



	Gachsaran Polymer Industries Company HDPE Plant		
	Instrument Cable List for Refrigerator Package	 	
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Code1	<input type="checkbox"/> No Comment/ Approved (Applicable Only for "FOR REVIEW" and "For Approval" Documents) No comment and the document are released for Manufacturing.
Code2	<input type="checkbox"/> No Comment/ Approved with Note(s) Vendor/Sub-Contractor shall correct, revise and resubmit the document. The document is released for Manufacturing if changes incorporated.
Code3	<input checked="" type="checkbox"/> Commented Vendor/Sub-Contractor shall correct, revise and resubmit the document by the date specified. The document shall be revised under the Status of "R: Revised Issue". All corrected documents shall be resubmitted before starting the Manufacturing Process.
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Above checking results by EIED shall in no way relieve Vendor of any liability, obligation and responsibility out of the purchase order and the mutual agreement in writing.

 Energy Industries Engineering & Design co.	Date: Jan.31, 2026 Dept.: MA Signature: F.Hamooni
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00	20-Jan-26	IFR	R.G	F.T	A.M
Rev.	DATE	PURPOSE OF ISSUE	PREPARED	CHECKED	APPROVED



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COMPRESSOR C-6101A/B

No.	Service	Tag No.	Content of signal	SIGNAL Type	IS/NIS	Cable type	Cable size	Gland size	Cable Tag.	From	To	Length (Meter)	Remarks
1	Compressor A Suction pressure transmitter	PT-61111	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PT-61111	PT-61111	JB-UIA-611	10	
2	Common Discharge pressure transmitter	PT-61131	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PT-61131	PT-61131	JB-UIA-611	10	
3	Oil Supply- Compressor A pressure transmitter	PT-61113	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PT-61113	PT-61113	JB-UIA-611	10	
4	Upstream oil filter pressure transmitter	PT-61133	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PT-61133	PT-61133	JB-UIA-611	10	
5	Coalescer Element Outlet pressure transmitter	PT-61132	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PT-61132	PT-61132	JB-UIA-611	10	
6	Downstream oil filter pressure transmitter	PT-61134	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PT-61134	PT-61134	JB-UIA-611	10	
7	Compressor A Suction temperature transmitter	TT-61111	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	TT-61111	TT-61111	JB-UIA-611	10	
8	Oil Separator temperature transmitter	TT-61131	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	TT-61131	TT-61131	JB-UIA-611	10	
9	Oil header compressor temperature transmitter	TT-61132	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	TT-61132	TT-61132	JB-UIA-611	10	
10	Oil Separator level transmitter	LT-61131	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	LT-61131	LT-61131	JB-UIA-611	10	
11	Compressor A slide valve position sensor	ZE-61111	3-wire	Analogue	IS	(CU/XLPE/PVC/SWA/PVC) Blue	01Tx1.5mm ²	M20	ZE-61111	ZE-61111	JB-UIA-611	10	
12	Multi cable for JB-UIA-611 -#1				IS	By Client	19x2x1 mm ²	By Client	JB-UIA-611-1-UCP	JB-UIA-611	UCP-6101	400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
13	Compressor B Suction pressure transmitter	PT-61121	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PT-61121	PT-61121	JB-UIA-621	10	
14	Oil Supply- Compressor B pressure transmitter	PT-61123	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PT-61123	PT-61123	JB-UIA-621	10	
15	Compressor B Suction temperature transmitter	TT-61121	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	TT-61121	TT-61121	JB-UIA-621	10	
16	Compressor B slide valve position sensor	ZE-61121	3-wire	Analogue	IS	(CU/XLPE/PVC/SWA/PVC) Blue	01Tx1.5mm ²	M20	ZE-61121	ZE-61121	JB-UIA-621	10	
17	Multi cable for JB-UIA-621 -#1				IS	By Client	7x2x1 mm ²	By Client	JB-UIA-621-1-UCP	JB-UIA-621	UCP-6101	400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
18	ECONOMIZER TUBESIDE TEMPERATURE	TT-61141	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	TT-61141	TT-61141	JB-UIA-641	10	
19	ECONOMIZER TUBESIDE PRESSURE	PT-61141	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PT-61141	PT-61141	JB-UIA-641	10	
20	Chiller level transmitter	LT-61151	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	LT-61151	LT-61151	JB-UIA-641	10	
21	Chiller level control valve	LV-61151	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	LV-61151	LV-61151	JB-UIA-641	10	
22	Hot Gas Bypass control valve	PV-61151	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	PV-61151	PV-61151	JB-UIA-641	10	
23	ECONOMIZER TEMPERATURE CONTROL VALVE	TV-61141	4 to 20mA / 2-wire	Analogue	IS	Type 1	01Px1.5mm ²	M20	TV-61141	TV-61141	JB-UIA-641	10	
24	Multi cable for JB-UIA-641				IS	By Client	7x2x1 mm ²	By Client	JB-UIA-641-1-UCP	JB-UIA-641	UCP-6101	400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
25	COMPRESSOR -A- SLIDE VALVE 100%	ZSH-61111	24Vdc / **W	Digital	IS	Type3	02Px1.5mm ² /Pr 1	M20	ZSH-61111	ZSH-61111	JB-UIA-611	10	Pair 1
26	COMPRESSOR -A- SLIDE VALVE 0%	ZSL-61111	24Vdc / **W	Digital	IS	Type3	02Px1.5mm ² /Pr 2	M20	ZSL-61111	ZSL-61111	JB-UIA-611	10	Pair 2
27	Multi cable for JB-UIA-611 -#2		24Vdc / **W	Digital	IS	By Client	4x2x1 mm ²	By Client	JB-UIA-611-2-UCP	JB-UIA-611	UCP-6101	400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer



