Base Load Power Hub (BLPH)

TECHNICAL DATASHEET for Pressure, Temperature And Diff. Pressure Level Transmitters

Document Number: 123A90-DDL-IN-DS-40039

Document Class: 2

02	06/12/2024	Accepted for Construction (AFC)	VBA	LCA	DLO
01	29/08/2024	Accepted for Construction (AFC)	VBA	LCA	DLO
00	16/01/2024	Issue for Review (IFR)	VBA	LCA	DLO
Rev.	Date	Description	Prepared	Reviewed	Approved

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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ACCEPTED FOR CONSTRUCTION (AFC)
02	ACCEPTED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description

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GENERAL REQUIREMENTS / NOTES

1) This datasheet is to be read in conjunction with following documents:
   a) Instrumentation for Package Unit Specification (123A90-DDL-IN-SP-40094);
   b) Material Requisition (123A90-DDL-IN-MR-40040);
   c) Specification for Piping Material Classes (123A90-DDL-PP-SP-70000).

2) Ambient Temperature Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.

3) All materials including transmitters casing/housing shall be suitable for use in marine environment.

4) All transmitters shall be equipped with inbuilt electronic local indicators. Manufacturer shall ensure system continuity in case of local indicator failure or removal.

5) In general, all hazardous area equipment shall be certified Exd IIC (or IIB+H2) T1 for Zone 2, IP66 as per ATEX directive.

6) All flanges in ASME B31.3 and ASME B31.12 shall be Raised Face type.

7) Material test certificates MTCs shall be provided by Manufacturer for all valves, tubing & fittings. MTCs shall include EN 10204 3.1 certification for all metallic materials.

8) PED 2014/68/EU Pressure Equipment Directive 2014/68/EU shall apply.

9) The SS nameplate shall indicate the tag number, manufacture name, model number, serial number, size, rating and other items as required.

10) Information with asterisk (*) shall be confirmed or provided by manufacturer according to the service condition.

11) HART revision 7 protocol is required for all electronic device 4-20mA Smart type.

12) All Instrument used in Safety Application (ESD) shall be minimum SIL 2 Certified according to Std. IEC61508.

PRESSURE & DELTA PRESSURE TRANSMITTERS

13) The transmitter accuracy shall be better than 0.1% of calibrated span including the effects of linearity, hysteresis, and repeatability (better then 0.25% of span).

14) Pressure instruments on dirty and/or corrosive service shall be protected by a diaphragm seal.

15) Gold plating (5µm - 30µm) of the diaphragm or ceramic sensor shall be used in hydrogen service above a hydrogen partial pressure of 35 bara (500 psia).

16) Transmitters shall be equipped with local span and zero capability for convenient re-ranging of the transmitter at site.

17) Pressure range of transmitters shall be selected so that, normal operating pressure will be within 50% and 85% of calibrated range.

18) Pressure instruments operating high pressure alarms shall have upscale element burnout. Those on low pressure alarms shall fail to down scale position.

19) Pressure instruments installed in pulsating services and suction/discharge of reciprocating pumps or compressors shall be provided with pulsation dampeners.

20) Pressure instrument manifold shall be supplied by PT/LT/TT Vendor.

21) All the pressure instruments shall be suitably rated for the test pressures. Pressure elements shall be suitable to withstand 130% of full range without rupture of any components or the need to recalibrate the instrument.

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GENERAL REQUIREMENTS / NOTES

TEMPERATURE TRANSMITTERS

22) Temperature measurements shall be RTD-type, 3 wires or Platinum type 100, resistance tolerance class A, IEC 60751. Head transmitter shall have 4-20mA, HART, NAMUR NE43.

23) All temperature instrument shall be equipped with in-built electronic local indicator and thermowell.

24) Thermowell shall be of the flanged type, size 1 1/2" and in-line with the document Pipe Material Classes.

25) Thermowell insertion length may be reduced at no loss of accuracy where the flow regime is of a high Reynolds number (i.e., 1 x 107 or greater) in order to satisfy ASME PTC 19.3 TW requirements. Thermowell shall not be longer than strictly necessary to obtain required accuracy and to avoid vibration "cracking".

26) Thermowell will be the tapered-type unless straight or stepped types are required for vibration resistance.

