZ_TRIP	BCZ_TRP	Y	
12	BUCHHHOLZ ALARM	BUCHHHOLZ_ALARM	BCZ_AL	Y	
13	MAIN LBB OPERATED	MAIN_LBB_OPD	MLBBOPD	Y	
14	TIE LBB OPERATED	TIE_LBB_OPD	TLBBOPD	Y	
15	LR SWITCHABLE CB LBB OPERATED	LR_CB_LBB_OPD	LRLBBOP	Y	FOR SW L/R
16	BUS BAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
17	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
18	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
19	TEED PROTECTION OPERATED	TEED_PROTN_OPTD	TEE_OPD	Y	
20	VT FUSE FAIL ALARM	VT_FUS_FAIL	VT_FF	N	
21	NGR PRV TRIP	NGR_PRV_TRIP	N_PRVTR	Y	FOR SW & NON SW L/R
22	NGR WTI TRIP	NGR_WTI_TRIP	N_WTITR	Y	FOR SW & NON SW L/R
23	NGR WTI ALARM	NGR_WTI_ALARM	N_WTIAL	Y	FOR SW & NON SW L/R
24	NGR OTI TRIP	NGR_OTI_TRIP	N_OTITR	Y	FOR SW & NON SW L/R
25	NGR OTI ALARM	NGR_OTI_ALARM	N_OTIAL	Y	FOR SW & NON SW L/R
26	NGR BUCHHHOLZ TRIP	NGR_BUCH_TRIP	N_BUCTR	Y	FOR SW & NON SW L/R
27	NGR BUCHHHOLZ ALARM	NGR_BUCH_ALM	N_BUCAL	Y	FOR SW & NON SW L/R
28	NGR BYPASS COMMAND	NGR_BYPASS_CMD	NGR_BYB	Y	FOR SW & NON SW L/R
29	NGR CB/ISO CLOSED	NGR_CB/ISO_CLS	N_CB_CL	Y	FOR SW & NON SW L/R
30	OPTIONAL				
31	OPTIONAL				
32	OPTIONAL				

Note : Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.

14. Disturbance Recorder for Bus/Line Reactor (1-Ph.) for One & Half Breaker Scheme for Backup Impedance Relay

A Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name
1	R Phase Current	I-R PH.
2	Y Phase Current	I-Y PH.
3	B Phase Current	I-B PH.
4	Neutral Current	I-N PH.
5	R Phase Voltage	V-R PH.
6	Y Phase Voltage	V-Y PH.
7	B Phase Voltage	V-B PH.
8	Neutral voltage	V-N PH.

B CONFIGURATION OF DIGITAL CHANNELS - IED WITH 16 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	BACKUP IMPEDANCE PROTN OPERATED	BU_IMP_PROTN_OPD	BUIMPOP	Y	
6	PRV TRIP	PRV_TRIP	PRV_TRP	Y	
7	WTI TRIP	WTI_TRIP	WTI_TRP	Y	
8	TEED PROTECTION OPERATED	TEED_PROTN_OPTD	TEE_OPD	Y	
9	OTI TRIP	OTI_TRIP	OTI_TRP	Y	
10	BUCHHHOLZ TRIP	BUCHHHOLZ_TRIP	BCZ_TRP	Y	
11	MAIN/TIE LBB OPERATED	M/T_LBB_OPD	MTLBBOP	Y	
12	LR SWITCHABLE CB LBB OPERATED	LR_CB_LBB_OPD	LRLBBOP	Y	FOR SW L/R
13	BUS BAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
14	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
15	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
16	NGR PROTECTION OP	VT_FUS_FAIL	VT_FF	N	

C CONFIGURATION OF DIGITAL CHANNELS - IED WITH 32 DR INPUT					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN	MAIN_CB_OPEN	M_CB_O	Y	
2	TIE CB OPEN	TIE_CB_OPEN	T_CB_O	Y	
3	DIFFERENTIAL PROTECTION OPERATED	DIFF_PROTN_OPTD	DIF_OPD	Y	
4	REF PROTECTION OPERATED	REF_PROTN_OPTD	REF_OPD	Y	
5	BACKUP IMPEDANCE PROTN OPERATED	BU_IMP_PROTN_OPD	BUIMPOP	Y	
6	PRV TRIP R-PH.	PRV_TRIP_R	R_PRVTP	Y	
7	PRV TRIP Y-PH.	PRV_TRIP_Y	Y_PRVTP	Y	
8	PRV TRIP B-PH.	PRV_TRIP_B	B_PRVTP	Y	
9	WTI TRIP R-PH.	WTI_TRIP_R	R_WTITP	Y	
10	WTI TRIP Y-PH.	WTI_TRIP_Y	Y_WTITP	Y	
11	WTI TRIP B-PH.	WTI_TRIP_B	B_WTITP	Y	
12	OTI TRIP R-PH.	OTI_TRIP_R	R_OTITP	Y	
13	OTI TRIP Y-PH.	OTI_TRIP_Y	Y_OTITP	Y	
14	OTI TRIP B-PH.	OTI_TRIP_B	B_OTITP	Y	
15	BUCHHHOLZ TRIP R-PH.	BCZ_TRIP_R	R_BCZTP	Y	
16	BUCHHHOLZ TRIP Y-PH.	BCZ_TRIP_Y	Y_BCZTP	Y	
17	BUCHHHOLZ TRIP B-PH.	BCZ_TRIP_B	B_BCZTP	Y	
18	WTI ALARM R-PH.	WTI_ALM_R	R_WTIAL	Y	
19	WTI ALARM Y-PH.	WTI_ALM_Y	Y_WTIAL	Y	
20	WTI ALARM B-PH.	WTI_ALM_B	B_WTIAL	Y	
21	OTI ALARM R-PH.	OTI_ALM_R	R_OTIAL	Y	
22	OTI ALARM Y-PH.	OTI_ALM_Y	Y_OTIAL	Y	
23	OTI ALARM B-PH.	OTI_ALM_B	B_OTIAL	Y	
24	MAIN LBB OPERATED	MAIN_LBB_OPD	MLBBOPD	Y	
25	TIE LBB OPERATED	TIE_LBB_OPD	TLBBOPD	Y	
26	LR SWITCHABLE CB LBB OPERATED	LR_CB_LBB_OPD	LRLBBOP	Y	FOR SW L/R
27	BUS BAR OPERATED	BUSBAR_OPTD	BB_OPD	Y	
28	3 PH. GROUP A OPERATED	3PH_GR_A_OPTD	GRA_OPD	Y	
29	3 PH. GROUP B OPERATED	3PH_GR_B_OPTD	GRB_OPD	Y	
30	TEED PROTECTION OPERATED	TEED_PROTN_OPTD	TEE_OPD	Y	
31	VT FUSE FAIL ALARM	VT_FUS_FAIL	VT_FF	N	
32	NGR PRV TRIP	NGR_PRV_TRIP	N_PRVTR	Y	FOR SW & NON SW L/R
33	NGR WTI TRIP	NGR_WTI_TRIP	N_WTITR	Y	FOR SW & NON SW L/R
34	NGR WTI ALARM	NGR_WTI_ALARM	N_WTIAL	Y	FOR SW & NON SW L/R
35	NGR OTI TRIP	NGR_OTI_TRIP	N_OTITR	Y	FOR SW & NON SW L/R
36	NGR OTI ALARM	NGR_OTI_ALARM	N_OTIAL	Y	FOR SW & NON SW L/R

