



LEVEL CONTROL VALVE				CLIENT DOC:
NO.	BY	APP	DATE	DESCRIPTION

CLIENT
P.O. NO.:
PROJECT:
JOB NO.:
SERVICE: **PROPANE REFERIGERATION PACKAGE**

GENERAL	1	Tag No.	LCV-0001A/B		
	2	Qty	2		
	3	Service / Line Size-Schedule	CHILLER EXPANSION LINE / 1.5"-SCH80 Inlet / 4"-SCH40 Outlet		
	4	Line No. / Vessel No.	TBA / CHILLER		
	5	Function	LEVEL CONTROL VALVE EXPANSION TYPE		
BODY	6	Type of Body	UN-BALANCED PLUG		
	7	Body Size / Port Size / Travel	1" / 1" 25.40 mm / 3/4" 19.0 mm		
	8	Guiding / No. of Ports	STEM GUIDED WITH CONTOUR PLUG / 1		
	9	End Conn. & Rating	300# ANSI R.F. FLANGE		
	10	Body Material / Bolt-Nut	LOW TEMP SA352-LCB / SA320-L7M / SA194-7M		
	11	Packing Type / Material	V-RING / PTFE		
	12	Lubricator / Isolating Valve	----		
	13	Bonnet Type	LOW TEMP SA352-LCB/LCC/GRAPHITE/316 SST GASKET		
	14	Trim Characteristic	REDUCED TRIM, LINEAR TRIM, UN-BALANCED, & PLUG DOWN		
	15	Trim Material : Seat/Plug Stem	316 SST / 316 SST HD 316 SST		
	16	Required Seat Tightness	ANSI / FCI 70-2-1991 CLASS IV		
	17	Maximum Allow. Sound Level	85 dbA @ 3 ft		
	18	Flow Direction (FTO or FTC)	FLOW TO OPEN		
ACTUATOR	19	MFR / Model No. / Size (NOTE 14 & 17)	VSI / PISTON L-Act / 50		
	20	Type of Actuator / Service	SPRING OPPOSED DIAPHRAGM / DIRECT ACTING (AIR-TO-OPEN)		
	21	Close at / Open at	6 PSIG / 30 PSIG 0.41 / 2.07 BarG		
	22	Flow Action to / Direction	OPEN / UP		
	23	Fail Position	CLOSE (PLUG DOWN) (AIR-TO-OPEN; FAIL-TO-CLOSE)		
	24	Air Supply Pressure Nor /Max (NOTE 16)	101.5 PSIG / 108.75 PSIG 7.00 / 7.50 BarG		
	25	Handwheel / Location	NONE / ---		
POSITIONER	26	MFR / Model No. (NOTE 10)	ROTORK / 4-20 Ma HART YT-3300		
	27	Filter Reg. / Gauges / Bypass (NOTE 21)	REQ'D SITECNA FR304 / REQ'D / NOT REQ'D		
	28	Input Signal	4-20 mA HART		
	29	Output Signal	0 - 100 % LYI-TBA/LYI-TBA		
	30	Action (NOTE 14)	DIRECT ACTING		
TRANSDUCER (AIR SET)	31	Make / Model No. / Tag	PART OF POSITIONER		
	32	Input / Output Signal			
	33	Filter Reg. / Gauges / Bypass			
	34	Installation			
	35	Air Supply Pressure Nor /Max			
SOLENOID	36	Assembly	N/A		
	37	MFR / Model No.			
	38	MYCOM Document			
	39	Tag Numbers			
	40	Assembly			
OPTIONS	41	Flow Units	LPM		
	42	Fluid	100% PROPYLENE LIQUID		
	43	Quantity Max Flow / Cv CALCULATED	33	GPM	/ 7,209.0 lb/h 3,273 kg/h / 1.48
	44	Quantity Operating Flow / Cv / Cv (SELECTED)	29	GPM	/ 6,270.9 lb/h 2,847 kg/h / 1.27 / 9
	45	Valve Cv / Valve FL	TBA @ 100% FLOW		
	46	Norm. Inlet Pressure / ΔP	18.78 BarG		14.9 Bar
	47	Max. Inlet Pressure / ΔP	19 BarG		15.3 Bar
	48	Max. Inlet Shut Off / Discharge Pressure	22 BarG		3.86 BarG
	49	Temperature Max / Operating	57.0 °C / 56.0 °C		
	50	Specific gravity / Mol Wt.	0.437 / ---		
	51	Operating Viscosity / % Flash	0.069 cP / 42.94		
	52	% Superheat / % Solids	--- / ---		
	53	Vapor Pressure / Crit. Pressure	Barg 18.68 / NOT AVAILABLE		
	54	Predicted Sound Level dbA	85 dbA @ 3 ft @ 1m NORMAL		
	55	Manufacturer	VSI		
	56	Model No. (NOTE 2)	1" -300# ANSI RF / Globe / G-Stream		

NOTES:

1 SYSTEM DESIGN PRESSURE & TEMPERATURE: FV to 22.0 BarG @ 120 °C

2 CADMIUM PLATED B7 BOLTS & 2H NUTS, WETTED MATERIAL SHALL BE 316 STAINLESS STEEL

3 INSTRUMENT SHALL BE SUITABLE FOR OFF-SHORE SERVICE AND TROPICAL CLIMATE

4 MATERIAL TEST REPORT REQUIRED NOT REQUIRED WITH CHARPY IMPACT TEST PER ASME

5 MANUFACTURER CALCULATION / SIZING SHEET REQUIRED NOT REQUIRED

6 DIE- STAMPED STAINLESS STEEL NAMEPLATE REQUIRED NOT REQUIRED

7 CUSTOMER SPECIFICATION: N/A & N/A

8 HARD COPY OF IEC-79, EExi IIB-T3 CERTIFICATE

9 AREA CLASSIFICATION: IEC-79, ZONE 2, GROUP IIB, T3

10 DIGITAL VALVE POSITIONER USING HART PROTOCOL COMMUNICATION

11 ALL DOCUMENTS TO BE SUBMITTED IN BOTH HARD AND ELECTRONIC FORMAT

12 INDIVIDUAL PART WEIGHT MUST BE CERTIFIED

13 MATERIAL SHALL BE PER APPROVED BY CLIENT

14 DIRECT ACTING CONTROLLER BY PURCHASER. ACTUATOR SIGNAL PRESSURE DECREASE AS CONTROLLER OUTPUT DECREASES

15 INSTRUMENT MOUNTING HARDWARE, FASTENERS, LINKAGES & WINGES SHALL BE 316 SS

16 MIN AIR SUPPLY PRESSURE IS 4.5 barg

17 MECHANICAL SCALE INDICATOR / POINTER SHALL BE SUPPLIED

18 PNEUMATIC TUBING SHALL BE 316 STAINLESS STEEL

19 PAINTING SHALL BE HIGH BUILT, HIGH TEMP EPOXY FOR ONSHORE SERVICE

20 ELECTRICAL CONNECTION:M20

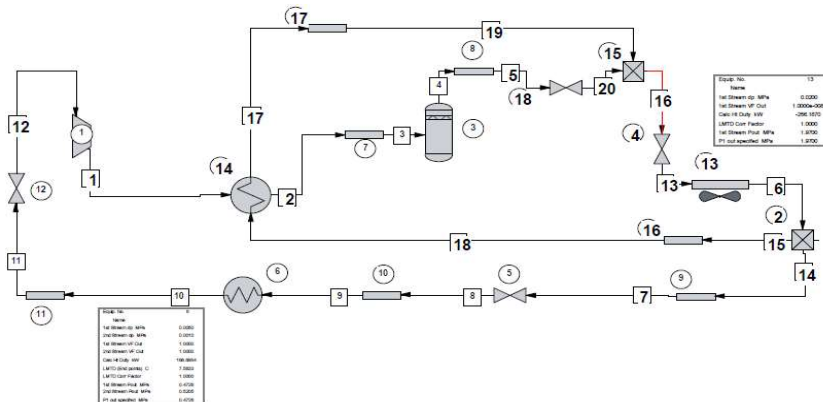
21 REGULATOR SET @ 2.75 barg



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A. SELECTED VALVE DATA



Stream No.	7
Name	- - Overall - -
Molar flow kmol/h	64.5523
Mass flow kg/h	2846.5000
Temp C	56.3228
Pres MPa	1.9682
Vapor mole fraction	0.0000
Enth kW	-2089.8
Tc C	96.6700
Pc MPa	4.2496
Std. sp gr. wtr = 1	0.508
Std. sp gr. air = 1	1.523
Degree API	147.2079
Average mol wt	44.0960
Actual dens kg/m3	436.7512
Actual vol m3/h	6.5174
Std liq m3/h	5.6067
Std vap 0 C m3/h	1446.8534
- - Vapor only - -	
Molar flow kmol/h	64.5523
Mass flow kg/h	2846.5000
Average mol wt	44.0960
Actual dens kg/m3	436.7512
Actual vol m3/h	6.5174
Std liq m3/h	5.6067
Std vap 0 C m3/h	1446.8534
Cp kJ/kg-K	3.5933
Z factor	0.0730
Visc cP	0.06919
Th cond Btu/hr-ft-F	0.0439
- - Liquid only - -	
Molar flow kmol/h	64.5523
Mass flow kg/h	2846.5000
Average mol wt	44.0960
Actual dens kg/m3	436.7512
Actual vol m3/h	6.5174
Std liq m3/h	5.6067
Std vap 0 C m3/h	1446.8534
Cp kJ/kg-K	3.5933
Z factor	0.0730
Visc cP	0.06919
Th cond Btu/hr-ft-F	0.0439
Surf. tens. dyne/cm	3.5382

HYSIS SIZING

Control Valve Sizing for Stream # 7

Loadings and Properties

	Vapor	Liquid
Flow rate	0.0000 kg/h	2846.5000 kg/h
Flow rate	0.0000 m3/h	6.5174 m3/h
Density	0.0000 kg/m3	436.7512 kg/m3
Total flow	2846.5000 kg/h	
Upstream pressure	1.9682 MPa	
Downstream pressure	0.4860 MPa	
Critical flow factor	0.9800	
Corr. factor for reducers	1.0000	
Static head	0.0000 mm	
Seat type	Single-Seat	
Flow type	Two phase flow	
Calc. coefficient Cvc	1.6216	
Capacity coefficient Cv	9.0000	
Cvc / Cv ratio	0.1802	
Valve size	1.0000 in	

VENDOR RECOMMENDED VALVE SIZE 1"/ANSI/CL300 IS ACCEPTABLE.