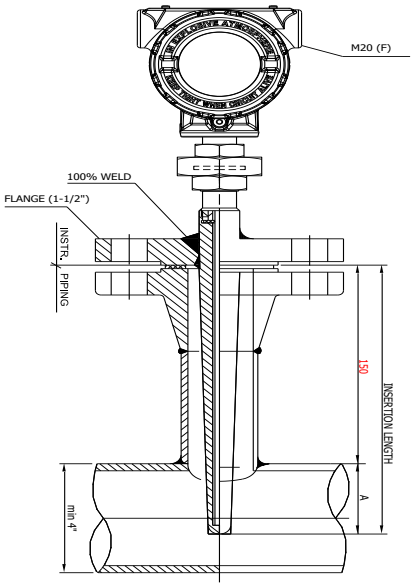
27) Each Thermowell will be provided with hydrotest certificates.

28) Thermowell strength calculations shall be performed for process systems according to ANSI/ASME Performance Test Codes ASME PTC 19.3 TW requirements.

29) Thermowell inner diameter suitable for TE/TI elements of 6.5 mm should be used.

30) Thermowells for vessels shall be typically 450mm insertion length to allow adequate protrusion through the nozzle.

31) TYPICAL BARSTOCK THERMOWELLS FOR THERMORESISTANCE



INSERTION LENGTH "U" (mm) (Based on API RP-551)	
PIPE SIZE	"U"
4"	220
6"	280
8"	300
10"	330
12"	350
14"	370
16"	400
≥ 18"	425
EQUIPMENT	NOTE (30)

- All dimension are in millimeters.
- Well and flange material according to datasheet, with AISI 316 as minimum
- Tollerances: - Lenghts : ±0.5 / - Diameters : ±0.2.
- Stress Vibration Frequency calculation is mandatory and shall be carried out for all line mounted thermowells.
- Actual insertion lenght "U" to be verified according Stress Vibration Frequency calculation.

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GENERAL	1	Tag Number						43-LT-001			
	2	Service						HYDROGEN VENT KO DRUM (V-43001)			
	3	P&ID Number						123A90-DDL-PR-PID-80029			
	4	Equipment Number		Line Number				V-43001		-	
	5	Area Classification						ATEX Zone2 - IIC (IIB+H2) T1			
	6	Mounting						REMOTE			
PROCESS CONDITIONS	7	Fluid		State				WATER		LIQUID	
	8	Pressure	Unit	Min.	Oper.	Max.				Atm (op.)	
	9	Temperature	Unit	Min.	Oper.	Max.				Amb. (op)	
	10	Design Pressure		Min.		Max.		3.5 barg			
	11	Design Temperature		Min.		Max.		-10 / + 80 °C			
	12	Lower Oper. S.G.		Lower Oper. Visc.				1		1 cP	
	13	Vacuum		Over Pressure				-			
	14	Ambient Temperature						Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.			
TRANSMITTER	15	Application						LEVEL MEASUREMENT			
	16	Type						Diaphragm			
	17	ATEX Certification		Ingress Protection				Atex Ex II 2G Ex db IIC T5		IP66	
	18	Housing		Paint				SS AISI 316/36L		-	
	19	Power Supply		Load Resist				24 Vdc		-	
	20	Process Connection		Electrical Connection				2 x 1/4" NPT-F		N. 2 M20x1.5mm	
	21	Accuracy		Response Time				0.07% Nominal Range		-	
	22	Max. Static Pressure		Element Material				100 barg		AISI 316/316L Gold Plate	
	23	Wetted O - Ring Material		Fill Fluid				-		Dow Corning Silicon Oil	
	24	Instrument Range		Min.		Max.		0 mbar		350 mbar	
	25	Calibration Range		Min.		Max.		0 mmH2O		560 mmH2O	
	26	Elevation		Suppresion				-		-	
	27	Allow.Oper. Pressure		Allow.Oper.Temp.				Static Pressure 100 bar		85°C	
	28	SIL Certification		PED Certification				-		Required (8)	
DIAPHRAGM SEAL	29	Process Conn. & Rating		Diaphragm Material				-		-	
	30	Capillary Material		Fill Fluid				-		-	
	31	Housing Material		Allow.Oper.Temp.				-		-	
	32										
COMMUNICATION AND SOFTWARE	33	Communication Type		Signal Type				Smart HART Rev. 6		4-20mA Loop Powered 24 Vdc	
	34	D D Revision		CFF Revision				-		-	
	35	Hart Descriptor		Hart Tag				-		-	
	36	Internal Diagnostics		Capacitance				-		-	
	37	Segment		Device Address				-		-	
	38	Device Class		Simulate				-		-	
	39	Nominal Current		Operating Voltage				-		-	
	40										
OPTIONS	41	Manifold Supplied		Manifold Rating				Required (5-valves)		6000 PSI	
	42	Process Connection		Manifold Model				1/2" NPT-F		MAN5-D1	
	43	Integral Meter		Scale				Integral LCD Display			
	44	Lightning Protection		Hydrostatic Testing				-		Required	
	45	Mounting Brackets						Required			
	46	Barrier - Manufacturer / Model						-			
	47										
PURCHASE	48	Manufacturer						TERRANOVA			
	49	Model						SST77B-H-9-D-2-3-0-0-4 + MAN5-D1			
	50	Purchase Order Number						1724000979			
	51										