14. Disturbance Recorder for Bus/Line Reactor (1-Ph.) for One & Half Breaker Scheme for Backup Impedance Relay

37	NGR BUCHHHOLZ TRIP	NGR_BUCH_TRIP	N_BUCTR	Y	FOR SW & NON SW L/R
38	NGR BUCHHHOLZ ALARM	NGR_BUCH_ALM	N_BUCAL	Y	FOR SW & NON SW L/R
39	NGR BYPASS_COMMAND	NGR_BYPASS_CMD	NGR_BYP	Y	FOR SW & NON SW L/R
40	NGR CB/ISO CLOSED	NGR_CB/ISO_CLS	N_CB_CL	Y	FOR SW & NON SW L/R
41	OPTIONAL				
42	OPTIONAL				

Note :	Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.
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15. Disturbance Recorder for Bus/Line Reactor (3-Ph.) for One & Half Breaker Scheme for REF Relay

A Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name
	High Impedance relay	
1	High Impedance Current	IREF
	Low Impedance relay	
2	Neutral Current	IN
3	3I0 Current	3I0
4	REF Differential Current	IREF-DIFF
5	REF Restraining Current	IREF-RES

B CONFIGURATION OF DIGITAL CHANNELS					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN_HV	HV_M_CB_OPEN	HV_MCBO	Y	OPTIONAL
2	TIE CB OPEN_HV	HV_T_CB_OPEN	HV_TCBO	Y	OPTIONAL
3	MAIN CB OPEN_IV	IV_M_CB_OPEN	IV_MCBO	Y	OPTIONAL
4	TBC/TIE CB OPEN_IV	IV_T_CB_OPEN	IV_TCBO	Y	OPTIONAL
5	REF PROTECTION OPERATED	REF_OPTD	REF_OP	Y	
6	MECHANICAL PROTECTION TRIPPING-1	MECH_TRIP1	MECHTR1	Y	AS PER SCHEME
7	MECHANICAL PROTECTION TRIPPING-2	MECH_TRIP2	MECHTR2	Y	AS PER SCHEME
8	MECHANICAL PROTECTION TRIPPING-3	MECH_TRIP3	MECHTR3	Y	AS PER SCHEME
9	MECHANICAL PROTECTION TRIPPING-4	MECH_TRIP4	MECHTR4	Y	AS PER SCHEME
10	MECHANICAL PROTECTION ALARM-1	MECH_ALM1	MECHAL1	Y	AS PER SCHEME
11	MECHANICAL PROTECTION ALARM-2	MECH_ALM2	MECHAL2	Y	AS PER SCHEME
12	MECHANICAL PROTECTION ALARM-3	MECH_ALM3	MECHAL3	Y	AS PER SCHEME
13	MECHANICAL PROTECTION ALARM-4	MECH_ALM4	MECHAL4	Y	AS PER SCHEME
14	NGR PROTECTION OPERATED	NGR_PROTN_OPTD	NGR_OPD	Y	FOR SW & NON SW L/R
15	OPTIONAL				
16	OPTIONAL				

Note :	Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.
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16. Disturbance Recorder for Bus/Line Reactor (1-Ph.) for One & Half Breaker Scheme for REF Relay

A Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name
High Impedance relay		
1	High Impedance Current - R Phase	I-R-REF
2	High Impedance Current - Y Phase	I-Y-REF
3	High Impedance Current - B Phase	I-B-REF