EL-01
Table'Header shall be repeat in all pages

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28	COMPRESSOR -B- SLIDE VALVE 100%	ZSH-61121	24Vdc / **W	Digital	IS	Type3	02Px1.5mm ² /Pr 1	M20	ZSH-61121	ZSH-61121	JB-UIA-621	10	Pair 1
29	COMPRESSOR -B- SLIDE VALVE 0%	ZSL-61121	24Vdc / **W	Digital	IS	Type3	02Px1.5mm ² /Pr 2	M20	ZSL-61121	ZSL-61121	JB-UIA-621	10	Pair 2
30	Multi cable for JB-UIA-621 -#2		24Vdc / **W	Digital	IS	By Client	4x2x1 mm ²	By Client	JB-UIA-621-2-UCP	JB-UIA-621	UCP-6101	400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
31	COMPRESSOR -A- SLIDE VALVE UNLOAD SOV	XY-61111	24Vdc / **W	Digital	NIS	Type 2	01Px2.5mm ²	M20	XY-61111	XY-61111	JB-UEV-612	10	
32	COMPRESSOR -A- SLIDE VALVE LOAD SOV	XY-61112	24Vdc / **W	Digital	NIS	Type 2	01Px2.5mm ²	M20	XY-61112	XY-61112	JB-UEV-612	10	
33	Multi cable for JB-UEV-612		24Vdc / **W	Digital	NIS	By Client						400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
34	COMPRESSOR -B- SLIDE VALVE UNLOAD SOV	XY-61121	24Vdc / **W	Digital	NIS	Type 2						10	
35	COMPRESSOR -B- SLIDE VALVE LOAD SOV	XY-61122	24Vdc / **W	Digital	NIS	Type 2						10	
36	Multi cable for JB-UEV-622		24Vdc / **W	Digital	NIS	By Client						400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
37	OIL RECOVERY VALVE SOV - COMPRESSOR DISCHARGE	XY-61151	24Vdc / **W	Digital	NIS	Type 2						10	
38	OIL RECOVERY VALVE SOV - CHILLER RECOVERY	XY-61152	24Vdc / **W	Digital	NIS	Type 2						10	
39	Multi cable for JB-UEV-652		24Vdc / **W	Digital	NIS	By Client	4x2x2.5 mm ²	By Client	JB-UEV-652-1-UCP	JB-UEV-652	UCP-6101	400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
40	Oil heater temp. control switch High/High High	EH6101/TSHH-EHG	24Vdc / **D	Digital	NIS	By Client				6101	MCC	400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
41													
42	COMPRESSOR -A- MOTOR CURRENT	IT-61111	4 to 20mA / 2-wire	Analogue	NIS	By Client					UCP-6101		1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer

EL-02

This signal shall not be connected to the MCC. Please route and connect all related I/O signals to the corresponding UCP, in accordance with the approved control philosophy and interface documents. Any deviation from this requirement is not acceptable and shall be revised accordingly prior to document approval.

EL-03

The specified type is incorrect. Please revise it to a 1 A current type. For this purpose, the Vendor shall use an analogue ammeter. If a 4-20 mA signal is required, the Vendor shall route this signal to the UCP. In that case, the 4-20 mA current signal from the MCC to the UCP shall be provided and submitted accordingly.



