



B	29.10.2024	ISSUED FOR APPROVAL				UNK	MM	GC
A	26.10.2024	ISSUED FOR APPROVAL				UNK	MM	GC
REV	DATE	DESCRIPTION				MOD.BY	CKD.BY	APP.BY
REVISIONS								
				SHIP ORKIM POWER				
				TITLE ELECTRICAL MTO				
SCALE NTS		DRAWN	UNK	DRAWING NUMBER		HULL NUMBER		REV
		CHECKED	MM	GSPL-P1514-EL-0011		-----		B
SIZE A4		VERIFIED	GC	DATE:— 29.10.2024		SHEET:— 01/07		

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 glands, lugs, cable ties, flat bars, nut & bolts 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-P1514-EL-0001 Electrical Load Analysis
2. GSPL-P1514-EL-0003 Wiring Diagram of Power
3. GSPL-P1514-EL-0002 Electrical Block Diagram for BWTS
- 4.GSPL-P1514-ME-0001 Equipment Arrangement Drawing for BWTS
- 5.LS-350Ex Technical DWGs for 【ORKIM POWER】 20241010

SUMMARY

CABLE MTO				
SL NO	CABLE SIZE	TOTAL LENGTH (M)	CABLE TYPE	REMARKS
1	* 2X0.5	725	SIGNAL CABLE (SHIELDED)	* marked cables are to be suitable for installing in hazardous areas/Ex rated
2	* 2X2.5	30	POWER CABLE ARMORED	
3	* 3X0.5	120	POWER/SIGNAL CABLE (SHIELDED)	
4	* 4X1.0	230	POWER/SIGNAL CABLE (SHIELDED)	
6	* 4X4	80	LAMP POWER CABLE 1200V	
6	* 4X6	35	POWER CABLE	
7	* 7X1.0	240	SIGNAL CABLE (SHIELDED)	
8	10X0.5	90	SIGNAL CABLE (SHIELDED)	
9	2X0.5	290	SIGNAL CABLE (SHIELDED)	
10	2X2.5	30	POWER CABLE	
11	3X50	45	POWER CABLE	
12	4X1.0	30	SIGNAL CABLE (SHIELDED)	
13	ETHERNET	60	SIGNAL CABLE (SHIELDED)	
14	PVC CONDUIT WITH HEAT SHRINK FOR ELECTRICAL CABLES	Length to be as per site condition		
Note: Refer Page 04 onwards for more details of the above mentioned cables				

EX Proof LIMIT SWITCH MTO		
SL NO	VALVES	QTY
1	VALVE 15/1	1
2	VALVE 6/5	1
3	VALVE 6/4	1
4	VALVE 6/3	1
5	VALVE 6/1	1
6	VALVE 10/2	1
7	VALVE 10/1	1
8	VALVE BV4	1
9	VALVE BAV12	Valve Purchased with limit switch
TOTAL		8

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
No spare	Power Cabinet LSP-1	45.5 Kw	440V,3PH, 100/80A	1	New breaker of 100/100A to be added in 440V FP

