


C	16.10.2024	ISSUED FOR APPROVAL			UNK	MM	GC	
B	09.10.2024	ISSUED FOR APPROVAL			UNK	MM	GC	
A	03.10.2024	ISSUED FOR APPROVAL			UNK	MM	GC	
REV	DATE	DESCRIPTION			MOD.BY	CKD.BY	APP.BY	
REVISIONS								
		SHIP JP 88 STORK						
		TITLE ELECTRICAL MTO						
SCALE NTS		DRAWN	UNK	DRAWING NUMBER		HULL NUMBER		REV
		CHECKED	MM	GSPL-P1482-EL-0011		-----		C
SIZE A4		VERIFIED	GC	DATE:— 16.10.2024		SHEET:— 01/08		

Notes:

- 1) All cable length were estimated using available scan data & vessel drawings and the length shall be verified/checked at site before installing by yard.
- 2) Consumables like **Cable trays**(If required), Cable glands, lugs, cable ties, flat bars, nut & bolts **etc.** required for the electric works not included in the list and these are to be procured based on actual installation at site by yard/owner.
- 3) All new cables need to be laid shortest route as much as possible based on the sitecondition or on existing cable trays by shipyard
- 4) Cable used should be shipboard cables designed according to IEC 60092.Flame retardent according to IEC 60332-1-2 / 60332-3-22
- 5) In general,cables shall be of cross linked polyethylene (XLPE) insulated,steel wire braided or copper wire braided,with thermoplastic polyolefin out sheath.
- 6) All cables are to be supplied onboard in full drum,without cutting
- 7) *' Cables and cable glands used in Hazardous area shall be in compliance with class requirements.
- 8) Cables of 4-20mA and RS485 signals need shield to earth just at one side.
- 9) All cables are to be supplied in full drum without cutting.
- 10) Refer Valve Configuration sheet & Connection sheet attached (Page-04/08)
- 11) Screened cables are to be used for signal cables
- 12) Owner to check and confirm whether vessel's existing remote control valve system is capable of accomodating new control valves due to BWTS addition.
- 13) Deleted items are marked in '**red**' and updated ones in '**green**'

Reference Drawings :

1. GSPL-P1482-EL-0001 Electrical Load Analysis
2. GSPL-P1482-EL-0003 Wiring Diagram of Power
3. GSPL-P1482-EL-0002 Electrical Block Diagram for BWTS
- 4.GSPL-P1482-ME-0001 Equipment Arrangement Drawing for BWTS
5. BIOSEA maker drawing

SUMMARY

CABLE MTO				
SL NO	CABLE SIZE	TOTAL LENGTH (M)	CABLE TYPE	REMARKS
1	1X2.5	6	EARTH CABLE	
2	1X6	4	EARTH CABLE	
3	2X0.75	402	SIGNAL/CONTROL CABLE	
4	3X10	46	POWER CABLE ARMOURED	
5	3X2.5	70	POWER CABLE ARMOURED	
6	4X0.75	24	SIGNAL CABLE	
7	4X1.5	18	POWER CABLE ARMOURED	
8	4X2.5	18	POWER CABLE ARMOURED	
9	4X6	12	POWER CABLE ARMOURED	
10	7X0.75	96	SIGNAL CABLE	
11	4X1.5	18	SIGNAL CABLE	
12	2X0.5	12	MAKER SUPPLY CABLE	
13	2X0.75	36	MAKER SUPPLY CABLE	
14	5X0.5	24	MAKER SUPPLY CABLE	
15	2X2.5	24	MAKER SUPPLY CABLE	
Note: Refer Page 05 onwards for more details of the above mentioned cables				

LIMIT SWITCH MTO		
SL NO.	VALVES	LIMIT SWITCH QTY
1	BV1	1
2	BV2	1
3	BV3	1
4	BV4	1
5	BV5	1
6	BV6	1
7	BV7	1
8	BV8	1
9	BV9	1
10	BV10	1
11	BV11	1
12	BAV03	1
13	BAV04	1
14	BAV05	1
15	BAV06	1
16	BAV07	1
17	BAV08	1
TOTAL		17

CIRCUIT BREAKER/FUSE DETAILS:

Existing Spare breakers/Fuse	Equipment to be served	KW/Amp rating of the equipment	Required breaker/Fuse size	Qty (in nos)	Remarks
Additional 440V Feeder Panel	BWMS DISTRIBUTION BOARD/SWITCHBOARD CABINET (PCO)	16.04kW/26.3A	# 440V,3PH, 100/40A	1	New breaker of 100/40A to be added in 440V FP
24V DC Supply	BYPASS VALVE LOGIC BOX	AS PER THE VENDOR	24V DC, 10A	1	New or existing spare breaker of 10A from ship's source.