B CONFIGURATION OF DIGITAL CHANNELS					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	MAIN CB OPEN_HV	HV_M_CB_OPEN	HV_MCBO	Y	OPTIONAL
2	TIE CB OPEN_HV	HV_T_CB_OPEN	HV_TCBO	Y	OPTIONAL
3	MAIN CB OPEN_IV	IV_M_CB_OPEN	IV_MCBO	Y	OPTIONAL
4	TBC/TIE CB OPEN_IV	IV_T_CB_OPEN	IV_TCBO	Y	OPTIONAL
5	R-PH REF PROTECTION OPERATED	R_PH_REF_OPTD	R_REF_OP	Y	
6	Y-PH REF PROTECTION OPERATED	Y_PH_REF_OPTD	Y_REF_OP	Y	
7	B-PH REF PROTECTION OPERATED	B_PH_REF_OPTD	B_REF_OP	Y	
8	MECHANICAL PROTECTION TRIPPING-1	MECH_TRIP1	MECHTR1	Y	AS PER SCHEME
9	MECHANICAL PROTECTION TRIPPING-2	MECH_TRIP2	MECHTR2	Y	AS PER SCHEME
10	MECHANICAL PROTECTION TRIPPING-3	MECH_TRIP3	MECHTR3	Y	AS PER SCHEME
11	MECHANICAL PROTECTION TRIPPING-4	MECH_TRIP4	MECHTR4	Y	AS PER SCHEME
12	MECHANICAL PROTECTION ALARM-1	MECH_ALM1	MECHAL1	Y	AS PER SCHEME
13	MECHANICAL PROTECTION ALARM-2	MECH_ALM2	MECHAL2	Y	AS PER SCHEME
14	MECHANICAL PROTECTION ALARM-3	MECH_ALM3	MECHAL3	Y	AS PER SCHEME
15	MECHANICAL PROTECTION ALARM-4	MECH_ALM4	MECHAL4	Y	AS PER SCHEME
16	NGR PROTECTION OPERATED	NGR_PROTN_OPTD	NGR_OPD	Y	FOR SW & NON SW L/R

Note :	Analog Channels after 8th channel and Digital channels after 32nd channel if available shall be optional.
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17. Disturbance Recorder for One & Half Breaker Scheme of Centralised Busbar Protection relay

A	Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name	COMMENTS
Busbar			
1	Bay-401 R-Phase Current	401_I-R	401- Bay no
2	Bay-401 Y-Phase Current	401_I-Y	401- Bay no
3	Bay-401 B-Phase Current	401_I-B	401- Bay no
4	Bay-402 R-Phase Current	402_I-R	402- Bay no
5	Bay-402 Y-Phase Current	402_I-Y	402- Bay no
6	Bay-402 B-Phase Current	402_I-B	402- Bay no
7	--	--	--
8	--	--	--
9	--	--	--
10	Bay-XXX R-Phase Current	XXX_I-R	XXX- Bay no
11	Bay-XXX Y-Phase Current	XXX_I-Y	XXX- Bay no
12	Bay-XXX B-Phase Current	XXX_I-B	XXX- Bay no
13	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-R	BUS-1
14	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-Y	BUS-1
15	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-B	BUS-1
16	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-R	BUS-2
17	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-Y	BUS-2
18	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-B	BUS-2
13	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-R	BUS-1
14	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-Y	BUS-1
15	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-B	BUS-1
16	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-R	BUS-2
17	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-Y	BUS-2
18	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-B	BUS-2

B CONFIGURATION OF DIGITAL CHANNELS					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	CHECK ZONE OPERATED	CHECK_ZONE_OPD	CHKZNOP	Y	
2	BUSBAR ZONE-1 TRIP	ZONE1_TRIP	BBZ1_TR	Y	
3	BUSBAR ZONE-1 R-PHASE	ZONE1_RPH_TRIP	Z1_R_TR	Y	
4	BUSBAR ZONE-1 Y-PHASE	ZONE1_YPH_TRIP	Z1_Y_TR	Y	
5	BUSBAR ZONE-1 B-PHASE	ZONE1_BPH_TRIP	Z1_B_TR	Y	
6	BUSBAR ZONE-1 EXTERNAL TRIP INIT	ZONE1_EXT_TRIP	Z1EXT_TR	Y	
7	BUSBAR ZONE-1 OPEN CT ALARM	ZONE1_OPEN_CT	Z1_OP_CT	Y	
8	BUSBAR ZONE-1 BLOCKING	ZONE1_BLOCK	Z1_BLK	Y	
9	BUSBAR ZONE-1 OUT OF SERVICE	ZONE1_PROTN_OUT	Z1_OUT	Y	
10	BUSBAR ZONE-2 TRIP	ZONE2_TRIP	BBZ2_TR	Y	
11	BUSBAR ZONE-2 R-PHASE	ZONE2_RPH_TRIP	Z2_R_TR	Y	
12	BUSBAR ZONE-2 Y-PHASE	ZONE2_YPH_TRIP	Z2_Y_TR	Y	
13	BUSBAR ZONE-2 B-PHASE	ZONE2_BPH_TRIP	Z2_B_TR	Y	
14	BUSBAR ZONE-2 EXTERNAL TRIP INIT	ZONE2_EXT_TRIP	Z2EXT_TR	Y	
15	BUSBAR ZONE-2 OPEN CT ALARM	ZONE2_OPEN_CT	Z2_OP_CT	Y	
16	BUSBAR ZONE-2 BLOCKING	ZONE2_BLOCK	Z2_BLK	Y	
17	BUSBAR ZONE-2 OUT OF SERVICE	ZONE2_PROTN_OUT	Z2_OUT	Y	
18	BAYxxx LBB BACKUP TRIP	xxx_LBB_BACKTRIP	xxxBUTR	Y	BAY WISE BACKUP TRIP
19	COMMON ISOLATOR ALARM	ISOLATOR_ALARM	ISOAL	N	
19	BAYxxx_TRIP	BAYxxx_TRIP	Bxxx_TR	Y	xxx - Bay No. All bays signals need to be configured
20	BAYxxx EXTERNAL LBB TRIP	xxx_EXT_TRIP	xxxEXTR	Y	
21	BAYxxx OUT OF SERVICE	xxx_OUT	xxx_OUT	Y	
22	BAYxxx ISOLATOR ALARM	xxx_ISO_ALARM	xxxISOAL	N	
23	BAYxxx LBB R PHASE INITIATION	xxx_LBB_R_INIT	xxxBF_R	N	
24	BAYxxx LBB Y PHASE INITIATION	xxx_LBB_Y_INIT	xxxBF_Y	N	
25	BAYxxx LBB B PHASE INITIATION	xxx_LBB_B_INIT	xxxBF_B	N	
26	BAYxxx LBB 3 PHASE INITIATION	xxx_LBB_3P_INIT	xxxBF3P	N	
27	BAYxxx LBB R PHASE RETRIP	xxx_LBB_R_RETR	xxxR_RT	Y	
28	BAYxxx LBB Y PHASE RETRIP	xxx_LBB_Y_RETR	xxxY_RT	Y	
29	BAYxxx LBB B PHASE RETRIP	xxx_LBB_B_RETR	xxxB_RT	Y	
30	ALL OTHERS BAY RELATED SIGNALS NEED TO BE CONFIGURED				
31	OPTIONAL				