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
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INSTRUMENT DATASHEET

Level DP Transmitter

CROSSWIND

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Code: 501 | Dwg. No.:123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number						43-LT-003			
	2	Service						HYDROGEN VENT (Q-43004)			
	3	P&ID Number						123A90-DDL-PR-PID-80029			
	4	Equipment Number		Line Number				Q-43004		-	
	5	Area Classification						ATEX Zone2 - IIC (IIB+H2) T1			
	6	Mounting						REMOTE			
PROCESS CONDITIONS	7	Fluid		State				Mono Ethylene Glyco (40%vol) + water		LIQUID	
	8	Pressure	Unit	Min.	Oper.	Max.				Atm (op.)	
	9	Temperature	Unit	Min.	Oper.	Max.				Amb. (op)	
	10	Design Pressure		Min.		Max.		3.5 barg			
	11	Design Temperature		Min.		Max.		-10 / + 80 °C			
	12	Lower Oper. S.G.		Lower Oper. Visc.				1.063		1 - 2 cP	
	13	Vacuum		Over Pressure				-			
	14	Ambient Temperature						Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.			
TRANSMITTER	15	Application						LEVEL MEASUREMENT			
	16	Type						Diaphragm			
	17	ATEX Certification		Ingress Protection				Atex Ex II 2G Ex db IIC T5		IP66	
	18	Housing		Paint				SS AISI 316/36L		-	
	19	Power Supply		Load Resist				24 Vdc		-	
	20	Process Connection		Electrical Connection				2 x 1/4" NPT-F		N. 2 M20x1.5mm	
	21	Accuracy		Response Time				0.07% Nominal Range		-	
	22	Max. Static Pressure		Element Material				100 barg		AISI 316/316L Gold Plate	
	23	Wetted O - Ring Material		Fill Fluid				-		Dow Corning Silicon Oil	
	24	Instrument Range		Min.		Max.		0 mbar		350 mbar	
	25	Calibration Range		Min.		Max.		0 mmH2O		1000 mmH2O	
	26	Elevation		Suppresion				-		-	
	27	Allow.Oper. Pressure		Allow.Oper.Temp.				Static Pressure 100 bar		85°C	
	28	SIL Certification		PED Certification				-		Required (8)	
DIAPHRAGM SEAL	29	Process Conn. & Rating		Diaphragm Material				-		-	
	30	Capillary Material		Fill Fluid				-		-	
	31	Housing Material		Allow.Oper.Temp.				-		-	
	32										
COMMUNICATION AND SOFTWARE	33	Communication Type		Signal Type				Smart HART Rev. 6		4-20mA Loop Powered 24 Vdc	
	34	D D Revision		CFF Revision				-		-	
	35	Hart Descriptor		Hart Tag				-		-	
	36	Internal Diagnostics		Capacitance				-		-	
	37	Segment		Device Address				-		-	
	38	Device Class		Simulate				-		-	
	39	Nominal Current		Operating Voltage				-		-	
	40										
OPTIONS	41	Manifold Supplied		Manifold Rating				Required (5-valves)		6000 PSI	
	42	Process Connection		Manifold Model				1/2" NPT-F		MAN5-D1	
	43	Integral Meter		Scale				Integral LCD Display			
	44	Lightning Protection		Hydrostatic Testing				-		Required	
	45	Mounting Brackets						Required			
	46	Barrier - Manufacturer / Model						-			
	47										
PURCHASE	48	Manufacturer						TERRANOVA			
	49	Model						SST77B-H-9-D-2-3-0-0-4 + MAN5-D1			
	50	Purchase Order Number						1724000979			
	51										