SL NO	CABLE TAG	CABLE SIZE	FROM EQUIP.		TO EQUIPMENT		CABLE TYPE	FUNCTION	Approx CABLE LENGTH (METERS)	REMARKS
			NAME	LOCATION	NAME	LOCATION				
1	WPS	3X10	MSB -SHIP SUPPLY 440V	BELLOW DECK	BWMS DITRIBUTION BOARD/SWITCHBAORD CABINET PCO	BELLOW DECK	POWER CABLE ARMoured	POWER SUPPLY	46	
2	WA0	4X6	BWMS DITRIBUTION BOARD/SWITCHBAORD CABINET PCO	BELLOW DECK	CONTROL CABINET A0	BELLOW DECK	POWER CABLE	POWER SUPPLY	12	
3	WC1	4X0.75	BWMS DITRIBUTION BOARD/SWITCHBAORD CABINET PCO	BELLOW DECK	ELECTRONIC BALLAST ELC1.1	BELLOW DECK	CONTROL CABLE	CONTROL CABLE	12	
4	WB1	3X2.5	BWMS DITRIBUTION BOARD/SWITCHBAORD CABINET PCO	BELLOW DECK	ELECTRONIC BALLAST ELC1.2	BELLOW DECK	POWER CABLE	POWER SUPPLY	12	
5	WB2	3X2.5	BWMS DITRIBUTION BOARD/SWITCHBAORD CABINET PCO	BELLOW DECK	ELECTRONIC BALLAST ELC1.1	BELLOW DECK	POWER CABLE	POWER SUPPLY	12	
6	WFT02	2X0.75	BWMS DITRIBUTION BOARD/SWITCHBAORD CABINET PCO	BELLOW DECK	FLOW TRANSMITTER FT02	BELLOW DECK	CONTROL CABLE	POWER SUPPLY	12	
7	WC2	4X0.75	ELECTRONIC BALLAST ELC1.1	BELLOW DECK	ELECTRONIC BALLAST ELC1.2	BELLOW DECK	CONTROL CABLE	CONTROL CABLE	12	
8	W1	2X0.75	ELECTRONIC BALLAST ELC1.1	BELLOW DECK	ELECTRONIC BALLAST ELC1.2	BELLOW DECK	MAKER CABLE	MAKER SUPPLY	12	
9	WL1.1	2X2.5	ELECTRONIC BALLAST ELC1.1	BELLOW DECK	UV ASSEMBLY	BELLOW DECK	MAKER CABLE	MAKER SUPPLY	12	
10	WL1.2	2X2.5	ELECTRONIC BALLAST ELC1.2	BELLOW DECK	UV ASSEMBLY	BELLOW DECK	MAKER CABLE	MAKER SUPPLY	12	
11	W0	2X0.75	ELECTRONIC BALLAST ELC1.1	BELLOW DECK	CONTROL CABINET A0	BELLOW DECK	MAKER CABLE	MAKER SUPPLY	12	
13	WV06	7X0.75	CONTROL CABINET A0	BELLOW DECK	V06	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
17	WV11	7X0.75	CONTROL CABINET A0	BELLOW DECK	V11	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
18	WV04	7X0.75	CONTROL CABINET A0	BELLOW DECK	V04	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
19	WP01	4X2.5	CONTROL CABINET A0	BELLOW DECK	PUMP P01	BELLOW DECK	POWER CABLE	POWER CABLE	18	
20	WV03	7X0.75	CONTROL CABINET A0	BELLOW DECK	V03	BELLOW DECK	CONTROL CABLE	CONTROL CABLE	12	
21	WV01	7X0.75	CONTROL CABINET A0	BELLOW DECK	V01	BELLOW DECK	CONTROL CABLE	CONTROL CABLE	12	