OPTIONAL SIGNALS MAY BE CONSIDERED	
1	PHASEWISE START/TRIP SIGNALS (GENERAL/FUNCTIONAL)
2	REQUIRED BINARY INPUT SIGNALS

18. Disturbance Recorder for DM/DMT Scheme of Centralised Busbar Protection relay

A	Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name	COMMENTS
	Busbar		
1	Bay-201 R-Phase Current	201_I-R	201- Bay no
2	Bay-201 Y-Phase Current	201_I-Y	201- Bay no
3	Bay-201 B-Phase Current	201_I-B	201- Bay no
4	Bay-202 R-Phase Current	202_I-R	202- Bay no
5	Bay-202 Y-Phase Current	202_I-Y	202- Bay no
6	Bay-202 B-Phase Current	202_I-B	202- Bay no
7	--	--	--
8	--	--	--
9	--	--	--
10	Bay-XXX R-Phase Current	XXX_I-R	XXX- Bay no
11	Bay-XXX Y-Phase Current	XXX_I-Y	XXX- Bay no
12	Bay-XXX B-Phase Current	XXX_I-B	XXX- Bay no
13	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-R	BUS-1
14	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-Y	BUS-1
15	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-B	BUS-1
16	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-R	BUS-2
17	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-Y	BUS-2
18	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-B	BUS-2
19	BUS ZONE-3 DIFFERENTIAL CURRENT	Z3_DIFF_I-R	TBC BUS(IF APPLICABLE)
20	BUS ZONE-3 DIFFERENTIAL CURRENT	Z3_DIFF_I-Y	TBC BUS(IF APPLICABLE)
21	BUS ZONE-3 DIFFERENTIAL CURRENT	Z3_DIFF_I-B	TBC BUS(IF APPLICABLE)
22	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-R	BUS-1
23	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-Y	BUS-1
24	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-B	BUS-1
25	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-R	BUS-2
26	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-Y	BUS-2
27	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-B	BUS-2
28	BUS ZONE-3 BIAS CURRENT	Z3_BIAS_I-R	TBC BUS(IF APPLICABLE)
29	BUS ZONE-3 BIAS CURRENT	Z3_BIAS_I-Y	TBC BUS(IF APPLICABLE)
30	BUS ZONE-3 BIAS CURRENT	Z3_BIAS_I-B	TBC BUS(IF APPLICABLE)