Notes:

No.	Date	By	Chkd	Appr	Description
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01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

Level DP Transmitter

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Code: 501 | Dwg. No.:123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-001	
	2	Service		H2 FROM ELECTR. (A-20000) TO H2 STORAGE VESSELS	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80013	1"-HY-007-03HSS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	4(Min.) / 30(Max)
	10	Temperature Des.	Oper. [°C]	-10 / 80	5(Min.) / 65(Max.)
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model		-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

Pressure Transmitter

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 Rev 02

GENERAL	1	Tag Number		25-PT-002	
	2	Service		H2 FROM ELECTR. (A-20000) TO H2 STORAGE VESSELS	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80013	1"-HY-007-03HSS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	4(Min.) / 30(Max)
	10	Temperature Des.	Oper. [°C]	-10 / 80	5(Min.) / 65(Max.)
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model		-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
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INSTRUMENT DATASHEET

Pressure Transmitter

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 Rev 02

GENERAL	1	Tag Number		25-PT-004	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001A)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80015	V-25001A
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 Dwg. No.: 123A90-DDL-IN-DS-40039 Rev 02

GENERAL	1	Tag Number		25-PT-035	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001A)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80015	V-25001A
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 Rev 02

GENERAL	1	Tag Number		25-PT-006	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001B)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80016	V-25001B
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-037	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001B)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80016	V-25001B
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-008	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001C)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80017	V-25001C
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-040	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001C)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80017	V-25001C
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-009	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001D)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80018	V-25001D
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-043	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001D)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80018	V-25001D
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Pressure Transmitter

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-011	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001E)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80019	V-25001E
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-046	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001E)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80019	V-25001E
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-012	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001F)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80020	V-25001F
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-049	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001F)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80020	V-25001F
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	100
	15	Calibration Range Min.	Max. [barg]	0	40
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 Rev 02

GENERAL	1	Tag Number		25-PT-055A	
	2	Service		HYDROGEN FROM STORAGE VESSEL HEADER TO FUEL CELL (A-80000)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80014	2"-HY-023-01HSS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	10	4(Min.) / 6.5(Max)
	10	Temperature Des.	Oper. [°C]	100	Amb
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	10
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		25-PT-055B	
	2	Service		HYDROGEN FROM STORAGE VESSEL HEADER TO FUEL CELL (A-80000)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80014	2"-HY-023-01HSS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	10	4(Min.) / 6.5(Max)
	10	Temperature Des.	Oper. [°C]	100	Amb
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	10
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		43-PT-001	
	2	Service		HYDROGEN VENT KO DRUM (V-43001)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80029	V-43001
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	3,5	Atm
	10	Temperature Des.	Oper. [°C]	-10 / + 80	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	5
	15	Calibration Range Min.	Max. [barg]	0	3,5
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-G-2-9-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		50-PT-001	
	2	Service		SEA WATER FROM PUMP P-50001A TO SEA WATER TREAT.	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80021	1-1/2"-SWS-031-01SD-E
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		SEA WATER	
	9	Pressure Des.	Oper. [barg]	17.7	15
	10	Temperature Des.	Oper. [°C]	100	+1.3 / +20.2
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	18
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		Monel 400 (17)	
	19	Body Material	Body Rating	AISI 316 SS	20 bar
	20	Process Flanges Material		-	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L (3, 7, 8)
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	Inner Diaphragm Seal	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required (8)
DIAPHRAGM SEAL	29	Process Connection & Rating		2"	150# RF ASME B 16.5
	30	Diaphragm Material	Housing Material	Monel 400	AISI 316/316L
	31	Fill Fluid	Capillary Material	Silicone oil	S.S. Capillary
	32	Capillary Type	Capillary Length	Required	3 m
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required in Option	-
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-9-2-1-4 +SEA03 + CAP-2-03	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Pressure Transmitter