SL NO	CABLE TAG	CABLE SIZE	FROM EQUIP.		TO EQUIPMENT		CABLE TYPE	FUNCTION	Approx CABLE LENGTH (METERS)	REMARKS
			NAME	LOCATION	NAME	LOCATION				
22	WV02	7X0.75	CONTROL CABINET A0	BELLOW DECK	V02	BELLOW DECK	CONTROL CABLE	CONTROL CABLE	12	
23	WV13	2X0.75	CONTROL CABINET A0	BELLOW DECK	V13	BELLOW DECK	CONTROL CABLE	CONTROL CABLE	12	
24	WM11	4X1.5	CONTROL CABINET A0	BELLOW DECK	FILTER MOTOR M11	BELLOW DECK	POWER CABLE	POWER CABLE	18	
25	WFT01	7X0.75	CONTROL CABINET A0	BELLOW DECK	FLOW TRANSMITTER FT01	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
26	WPT12	2X0.75	CONTROL CABINET A0	BELLOW DECK	PRESS. TRANSMITTER PT12	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
27	WPT11	2X0.75	CONTROL CABINET A0	BELLOW DECK	PRESS. TRANSMITTER PT11	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
28	WV12	2X0.75	CONTROL CABINET A0	BELLOW DECK	V12	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
29	WPT01	2X0.75	CONTROL CABINET A0	BELLOW DECK	PRESS. TRANSMITTER PT01	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
30	WUV01	5X0.5	CONTROL CABINET A0	BELLOW DECK	UV01	BELLOW DECK	MAKER CABLE	MAKER SUPPLY	12	
31	WTT01	2X0.75	CONTROL CABINET A0	BELLOW DECK	TEMP. TRANSMITTER TT01	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
32	WV05	2X0.75	CONTROL CABINET A0	BELLOW DECK	V05	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
33	WCT01	7X0.75	CONTROL CABINET A0	BELLOW DECK	CONDUCTIVITY TRANSMITTER CT01	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	12	
34	WFC	2X0.75	FLOW METER F	BELLOW DECK	FLOW TRANSMITTER FT01	BELLOW DECK	MAKER CABLE	MAKER SUPPLY	12	
35	WFS	2X0.5	FLOW METER F	BELLOW DECK	FLOW TRANSMITTER FT01	BELLOW DECK	MAKER CABLE	MAKER SUPPLY	12	
36	WUV02	5X0.5	UV1.1	BELLOW DECK	UV1.2	BELLOW DECK	MAKER CABLE	MAKER SUPPLY	12	
37	WPEPC0	1X6	BWMS DITRIBUTION BOARD/SWITCHBAORD CABINET PCO	BELLOW DECK	GROUND	BELLOW DECK	POWER CABLE	EARTHING	2	
38	WPEP01	1X2.5	PUMP P01	BELLOW DECK	GROUND	BELLOW DECK	POWER CABLE	EARTHING	2	

SL NO	CABLE TAG	CABLE SIZE	FROM EQUIP.		TO EQUIPMENT		CABLE TYPE	FUNCTION	Approx CABLE LENGTH (METERS)	REMARKS
			NAME	LOCATION	NAME	LOCATION				
39	WPEM11	1X2.5	FILTER MOTOR M11	BELLOW DECK	GROUND	BELLOW DECK	POWER CABLE	EARTHING	2	
40	WPEFT01	1X2.5	FLOW TRANSMITTER FT01	BELLOW DECK	GROUND	BELLOW DECK	POWER CABLE	EARTHING	2	
41	WPEA0	1X6	CONTROL CABINET A0	BELLOW DECK	GROUND	BELLOW DECK	POWER CABLE	EARTHING	2	
42	WAUX	3X2.5	SHIP'S 24V DC SUPPLY	ENG ROOM	BYPASS VALVE LOGIC BOX	BELLOW DECK	POWER CABLE	POWER SUPPLY	46	
43	WS1	4X1.5	CONTROL CABINET A0	BELLOW DECK	BYPASS VALVE LOGIC BOX	BELLOW DECK	SIGNAL CABLE	SIGNAL CABLE	18	
44	BV1	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV1	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
45	BV2	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV2	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
46	BV3	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV3	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
47	BV4	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV4	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
48	BV5	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV5	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
49	BV6	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV6	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
50	BV7	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV7	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
51	BV8	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV8	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
52	BV9	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV9	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
53	BV10	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV10	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
54	BV11	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BV11	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Existing manual valve with limit switch
55	BAV03	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BAV03	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Newly added manual valve with limit switch

SL NO	CABLE TAG	CABLE SIZE	FROM EQUIP.		TO EQUIPMENT		CABLE TYPE	FUNCTION	Approx CABLE LENGTH (METERS)	REMARKS
			NAME	LOCATION	NAME	LOCATION				
56	BAV04	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BAV04	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Newly added manual valve with limit switch
57	BAV05	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BAV05	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Newly added manual valve with limit switch
58	BAV06	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BAV06	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Newly added manual valve with limit switch
59	BAV07	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BAV07	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Newly added manual valve with limit switch
60	BAV08	2X0.75	BYPASS VALVE LOGIC BOX	BELLOW DECK	BAV08	BELLOW DECK	SIGNAL CABLE	VALVE OPEN/CLOSE INDICATION	18	Newly added manual valve with limit switch
<p>Notes:</p> <p>BYPASS valve logic box to be purchased separately. Feedback cable from logic box to Biosea panel has to be checked by the vendor.</p> <p>Maker cables are to be checked and installed by the maker.</p> <p>The existing valve signals are to be taken from the common manifold</p> <p>Cable length distance between Conductivity sensor & Control Cabinet must be within 10meter.</p> <p>Cable length distance between Flowmeter & Control Cabinet must be within 10meter.</p>										