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43	COMPRESSOR -B- MOTOR CURRENT	IT-61121	4 to 20mA / 2-wire	Analogue	NIS	By Client	2Px1.5mm ² /Pr. 2	M20	TI-UCP-6101	MCC	UCP-6101	400	1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
	CP								Motor JB-B	UCP-6101			1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
	EP								Motor JB-B	UCP-6101	400		1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
	EP								Motor JB-A	UCP-6101			1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
	CP								Motor JB-A	UCP-6101	400		1-Cable will be supplied By Customer 2-Cable size shall be checked and confirmed by Customer
									DCS	UCP-6101	50		
									MCC	DCS	400		
									MCC	DCS	400		
									ESD	UCP-6101	50		
									UCP-6101	DCS	50		
									UCP-6101	DCS	50		

EL-03 Repeat

EL-04
Motor winding temperature signals for each motors shall be connected directly from the motor-related Junction Box (JB) to the MCC for immediate feeder trip.
There is no requirement and no justification for sending any feedback signal from the MCC to the Refrigeration UCP in this regard.(only fault status from Feeder of MCC Feeder will be send to UCP)
Accordingly, any feedback or interface of motor winding temperature from MCC to UCP is not required and shall be eliminated. instead of them modify to interconnect between Motor & MCC for Motor winding temperature (according to motor data sheet 2 number for each phase with spare)

53	Time Synchronization Signal	TS-6101	24Vdc/**D	Digital	NIS	By Client	4Px2.5mm ² /Pr. 2	M20	UCP-DCS	DCS	UCP-6101	50	
55	LCP-A- Switches												
56	LCP -A-Lamps												
57	LCP-B- Switches												
58	LCP -B-Lamps												
59	UCP to MCC (UCP Digital Output Command signals for main motor A, main motor B, oil pump, Elec. Heater :STT,STP, ETC)		24Vdc/**D	Digital	NIS	By Client	12x2x2.5 mm ²	By Client	Ho				
60	MCC to UCP (UCP Digital Input Status signals for main motor A, main motor B, oil pump, Elec. Heater : Running,Fault, ETC)		24Vdc/**D	Digital	NIS	By Client	12x2x2.5 mm ²	By Client	Ho				

EL-05
Please segregate all loads into the following categories and clearly define the interface between UCP and MCC accordingly.Loads intended to be controlled or monitored by the UCP shall be clearly identified and separated from MCC-controlled loads.Each load shall be assigned explicitly to either UCP or MCC, and mixed or unclear responsibility is not acceptable.
CM-6101A Refrigeration Unit Compressor (Type of Schematic : M2500-U-CP)
CM-6101B Refrigeration Unit Compressor (Type of Schematic : M2500-U-CP)
EH-6101 OIL HEATER FOR REFRIGERAN PACKAGE (Type of Schematic : H2-U)
PM-6111A LUBE OIL PUMP MOTOR A FOR REFRIGERANT COMPRESSOR A (Type of Schematic : M22-U-CP)
PM-6111B LUBE OIL PUMP MOTOR A FOR REFRIGERANT COMPRESSOR B (Type of Schematic : M22-U-CP)

EL-06
Please consider all signals according to type of schematic as EL-05 (Refer to Attachment for see related Schematic)



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61	Communication with DCS		Modbus TCP/IP	By Client			Hold	UCP	DCS	50	
62	Communication with DCS		Modbus TCP/IP	By Client			Hold	UCP	DCS	50	Redundant
63	UPS Power_110 Vac -#1		Power cable	CU/XLPE/PVC (600/1000) Black	02Cx6mm2		UPS-6101-1	Instrument PDP	UCP	400 m	1-Cable will be supplied By Customer
64	UPS Power_110 Vac -#2		Power cable	CU/XLPE/PVC (600/1000) Black	02Cx6mm2		UPS-6101-2	Instrument PDP	UCP	400 m	2-Cable size shall be checked and confirmed by Customer
65	Non-UPS Power_230Vac		Power cable	CU/XLPE/PVC (600/1000) Black	02Cx4mm2		NUPS-6101-1	Instrument PDP	UCP	400 m	