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		50-PT-002	
	2	Service		SEA WATER FROM PUMP P-50001B TO SEA WATER TREAT.	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80021	1-1/2"-SWS-033-01SD-E
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		SEA WATER	
	9	Pressure Des.	Oper. [barg]	17.7	15
	10	Temperature Des.	Oper. [°C]	100	+1.3 / +20.2
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	18
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		Monel 400 (17)	
	19	Body Material	Body Rating	AISI 316 SS	20 bar
	20	Process Flanges Material		-	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L (3, 7, 8)
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	Inner Diaphragm Seal	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required (8)
DIAPHRAGM SEAL	29	Process Connection & Rating		2"	150# RF ASME B 16.5
	30	Diaphragm Material	Housing Material	Monel 400	AISI 316/316L
	31	Fill Fluid	Capillary Material	Silicone oil	S.S. Capillary
	32	Capillary Type	Capillary Length	Required	3 m
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required in Option	-
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-9-2-1-4 +SEA03 + CAP-2-03	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		50-PT-014	
	2	Service		WASTE WATER FROM HEADER TO BRINE DISCHARGE CAISSON (B-50014)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80025	1-1/2"-WW-073-01CS-H
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		WASTE WATER	
	9	Pressure Des.	Oper. [barg]	17.7	Atm
	10	Temperature Des.	Oper. [°C]	100	Amb
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	18
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-0-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 Dwg. No.: 123A90-DDL-IN-DS-40039 Rev 02

GENERAL	1	Tag Number		63-PT-003	
	2	Service		IA FROM PACKAGE A-63000 TO AIR DISTR.HEADER	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80027	1-1/2"-IA-108-01SS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		INSTRUMENT AIR	
	9	Pressure Des.	Oper. [barg]	11	4(Min.) / 10(Max)
	10	Temperature Des.	Oper. [°C]	100	Amb
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	11
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-0-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		63-PT-004	
	2	Service		IA FROM PACKAGE A-63000 TO AIR DISTR.HEADER	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80027	1-1/2"-IA-108-01SS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		INSTRUMENT AIR	
	9	Pressure Des.	Oper. [barg]	11	4(Min.) / 10(Max)
	10	Temperature Des.	Oper. [°C]	100	Amb
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	11
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-0-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

Pressure Transmitter

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		64-PT-031A	
	2	Service		NITROGEN FROM U-64000 TO NITROGEN DISTRIBUTION HEADER	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80027	1"-N-100-01CS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		NITROGEN	
	9	Pressure Des.	Oper. [barg]	10	7(Max.)
	10	Temperature Des.	Oper. [°C]	100	Amb
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	10
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-0-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

Pressure Transmitter

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		64-PT-031B	
	2	Service		NITROGEN FROM U-64000 TO NITROGEN DISTRIBUTION HEADER	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80027	1"-N-100-01CS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		NITROGEN	
	9	Pressure Des.	Oper. [barg]	10	7(Max.)
	10	Temperature Des.	Oper. [°C]	100	Amb
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	10
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-0-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 Rev 02

GENERAL	1	Tag Number		64-PT-002	
	2	Service		NITROGEN FROM U-64000 TO NITROGEN DISTRIBUTION HEADER	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80027	1"-N-100-01CS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		NITROGEN	
	9	Pressure Des.	Oper. [barg]	10	7(Max.)
	10	Temperature Des.	Oper. [°C]	100	Amb
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	10
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-0-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Pressure Transmitter

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number		80-PT-002	
	2	Service		H2 FROM STORAGE VESSEL TO FUEL CELL (A-80000)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80012	2"-HY-023-01HSS-N
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE (HOLD 3)	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	10	4(Min.)/6.5(Max.)
	10	Temperature Des.	Oper. [°C]	100	Amb
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	10
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		AISI 316/316L + Gold Plate (17)	
	19	Body Material	Body Rating	AISI 316/316L	200 bar
	20	Process Flanges Material		Integral 2 Way Manifold (22)	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	1/2" NPT(F)	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	29	Process Connection & Rating		-	
	30	Diaphragm Material	Housing Material	-	-
	31	Fill Fluid	Capillary Material	-	-
	32	Capillary Type	Capillary Length	-	-
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-0-2-1-4 + MAN2-R6	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Pressure Transmitter