B CONFIGURATION OF DIGITAL CHANNELS					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	CHECK ZONE OPERATED	CHECK_ZONE_OPD	CHKZNOP	Y	
2	BUSBAR ZONE-1 TRIP	ZONE1_TRIP	BBZ1_TR	Y	
3	BUSBAR ZONE-1 R-PHASE	ZONE1_RPH_TRIP	Z1_R_TR	Y	
4	BUSBAR ZONE-1 Y-PHASE	ZONE1_YPH_TRIP	Z1_Y_TR	Y	
5	BUSBAR ZONE-1 B-PHASE	ZONE1_BPH_TRIP	Z1_B_TR	Y	
6	BUSBAR ZONE-1 EXTERNAL TRIP INIT	ZONE1_EXT_TRIP	Z1EXT_TR	Y	
7	BUSBAR ZONE-1 OPEN CT ALARM	ZONE1_OPEN_CT	Z1_OP_CT	Y	
8	BUSBAR ZONE-1 BLOCKING	ZONE1_BLOCK	Z1_BLK	Y	
9	BUSBAR ZONE-1 OUT OF SERVICE	ZONE1_PROTN_OUT	Z1_OUT	Y	
10	BUSBAR ZONE-2 TRIP	ZONE2_TRIP	BBZ2_TR	Y	
11	BUSBAR ZONE-2 R-PHASE	ZONE2_RPH_TRIP	Z2_R_TR	Y	
12	BUSBAR ZONE-2 Y-PHASE	ZONE2_YPH_TRIP	Z2_Y_TR	Y	
13	BUSBAR ZONE-2 B-PHASE	ZONE2_BPH_TRIP	Z2_B_TR	Y	
14	BUSBAR ZONE-2 EXTERNAL TRIP INIT	ZONE2_EXT_TRIP	Z2EXT_TR	Y	
15	BUSBAR ZONE-2 OPEN CT ALARM	ZONE2_OPEN_CT	Z2_OP_CT	Y	
16	BUSBAR ZONE-2 BLOCKING	ZONE2_BLOCK	Z2_BLK	Y	
17	BUSBAR ZONE-2 OUT OF SERVICE	ZONE2_PROTN_OUT	Z2_OUT	Y	
18	BUSBAR ZONE-3 TRIP	ZONE3_TRIP	BBZ3_TR	Y	
19	BUSBAR ZONE-3 R-PHASE	ZONE3_RPH_TRIP	Z3_R_TR	Y	
20	BUSBAR ZONE-3 Y-PHASE	ZONE3_YPH_TRIP	Z3_Y_TR	Y	
21	BUSBAR ZONE-3 B-PHASE	ZONE3_BPH_TRIP	Z3_B_TR	Y	
22	BUSBAR ZONE-3 EXTERNAL TRIP INIT	ZONE3_EXT_TRIP	Z3EXT_TR	Y	
23	BUSBAR ZONE-3 OPEN CT ALARM	ZONE3_OPEN_CT	Z3_OP_CT	Y	
24	BUSBAR ZONE-3 BLOCKING	ZONE3_BLOCK	Z3_BLK	Y	
25	BUSBAR ZONE-3 OUT OF SERVICE	ZONE3_PROTN_OUT	Z3_OUT	Y	
25	ZONE 1 & ZONE 2 MERGED	Z1_Z2_MERGED	Z1Z2MER	Y	
26	ZONE 2 & ZONE 3 MERGED	Z2_Z3_MERGED	Z2Z3MER	Y	
27	BAYxxx LBB BACKUP TRIP	xxx_LBB_BACKTRIP	xxxBUTR	Y	BAY WISE BACKUP TRIP
27	COMMON ISOLATOR DISCREPANCY ALARM	ISOLATOR_ALARM	ISOAL	N	
26	BAYxxx TRIP	BAYxxx_TRIP	Bxxx_TR	Y	XXX- BAY NO. ALL BAYS SINGALS NEED TO BE CONFIGURED. BREAKER FAILURE ENABLED THEN ASSOCIATED SIGNALS ALSO NEED TO BE CONFIGURED
27	BAYxxx EXTERNAL LBB TRIP	xxx_EXT_TRIP	xxxEXTR	Y	
28	BAYxxx OUT OF SERVICE	xxx_OUT_SERVICE	xxx_OUT	Y	
29	BAYxxx ISOLATOR ALARM	xxx_ISO_ALARM	xxxISOAL	N	
30	BAYxxx LBB R PHASE INITIATION	xxx_LBB_R_INIT	xxxBF_R	N	
31	BAYxxx LBB Y PHASE INITIATION	xxx_LBB_Y_INIT	xxxBF_Y	N	
32	BAYxxx LBB B PHASE INITIATION	xxx_LBB_B_INIT	xxxBF_B	N	
33	BAYxxx LBB 3 PHASE INITIATION	xxx_LBB_3P_INIT	xxxBF3P	Y	
34	BAYxxx LBB R PHASE RETRIP	xxx_LBB_R_RETR	xxxR_RT	Y	
35	BAYxxx LBB Y PHASE RETRIP	xxx_LBB_Y_RETR	xxxY_RT	Y	

18. Disturbance Recorder for DM/DMT Scheme of Centralised Busbar Protection relay

36	BAYxxx LBB B PHASE RETRIP	xxx_LBB_B_RETR	xxxB_RT	Y	
37	BAYxxx LBB BACKUP TRIP	xxx_LBB_BACKTRIP	xxxBUTR	Y	
38	BAYxxx CLOSE COMMAND	xxx_CB_CLS_CMD	xxxCLCM	Y	APPLICABLE FOR BC/TBC
39	ALL OTHERS BAY RELATED SIGNALS NEED TO BE CONFIGURED				
40	OPTIONAL				

OPTIONAL SIGNALS MAY BE CONSIDERED	
1	PHASEWISE START/TRIP SIGNALS (GENERAL/FUNCTIONAL)
2	REQUIRED BINARY INPUT SIGNALS

19. Disturbance Recorder for One & Half Breaker Scheme of De-Centralised Busbar Protection relay

Central Unit DR Assignment(CU)

A Configuration of ANALOG CHANNELS			
S.No.	Channel Description	Standardized Channel Name	COMMENTS
Busbar			
1	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-R	BUS-1
2	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-Y	BUS-1
3	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-B	BUS-1
4	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-R	BUS-2
5	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-Y	BUS-2
6	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-B	BUS-2
7	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-R	BUS-1
8	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-Y	BUS-1
9	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-B	BUS-1
10	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-R	BUS-2
11	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-Y	BUS-2
12	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-B	BUS-2

Bay-401 Unit DR Assignment(PU)

B Configuration of ANALOG CHANNELS			
S.No.	Channel Description	Standardized Channel Name	COMMENTS
Busbar			
1	Bay-401 R-Phase Current	401_I-R	401- Bay no
2	Bay-401 Y-Phase Current	401_I-Y	401- Bay no
3	Bay-401 B-Phase Current	401_I-B	401- Bay no

Bay-xxx Unit DR Assignment(PU)

C Configuration of ANALOG CHANNELS			
S.No.	Channel Description	Standardized Channel Name	COMMENTS
Busbar			
1	Bay-XXX R-Phase Current	XXX_I-R	XXX- Bay no
2	Bay-XXX Y-Phase Current	XXX_I-Y	XXX- Bay no
3	Bay-XXX B-Phase Current	XXX_I-B	XXX- Bay no

Central Unit DR Assignment(CU)