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1	Item	1					
2	DUTY	2 Wire Transmitter,					
3	INSTALLATION LOCATION	OUTDOOR					
4	INSTALLATION METHOD	-					
5	AMBIENT TEMP MIN / MAX	-20 °C / 48 °C					
6	CABLE TECHNICAL DATA						
7	MAKE	Moghan Cable					
8	TYPE	As per EN50288-7					
9	CONDUCTORS	Tinned Stranded Copper - IEC 60228 class 2					
10	INSULATION	XLPE					
11	CORE / PAIR / TRIAD	Twisted Pair					
12	IDENTIFICATION	Black - white					
13	SCREENING	Collective Aluminium/Polyester tape + tinned copper drain wire					
14	BEDDING	LSHF					
15	ARMOUR	Galvanised Steel Wire Armour (SWA)					
16	OUTER JACKET	LSHF					
17	OUTER SHEATH COLOUR	<i>Blue</i>					
18	CROSS SECTION	1.5 mm ²					
19	NUMBER OF CORES / PARE / TRIADS	1 Pair					
20	MAX. OPERATING VOLTAGE	300 / 500 Volt					
21	MIN. OPERATING TEMPERATURE	-20 °C					
22	MAX. OPERATING TEMPERATURE	+60 °C					
23	CONDUCTOR MAXIMUM TEMPERATURE	+90 °C					
24							
25	INNER SHEATH DIAMETER	7.7 mm					
26	OUTER SHEATH DIAMETER	12.5 mm					
27							
28	FLAME RETARDANT	IEC60332-1-2 / IEC 60332-3-24 (cat.C)					
29							
30							
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33							
34							
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1	Item	2				
2	DUTY	SOLENOID VALVE				
3	INSTALLATION LOCATION	OUTDOOR				
4	INSTALLATION METHOD	-				
5	AMBIENT TEMP MIN / MAX	-20 °C / 48 °C				
6	CABLE TECHNICAL DATA					
7	MAKE	Moghan Cable				
8	TYPE	As per EN50288-7				
9	CONDUCTORS	Tinned Stranded Copper - IEC 60228 class 2				
10	INSULATION	XLPE				
11	CORE / PAIR / TRIAD	Pair				
12	IDENTIFICATION	Black - white				
13	SCREENING	NA				
14	BEDDING	LSHF				
15	ARMOUR	Galvanised Steel Wire Armour (SWA)				
16	OUTER JACKET	LSHF				
17	OUTER SHEATH COLOUR	Gray				
18	CROSS SECTION	2.5 mm ²				
19	NUMBER OF CORES / PARE / TRIADS	1 Pair				
20	MAX. OPERATING VOLTAGE	300 / 500 Volt				
21	MIN. OPERATING TEMPERATURE	-20 °C				
22	MAX. OPERATING TEMPERATURE	+60 °C				
23	CONDUCTOR MAXIMUM TEMPERATURE	+90 °C				
24						
25	INNER SHEATH DIAMETER	8.9 mm				
26	OUTER SHEATH DIAMETER	13.7 mm				
27						
28	FLAME RETARDANT	IEC60332-1-2 / IEC 60332-3-24 (cat.C)				
29						
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1	Item				3	Rev.
2	DUTY				Switches	
3	INSTALLATION LOCATION				OUTDOOR	
4	INSTALLATION METHOD				-	
5	AMBIENT TEMP MIN / MAX				-20 °C / 48 °C	
6	CABLE TECHNICAL DATA					
7	MAKE				LATER	
8	TYPE				As per EN50288-7	
9	CONDUCTORS				Stranded Copper - IEC 60228 class 2	
10	INSULATION				XLPE	
11	CORE / PAIR / TRIAD				Twisted Pair	
12	IDENTIFICATION				Black - white	
13	SCREENING				Collective Aluminium/Maylar tape + tinned copper drain wire	
14	BEDDING				LSHF	
15	ARMOUR				Galvanised Steel Wire Armour (SWA)	
16	OUTER JACKET				LSHF	
17	OUTER SHEATH COLOUR				Blue	
18	CROSS SECTION				1.5 mm ²	
19	NUMBER OF CORES / PARE / TRIADS				2 Pair	
20	MAX. OPERATING VOLTAGE				300 / 500 Volt	
21	MIN. OPERATING TEMPERATURE				-20 °C	
22	MAX. OPERATING TEMPERATURE				+60 °C	
23	CONDUCTOR MAXIMUM TEMPERATURE				+90 °C	
24						
25	INNER SHEATH DIAMETER				Later	
26	OUTER SHEATH DIAMETER				Later	
27						
28	FLAME RETARDANT				IEC60332-1-2 / IEC 60332-3-24 (cat.C)	
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