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Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 | Rev 02

GENERAL	1	Tag Number					50-TT-001 / 50-TE-001 / 50-TW-001			
	2	Service					SEA WATER LIFT PUMP(B-50013A&B) DISCHARGE			
	3	P&ID Number	Area Classification				123A90-DDL-PR-PID-80022			ATEX Zone2-IIC(IIB+H2) T1
PIPE LINE	4	Line Number	Equipment Numbrer				1-1/2"-SWS-035-01SD-E			-
	5	Line Size	Schedule				4"			3.05 Thk (mm)
	6	Pipe Material	Pipe Insulation				ASTM A790 UNS S32760			ELECTRICALLY HEAT TRACED
PROCESS CONDITIONS	7	Fluid	Phase				SEA WATER SUPPLY			LIQUID
	8	Temperature	Min.	Oper.	Max.		1.3 °C	-		20.2 °C
	9	Pressure	Min.	Oper.	Max.			5 barg		
	10	Design Temperature	Min.		Max.		-29 °C			100 °C
	11	Design Pressure	Min.		Max.		7.6 barg			
	12	Vibrations	Thermal Shock				ASME PTC19.3 (28, 31)			-
	13	Erosion	Corrosion				-			-
	14	Flow Rate Max.	Velocity Max.				2500 kg/h			0.08 m/s
	15	Density	Molecular Weight				1000 kg/m^3			
	16	Viscosity	Oper. Spec. Gravity				1 cP			
	17	Ambient Temperature					Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.			
ELEMENT	18	T/C	Type				-			
	19		Epoxy.	Ground		Unground	-	-		-
	20		Sheath Material							
	21	RTD	Type				RTD, 3 wire PT100			
	22		Sensor Material		Insulator Material		Platinum			MgO
	23		Tollerance Class		Resistance		Class A according IEC 60751			100 ohm at 0°C/138.5 at 100°C
	24	Single/Duplex/Other	2/3/4 Wire				Single			3 Wire
	25	Diameter	Length				6 mm (32)			To be assembled with TW
	26									
TRANSMITTER	27	Type	Mounting				4-20 mA - HART/Smart			Integral, head mounted
	28	Input	Head Material				-			-
	29	ATEX Certification	Ingress Protection				Atex Ex II 2G Ex db IIC T5			IP-66
	30	Housing	Painting				AISI 316/316L (3, 7, 8)			-
	31	Power Supply	Load Resistance				24 Vdc			220 ÷ 640 Ω (for HART)
	32	Electrical Connection	Input		Output		-			N. 2 M20x1.5mm
	33	Accuracy	Responce Time				as per IEC 60751 Cl. A			-
	34	Linearisation	C J Compensation				as per IEC 60751 Cl. A			-
	35	Instrument Range	Min.		Max.		-50 °C			450 °C
	36	Calibration Range	Min.		Max.		0			50 °C
	37	SIL Certification					-			
	38	PED Certification					Required (8)			
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type				HART 6			4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision				-			-
	41	Hart Descriptor	Hart Tag				-			-
	42	Internal Diagnostics	Capacitance				-			-
	43	Segment	Device Address				-			-
	44	Device Class	Simulate				-			-
	45	Nominal Current	Operating Volage				-			-
	46									
WELL	47	Process Connection	Rating				1-1/2" Flanged			150# RF ASME B31.3
	48	Material	Type				ASTM A182 F53/F55			Tapered type (29)
	49	Construction Type	Internal Connection				Barstock Tapered			1/2" NPT-F
	50	Length	Overall	Insertion		Immersion	(34)	220 mm (34)		70 mm (34)
	51	Treatments	Finish				-			-
	52	Tip Thickness	Bore Diameter				7 mm			6.5 mm
	53	Insertion Diam. Min.	Max.				28 mm			18 mm
PURCHASE	54	Manufacturer					TERRANOVA			
	55	Model					SST72-TH-1-C-9-1-B-4-3 + TWE			
	56	Purchase Order Number					1724000979			