D Configuration of Digital Channels					
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	CHECK ZONE OPERATED	CHECK_ZONE_OPD	CHKZNOP	Y	
2	BUSBAR ZONE-1 TRIP	ZONE1_TRIP	BBZ1_TR	Y	
3	BUSBAR ZONE-1 R-PHASE	ZONE1_RPH_TRIP	Z1_R_TR	Y	
4	BUSBAR ZONE-1 Y-PHASE	ZONE1_YPH_TRIP	Z1_Y_TR	Y	
5	BUSBAR ZONE-1 B-PHASE	ZONE1_BPH_TRIP	Z1_B_TR	Y	
6	BUSBAR ZONE-1 EXTERNAL TRIP INIT	ZONE1_EXT_TRIP	Z1EXT_TR	Y	
7	BUSBAR ZONE-1 BREAKER FAILURE OPTD	ZONE1_CBF_OPD	Z1CBFOP	Y	
8	BUSBAR ZONE-1 OPEN CT ALARM	ZONE1_OPEN_CT	Z1_OP_CT	Y	
9	BUSBAR ZONE-1 BLOCKING	ZONE1_BLOCK	Z1_BLK	Y	
10	BUSBAR ZONE-1 OUT OF SERVICE	ZONE1_PROTN_OUT	Z1_OUT	Y	
11	BUSBAR ZONE-2 TRIP	ZONE2_TRIP	BBZ2_TR	Y	
12	BUSBAR ZONE-2 R-PHASE	ZONE2_RPH_TRIP	Z2_R_TR	Y	
13	BUSBAR ZONE-2 Y-PHASE	ZONE2_YPH_TRIP	Z2_Y_TR	Y	
14	BUSBAR ZONE-2 B-PHASE	ZONE2_BPH_TRIP	Z2_B_TR	Y	
15	BUSBAR ZONE-2 BREAKER FAILURE OPTD	ZONE1_CBF_OPD	Z2CBFOP	Y	
16	BUSBAR ZONE-2 EXTERNAL TRIP INIT	ZONE2_EXT_TRIP	Z2EXT_TR	Y	
17	BUSBAR ZONE-2 OPEN CT ALARM	ZONE2_OPEN_CT	Z2_OP_CT	Y	
18	BUSBAR ZONE-2 BLOCKING	ZONE2_BLOCK	Z2_BLK	Y	
19	BUSBAR ZONE-2 OUT OF SERVICE	ZONE2_PROTN_OUT	Z2_OUT	Y	
20	BAY401 FIBER COMMUNICATION FAIL	COM_ERR	COM_ERR	N	xxx - Bay No. All bays signals need to be configured
21	BAY401 OUT OF SERVICE	OUT_SERVICE	OUT_SER	N	xxx - Bay No. All bays signals need to be configured

Bay-401 Unit DR Assignment(PU)

E Configuration of ANALOG CHANNELS					
S.No.	Channel Description	Standardized Channel Name	7 characters	Triggers	Remarks
Busbar					
1	BAY401_TRIP	BAY_TRIP	BAYTRIP	Y	
2	BAY401 EXTERNAL LBB TRIP	EXT_TRIP	EXTTRIP	Y	
3	BAY401 OUT OF SERVICE	BAY_OUT	OUT_SER	Y	

19. Disturbance Recorder for One & Half Breaker Scheme of De-Centralised Busbar Protection relay

Central Unit DR Assignment(CU)

4	BAY401 ISOLATOR ALARM	ISO_ALARM	ISOAL	Y	401 - Bay No. All bays signals need to be configured	
5	BAY401 LBB R PHASE INITIATION	LBB_R_INIT	LBB_RINI	Y		
6	BAY401 LBB Y PHASE INITIATION	LBB_Y_INIT	LBB_YINI	Y		
7	BAY401 LBB B PHASE INITIATION	LBB_B_INIT	LBB_BINI	Y		
8	BAY401 LBB 3 PHASE INITIATION	LBB_3P_INIT	LBB_3PINI	Y		
9	BAY401 LBB R PHASE RETRIP	LBB_R_RETR	R_RETRP	Y		
10	BAY401 LBB Y PHASE RETRIP	LBB_Y_RETR	Y_RETRP	Y		
11	BAY401 LBB B PHASE RETRIP	LBB_B_RETR	B_RETRP	Y		
12	BAY401 LBB BACKUP TRIP	LBB_BACKTRIP	BUTRIP	Y		
13	BAY401 FIBER COMMUNICATION FAIL	BAY_COM_ERR	COM_ERR	N		xxx - Bay No. All bays signals need to be configured

Bay-xxx Unit DR Assignment(PU)

F	Configuration of ANALOG CHANNELS				
S.No.	Channel Description	Standardized Channel Name	7 characters	Triggers	Remarks
	Busbar				
1	BAYxxx_TRIP	BAY_TRIP	BAYTRIP	Y	xxx - Bay No. All bays signals need to be configured
2	BAYxxx EXTERNAL LBB TRIP	EXT_TRIP	EXTTRIP	Y	
3	BAYxxx OUT OF SERVICE	BAY_OUT	OUT_SER	Y	
4	BAYxxx ISOLATOR ALARM	ISO_ALARM	ISOAL	Y	
5	BAYxxx LBB R PHASE INITIATION	LBB_R_INIT	LBB_RINI	Y	
6	BAYxxx LBB Y PHASE INITIATION	LBB_Y_INIT	LBB_YINI	Y	
7	BAYxxx LBB B PHASE INITIATION	LBB_B_INIT	LBB_BINI	Y	
8	BAYxxx LBB 3 PHASE INITIATION	LBB_3P_INIT	LBB_3PINI	Y	
9	BAYxxx LBB R PHASE RETRIP	LBB_R_RETR	R_RETRP	Y	
10	BAYxxx LBB Y PHASE RETRIP	LBB_Y_RETR	Y_RETRP	Y	
11	BAYxxx LBB B PHASE RETRIP	LBB_B_RETR	B_RETRP	Y	
12	BAYxxx LBB BACKUP TRIP	LBB_BACKTRIP	BUTRIP	Y	
13	BAYxxx FIBER COMMUNICATION FAIL	BAY_COM_ERR	COM_ERR	N	xxx - Bay No. All bays signals need to be configure
14	ALL OTHERS BAY SIGNAL DR SIGNALS NEED TO BE CONFIGURED				