SL NO	CABLE TAG	CABLE SIZE	FROM EQUIP.		TO EQUIPMENT		CABLE TYPE	FUNCTION	Approx CABLE LENGTH (METERS)	REMARKS
2	W33	* 2X2.5	POWER CABINET LSP-1	ENGINE ROOM BOTTOM PLATFORM	PRESSURIZATION CONTROL BOX LSK-220Ex	PUMP ROOM BOTTOM	POWER CABLE ARMORED	POWER SUPPLY 220VAC	30	
3	W34	* 4X1.0	PRESSURIZATION CONTROL BOX LSK-220Ex	PUMP ROOM BOTTOM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SIGNAL CABLE	FLOW SWITCH SIGNAL	15	
4	W35	* 2X0.5	PRESSURIZATION CONTROL BOX LSK-220Ex	PUMP ROOM BOTTOM	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	SIGNAL CABLE	REMOTE VENT SIGNAL	40	
5	W36	* 4X1.0	PRESSURIZATION CONTROL BOX LSK-220Ex	PUMP ROOM BOTTOM	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	SIGNAL CABLE	COMPLETE VENT./PXK ALARM	40	
6	W37	* 4X1.0	PRESSURIZATION CONTROL BOX LSK-220Ex	PUMP ROOM BOTTOM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SIGNAL CABLE	PXK OUTLET-FLOW SWITCH	15	
7	W38	* 2X0.5	PRESSURIZATION CONTROL BOX LSK-220Ex	PUMP ROOM BOTTOM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SIGNAL CABLE	PXK OUTLET VENT SOLENOID VALVE	15	
8	W27	* 4X4	POWER CABINET LSP-1	ENGINE ROOM BOTTOM PLATFORM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SHIELDED POWER CABLE	UV LAMP POWER SUPPLY	40	voltage > 1200V
9	W28	* 4X4	POWER CABINET LSP-1	ENGINE ROOM BOTTOM PLATFORM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SHIELDED POWER CABLE	UV LAMP POWER SUPPLY	40	voltage > 1200V
10	W24	* 4X6	POWER CABINET LSP-1	ENGINE ROOM BOTTOM PLATFORM	M3 FLUSHING PUMP	PUMP ROOM BOTTOM	POWER CABLE	POWER SUPPLY	35	
11	W23	* 4X1.0	POWER CABINET LSP-1	ENGINE ROOM BOTTOM PLATFORM	M2 BACKFLUSH MOTOR (LSF-350Ex)	PUMP ROOM BOTTOM	POWER CABLE	POWER SUPPLY	40	M2 IN FILTER
12	W19	* 2X0.5	CONTROL UNIT LSC-1L	ENGINE ROOM BOTTOM PLATFORM	FILTER LS-350Ex	PUMP ROOM BOTTOM	SHIELDED SIGNAL CABLE	PRESSURE TRANSMITTER OF FILTER INLET (PT1)	35	
13	W20	* 2X0.5	CONTROL UNIT LSC-1L	ENGINE ROOM BOTTOM PLATFORM	FILTER LS-350Ex	PUMP ROOM BOTTOM	SHIELDED SIGNAL CABLE	PRESSURE TRANSMITTER OF FILTER OUTLET (PT2)	35	
14	W12	* 4X1.0	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SIGNAL CABLE	UV SLEEVE WIPER	40	
15	W13	* 3X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SIGNAL CABLE	WIPER LIMIT SWITCH	40	
16	W14	* 3X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SIGNAL CABLE	WIPER LIMIT SWITCH	40	
17	W15	* 2X0.5	IT1 - UV TRANSMITTER	PUMP ROOM BOTTOM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SHIELDED SIGNAL CABLE	UV TRANSMITTER	20	To the safety barrier in UVR
18	W16	* 2X0.5	IT2 - UV TRANSMITTER	PUMP ROOM BOTTOM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SHIELDED SIGNAL CABLE	UV TRANSMITTER	20	To the safety barrier in UVR
19	W17	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SHIELDED SIGNAL CABLE	TEMP TRANSMITTER	40	

SL NO	CABLE TAG	CABLE SIZE	FROM EQUIP.		TO EQUIPMENT		CABLE TYPE	FUNCTION	Approx CABLE LENGTH (METERS)	REMARKS
20	W18	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SIGNAL CABLE	SOLENOID VENT VALVE	40	
21	W39	* 4X1.0	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	UV REACTOR LSV-350Ex	PUMP ROOM BOTTOM	SIGNAL CABLE	SAFETY BARRIER	40	
33	E01	* 4X1.0	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	ON SITE EMERGENCY STOP	6500 ENGINE ROOM PLATFORM	SIGNAL CABLE	ENERGENCY STOP SIGNAL ON SITE	40	
35	W21	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	PRESS TRANSMITTER OF FLUSHING PUMP INLET	PUMP ROOM BOTTOM	SHIELED SIGNAL CABLE	FLUSHING PUMP INLET PT SIGNAL	40	
36	W22	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	PRESS TRANSMITTER OF FLUSHING PUMP OUTLET	PUMP ROOM BOTTOM	SHIELED SIGNAL CABLE	FLUSHING PUMP OUTLET PT SIGNAL	40	
37	W04	* 3X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	FLOW METER FT	PUMP ROOM BOTTOM	POWER CABLE	POWER SUPPLY	40	
38	W05	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	FLOW METER FT	PUMP ROOM BOTTOM	SHIELED SIGNAL CABLE	FLOWRATE SIGNAL 4-20mA	40	
39	W06	* 7X1.0	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	FILTER INLET VALVE BV1	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	
40	W07	* 7X1.0	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	FILTER OUTLET VALVE BV2	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	
41	W08	* 7X1.0	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	DE-BALLASTING VALVE BV3	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	
42	W09	* 7X1.0	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	BYPASS VALVE BV4	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	
43	W10	* 7X1.0	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	FLOW CONTROL VALVE BV5	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	
44	W11	* 7X1.0	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	BACKFLUSH VALVE BV6	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	
45	W41	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	VALVE 15/1	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	External valve with limit switch
46	W42	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	VALVE 6/5	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	External valve with limit switch
47	W43	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	VALVE 6/4	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	External valve with limit switch
48	W44	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	VALVE 6/3	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	External valve with limit switch
49	W45	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	VALVE 6/1	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	External valve with limit switch

SL NO	CABLE TAG	CABLE SIZE	FROM EQUIP.		TO EQUIPMENT		CABLE TYPE	FUNCTION	Approx CABLE LENGTH (METERS)	REMARKS
50	W46	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	VALVE 10/2	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	External valve with limit switch
51	W47	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	VALVE 10/1	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	External valve with limit switch
52	W48	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	VALVE BV4	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	valve with limit switch
53	W49	* 2X0.5	CONTROL UNIT LSC-1L	6500 ENGINE ROOM PLATFORM	VALVE BAV12	PUMP ROOM BOTTOM	SIGNAL CABLE	SIGNAL CABLE	40	valve with limit switch