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
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00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

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Temperature Transmitter

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Code: Rev 02

GENERAL	1	Tag Number					50-TT-002 / 50-TE-002 / 50-TW-002			
	2	Service					WASTE WATER FROM HEADER TO BRINE DISCHARGE CAISSON (B-50014)			
	3	P&ID Number	Area Classification				123A90-DDL-PR-PID-80025			ATEX Zone2-IIC(IIB+H2) T1
PIPE LINE	4	Line Number	Equipment Numbrer				1-1/2"-WW-073-01CS-H			-
	5	Line Size	Schedule				4"			6.02 Thk (mm)
	6	Pipe Material	Pipe Insulation				ASTM A350 LF2			ELECTRICALLY HEAT TRACED
PROCESS CONDITIONS	7	Fluid	Phase				SEA WATER SUPPLY			LIQUID
	8	Temperature	Min.	Oper.	Max.			Amb		
	9	Pressure	Min.	Oper.	Max.			Atm		
	10	Design Temperature	Min.		Max.		-46 °C			100 °C
	11	Design Pressure	Min.		Max.		3.5 barg			
	12	Vibrations	Thermal Shock				ASME PTC19.3 (28, 31)			-
	13	Erosion	Corrosion				-			-
	14	Flow Rate Max.	Velocity Max.				10000 kg/h			0.34 m/s
	15	Density	Molecular Weight				1000 kg/m^3			
	16	Viscosity	Oper. Spec. Gravity				1 cP			
	17	Ambient Temperature					Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.			
ELEMENT	18	T/C	Type				-			
	19		Epoxy.	Ground		Unground	-		-	-
	20		Sheath Material							
	21	RTD	Type				RTD, 3 wire PT100			
	22		Sensor Material		Insulator Material		Platinum			MgO
	23		Tollerance Class		Resistance		Class A according IEC 60751			100 ohm at 0°C/138.5 at 100°C
	24	Single/Duplex/Other	2/3/4 Wire				Single			3 Wire
	25	Diameter	Length				6 mm (32)			To be assembled with TW
	26									
TRANSMITTER	27	Type	Mounting				4-20 mA - HART/Smart			Integral, head mounted
	28	Input	Head Material				-			-
	29	ATEX Certification	Ingress Protection				Atex Ex II 2G Ex db IIC T5			IP-66
	30	Housing	Painting				AISI 316/316L (3, 7, 8)			-
	31	Power Supply	Load Resistance				24 Vdc			220 ÷ 640 Ω (for HART)
	32	Electrical Connection	Input		Output		-			N. 2 M20x1.5mm
	33	Accuracy	Responce Time				as per IEC 60751 Cl. A			-
	34	Linearisation	C J Compensation				as per IEC 60751 Cl. A			-
	35	Instrument Range	Min.		Max.		-50 °C			450 °C
	36	Calibration Range	Min.		Max.		0			80 °C
	37	SIL Certification					-			
	38	PED Certification					Required (8)			
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type				HART 6			4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision				-			-
	41	Hart Descriptor	Hart Tag				-			-
	42	Internal Diagnostics	Capacitance				-			-
	43	Segment	Device Address				-			-
	44	Device Class	Simulate				-			-
	45	Nominal Current	Operating Volage				-			-
	46									
WELL	47	Process Connection	Rating				1-1/2" Flanged			150# RF ASME B31.3
	48	Material	Type				AISI 316/316L			Tapered type (29)
	49	Construction Type	Internal Connection				Barstock Tapered			1/2" NPT-F
	50	Length	Overall	Insertion		Immersion	(34)	220 mm (34)		70 mm (34)
	51	Treatments	Finish				-			-
	52	Tip Thickness	Bore Diameter				7 mm			6.5 mm
	53	Insertion Diam. Min.	Max.				28 mm			18 mm
PURCHASE	54	Manufacturer					TERRANOVA			
	55	Model					SST72-TH-1-C-9-1-B-4-3 + TWE			
	56	Purchase Order Number					1724000979			

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INSTRUMENT DATASHEET

Temperature Transmitter

CROSSWIND

ROSETTI MARINO

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