OPTIONAL SIGNALS MAY BE CONSIDERED

1	PHASEWISE START/TRIP SIGNALS (GENERAL/FUNCTIONAL)
2	REQUIRED BINARY INPUT SIGNALS

20. Disturbance Recorder for DM/DMT Scheme of De-Centralised Busbar Protection relay

Central Unit DR Assignment(CU)

A	Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name	COMMENTS
	Busbar		
1	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-R	BUS-1
2	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-Y	BUS-1
3	BUS ZONE-1 DIFFERENTIAL CURRENT	Z1_DIFF_I-B	BUS-1
4	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-R	BUS-2
5	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-Y	BUS-2
6	BUS ZONE-2 DIFFERENTIAL CURRENT	Z2_DIFF_I-B	BUS-2
7	BUS ZONE-3 DIFFERENTIAL CURRENT	Z3_DIFF_I-R	TBC BUS
8	BUS ZONE-3 DIFFERENTIAL CURRENT	Z3_DIFF_I-Y	TBC BUS
9	BUS ZONE-3 DIFFERENTIAL CURRENT	Z3_DIFF_I-B	TBC BUS
10	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-R	BUS-1
11	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-Y	BUS-1
12	BUS ZONE-1 BIAS CURRENT	Z1_BIAS_I-B	BUS-1
13	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-R	BUS-2
14	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-Y	BUS-2
15	BUS ZONE-2 BIAS CURRENT	Z2_BIAS_I-B	BUS-2
16	BUS ZONE-3 BIAS CURRENT	Z3_BIAS_I-R	TBC BUS
17	BUS ZONE-3 BIAS CURRENT	Z3_BIAS_I-Y	TBC BUS
18	BUS ZONE-3 BIAS CURRENT	Z3_BIAS_I-B	TBC BUS

Bay-201 Unit DR Assignment(PU)

B	Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name	COMMENTS
	Busbar		
1	Bay-201 R-Phase Current	201_I-R	201- Bay no
2	Bay-201 Y-Phase Current	201_I-Y	201- Bay no
3	Bay-201 B-Phase Current	201_I-B	201- Bay no

Bay-xxx Unit DR Assignment(PU)

C	Configuration of ANALOG CHANNELS		
S.No.	Channel Description	Standardized Channel Name	COMMENTS
	Busbar		
1	Bay-XXX R-Phase Current	XXX_I-R	XXX- Bay no
2	Bay-XXX Y-Phase Current	XXX_I-Y	XXX- Bay no
3	Bay-XXX B-Phase Current	XXX_I-B	XXX- Bay no

Central Unit DR Assignment(CU)

D	Configuration of Digital Channels				
S.No.	Channel Description	(Limited to 16 Characters)	7 characters	Triggers	Remarks
1	CHECK ZONE OPERATED	CHECK_ZONE_OPD	CHKZNOP	Y	
2	BUSBAR ZONE-1 TRIP	ZONE1_TRIP	BBZ1_TR	Y	
3	BUSBAR ZONE-1 R-PHASE	ZONE1_RPH_TRIP	Z1_R_TR	Y	
4	BUSBAR ZONE-1 Y-PHASE	ZONE1_YPH_TRIP	Z1_Y_TR	Y	
5	BUSBAR ZONE-1 B-PHASE	ZONE1_BPH_TRIP	Z1_B_TR	Y	
6	BUSBAR ZONE-1 EXTERNAL TRIP INIT	ZONE1_EXT_TRIP	Z1EXT_TR	Y	
7	BUSBAR ZONE-1 BREAKER FAILURE OPTD	ZONE1_CBF_OPD	Z1CBFOP	Y	
8	BUSBAR ZONE-1 OPEN CT ALARM	ZONE1_OPEN_CT	Z1_OP_CT	Y	
9	BUSBAR ZONE-1 BLOCKING	ZONE1_BLOCK	Z1_BLK	Y	
10	BUSBAR ZONE-1 OUT OF SERVICE	ZONE1_PROTN_OUT	Z1_OUT	Y	
11	BUSBAR ZONE-2 TRIP	ZONE2_TRIP	BBZ2_TR	Y	
12	BUSBAR ZONE-2 R-PHASE	ZONE2_RPH_TRIP	Z2_R_TR	Y	
13	BUSBAR ZONE-2 Y-PHASE	ZONE2_YPH_TRIP	Z2_Y_TR	Y	
14	BUSBAR ZONE-2 B-PHASE	ZONE2_BPH_TRIP	Z2_B_TR	Y	
15	BUSBAR ZONE-2 BREAKER FAILURE OPTD	ZONE1_CBF_OPD	Z2CBFOP	Y	
16	BUSBAR ZONE-2 EXTERNAL TRIP INIT	ZONE2_EXT_TRIP	Z2EXT_TR	Y	
17	BUSBAR ZONE-2 OPEN CT ALARM	ZONE2_OPEN_CT	Z2_OP_CT	Y	
18	BUSBAR ZONE-2 BLOCKING	ZONE2_BLOCK	Z2_BLK	Y	
19	BUSBAR ZONE-2 OUT OF SERVICE	ZONE2_PROTN_OUT	Z2_OUT	Y	
20	BUSBAR ZONE-3 TRIP	ZONE3_TRIP	BBZ3_TR	Y	
21	BUSBAR ZONE-3 R-PHASE	ZONE3_RPH_TRIP	Z3_R_TR	Y	
22	BUSBAR ZONE-3 Y-PHASE	ZONE3_YPH_TRIP	Z3_Y_TR	Y	
23	BUSBAR ZONE-3 B-PHASE	ZONE3_BPH_TRIP	Z3_B_TR	Y	
24	BUSBAR ZONE-3 BREAKER FAILURE OPTD	ZONE1_CBF_OPD	Z3CBFOP	Y	
25	BUSBAR ZONE-3 EXTERNAL TRIP INIT	ZONE3_EXT_TRIP	Z3EXT_TR	Y	
26	BUSBAR ZONE-3 OPEN CT ALARM	ZONE3_OPEN_CT	Z3_OP_CT	Y	
27	BUSBAR ZONE-3 BLOCKING	ZONE3_BLOCK	Z3_BLK	Y	
28	BUSBAR ZONE-3 OUT OF SERVICE	ZONE3_PROTN_OUT	Z3_OUT	Y	
29	ZONE 1 & ZONE 2 MERGED	Z1_Z2_MERGED	Z1Z2MER	Y	
30	ZONE 2 & ZONE 3 MERGED	Z2_Z3_MERGED	Z2Z3MER	Y	
31	ISOLATOR DISCREPANCY ALARM	ISOLATOR_ALARM	ISO_ALM	N	
32	BAYxxx FIBER COMMUNICATION FAIL	BAYxxx_COM_ERR	Bxxx_CR	Y	xxx - Bay No. All bays signals need to be configured

20. Disturbance Recorder for DM/DMT Scheme of De-Centralised Busbar Protection relay

Central Unit DR Assignment(CU) Bay-201 Unit DR Assignment(PU)

E Configuration of ANALOG CHANNELS					
S.No.	Channel Description	Standardized Channel Name	COMMENTS		
Busbar					
1	BAY201_TRIP	BAY_TRIP	BAYTRIP	Y	401 - Bay No. All bays signals need to be configured
2	BAY201 EXTERNAL LBB TRIP	EXT_TRIP	EXTTRIP	Y	
3	BAY201 OUT OF SERVICE	BAY_OUT	OUT_SER	Y	
4	BAY201 ISOLATOR DISCREPANCY ALARM	ISO_ALARM	ISOAL	Y	
5	BAY201 LBB R PHASE INITIATION	LBB_R_INIT	LBB_RINI	Y	
6	BAY201 LBB Y PHASE INITIATION	LBB_Y_INIT	LBB_YINI	Y	
7	BAY201 LBB B PHASE INITIATION	LBB_B_INIT	LBB_BINI	Y	
8	BAY201 LBB 3 PHASE INITIATION	LBB_3P_INIT	LBB_3PINI	Y	
9	BAY201 LBB R PHASE RETRIP	LBB_R_RETR	R_RETRP	Y	
10	BAY201 LBB Y PHASE RETRIP	LBB_Y_RETR	Y_RETRP	Y	
11	BAY201 LBB B PHASE RETRIP	LBB_B_RETR	B_RETRP	Y	
12	BAY201 LBB BACKUP TRIP	LBB_BACKTRIP	BUTRIP	Y	
13	BAY201 CLOSE COMMAND(APPLICABLE FOR BC & TBC)	CB_CLS_CMD	CBCLCMD	Y	
14	BAY201 FIBER COMMUNICATION FAIL	BAY_COM_ERR	COM_ERR	N	xxx - Bay No. All bays signals need to be configured

Bay-xxx Unit DR Assignment(PU)

F Configuration of ANALOG CHANNELS					
S.No.	Channel Description	Standardized Channel Name	COMMENTS		
Busbar					
1	BAYxxx_TRIP	BAY_TRIP	BAYTRIP	Y	xxx - Bay No. All bays signals need to be configured
2	BAYxxx EXTERNAL LBB TRIP	EXT_TRIP	EXTTRIP	Y	
3	BAYxxx OUT OF SERVICE	BAY_OUT	OUT_SER	Y	
4	BAYxxx ISOLATOR DISCREPANCY ALARM	ISO_ALARM	ISOAL	Y	
5	BAYxxx LBB R PHASE INITIATION	LBB_R_INIT	LBB_RINI	Y	
6	BAYxxx LBB Y PHASE INITIATION	LBB_Y_INIT	LBB_YINI	Y	
7	BAYxxx LBB B PHASE INITIATION	LBB_B_INIT	LBB_BINI	Y	
8	BAYxxx LBB 3 PHASE INITIATION	LBB_3P_INIT	LBB_3PINI	Y	
9	BAYxxx LBB R PHASE RETRIP	LBB_R_RETR	R_RETRP	Y	
10	BAYxxx LBB Y PHASE RETRIP	LBB_Y_RETR	Y_RETRP	Y	
11	BAYxxx LBB B PHASE RETRIP	LBB_B_RETR	B_RETRP	Y	
12	BAYxxx LBB BACKUP TRIP	LBB_BACKTRIP	BUTRIP	Y	
13	BAYxxx CLOSE COMMAND(APPLICABLE FOR BC & TBC)	CB_CLS_CMD	CBCLCMD	Y	
14	BAYxxx FIBER COMMUNICATION FAIL	BAY_COM_ERR	COM_ERR	N	xxx - Bay No. All bays signals need to be configure
15	ALL OTHERS BAY SIGNAL DR SIGNALS NEED TO BE CONFIGURED				
16	OPTIONAL				

OPTIONAL SIGNALS MAY BE CONSIDERED

1	PHASEWISE START/TRIP SIGNALS (GENERAL/FUNCTIONAL)
2	REQUIRED BINARY INPUT SIGNALS