


As Built Documentation

Chapter 5.5.2 List of limit values

- Measuring range & limit values list

TAG-NO.		DESIG-NATION	RANGE	LL			L			H			HH			CONTROLLER SETTINGS				P&I SHEET	REMARKS					
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	threshold	threshold	W			Kp	Tn	Td		
E 13100		CURRENT DCAC PUMP P13100	0...120 A																		002					
Ei																										
E 13200		CURRENT DCAC PUMP P13200	0...120 A																		002					
Ei																										
E 14100		CURRENT CHILL TOWER PUMP P14100	0...50 A																		003					
Ei																										
E 14200		CURRENT CHILL TOWER PUMP P14200	0...50 A																		003					
Ei																										
E 24111		EFFECTIVE POWER MG24101	0...400 kW	A	PCS	3															007					
EISLL						10																				
E 24211		EFFECTIVE POWER MG24201	0...400 kW	A	PCS	3															008					
EISLL						10																				
E 61100		CURRENT LOX PUMP P61100	0...150 A																		012					
Ei																										
Legend:																										
F = local, V = local cabinet, S = control room, PCS = process control system																										
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																										
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TAG-NO.		DESIG- NATION	RANGE	LL			L			H			HH			CONTROLLER SETTINGS				P&I SHEET	REMARKS	
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp	Tn			Td
E 61200		CURRENT LOX PUMP P61200	0...150 A																	012		
Ei																						
E 73101		CURRENT LIN PUMP P73101	0...100 A																	037		
Ei																						
E 73201		CURRENT LIN PUMP P73201	0...100 A																	037		
Ei																						
E 98012-3		EFFECTIVE POWER BAC	0...10 MW																	006		
Ei																						
E 98012-4		EFFECTIVE POWER MAC	0...10 MW																	001		
Ei																						
F 11074		ANTI SURGE CONTROLLER	0...150 mbar																	001		
FIC																						
F 12005		CHILLED WATER FROM KA12001	0...50 m³/h															0,45	30s		002	
FICAL																						
Legend: F = local, V = local cabinet, S = control room, PCS = process control system Annotation on column "Hook Up": (FP*) = Frost Protection recommended																						
Project: K70101 ASU No.09 Kosice																						
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				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	S/A	loc	prio			threshold	W	Kp	Tn	Td																													
FUNCTION				threshold			threshold			threshold			threshold																																										
F 13006		CHILLED WATER TO DC/AC	0...40 m³/h				A	PCS	3											0,5	5min		002																																
FICAL									20																																														
F 13007		COOLING WATER TO DC/AC	0...250 m³/h				A	PCS	3											0,6	30s		002																																
FICAL									150																																														
F 15035		AIR BEHIND SOL SIEVE	0...120000 Nm³/h 0...22,4 mbar										A	PCS	3					1,0	45s		004	K1 = 25354,628 P1 = 5,62 bar T1 = 23,1°C																															
FICAL															10000																																								
F 15041		INLET REGENERATIO N GAS HEATERS	0...22000 Nm³/h 0...13,83 mbar				SA	PCS	3											0,6	45s		005	K1 = 5915,774 P1 = 1,17 bar T1 = 20°C																															
FICAL									10000																																														
F 16073		HP-AIR FROM BAC	0...65000 Nm³/h 0...40,19 mbar												PCS		PCS						006	K1 = 10253,08 P1 = 57 bar T1 = 25°C																															
FICAL															1000																																								
F 16074		ANTI SURGE CONTROLLER BAC	0...100 %																				006																																
FICAL																																																							
F 20001		HP-GAN OUTLET COLD BOX	0...4500 Nm³/h 0...150 mbar																	1: 0,6 2: 1,15	1: 5min 2: 20s		010	K1 = 365,842 P1 = 21 bar T1 = 20°C																															
FICAL																																																							
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp			Tn	Td																																																																					
F 20002		HP-GAN BLOW OFF	0...4500 Nm³/h											0,4	20s		010	K1 = 372,461 P1 = 21 bar T1 = 20°C																																																																						
FIC																																																																																								
F 20003		HP-GAN TO CUSTOMER	0...4500 Nm³/h 0...150 mbar														010	K1 = 8551,861 P1 = 1,15 T1 = 20°C																																																																						
FI																																																																																								
F 20005		LP-GAN OUTLET COLD BOX	0...35000 Nm³/h 0...16,75 mbar	SA	PCS	1	A	PCS	3					1: 0,6 2: 1,15	1: 5min 2: 20s		010	K1 = 2206,150 P1 = 28 bar T1 = 20°C																																																																						
FICALSALL																																																																																								
F 20006		LP-GAN BLOW OFF	0...35000 Nm³/h											0,3	20s		010																																																																							
FIC																																																																																								
F 20011		GOX OUTLET COLD BOX	0...35000 Nm³/h 0...250 mbar	SA	PCS		A	PCS						1: 0,8 2: 1,15	1: 5min 2: 20s		010																																																																							
FICALSALL																																																																																								
F 20012		GOX BLOW OFF	0...35000 Nm³/h											0,5	20s		010																																																																							
FIC																																																																																								
F 20013		GOX TO CUSTOMER	0...35000 Nm³/h 0...250 mbar														010	K1 = 2206,150 P1 = 28 bar T1 = 20°C																																																																						
FI																																																																																								
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn	Td											
F 22013		ULIN TO LP- COLUMN	0...35000 Nm³/h 0...125 mbar														0,3	20s		013	K1 = 3130,495 P1 = 4,7 bar T1 = -191,6°C									
FIC																														
F 22043		GOX FROM LP- COLUMN	0...500 Nm³/h 0...60 mbar														0,5	40s		013	K1 = 64,55 P1 = 1,38 bar T1 = -180°C									
FIC																														
F 23013		LIN PRODUCT TO STORAGE	0...5000 Nm³/h														1,0	15s		011										
FIC																														
F 23016		LOX TO STORAGE	0...5000 Nm³/h																	011										
FI																														
F 23073		LIN PRODUCT TO DUMP	0...5000 Nm³/h														1,0	15s		011										
FIC																														
F 24101		AIR TO EXPANDER TURBINE 1	0...15000 Nm³/h 0...100 mbar														0,3	45s		007	K1 = 1500 P1 = 56,65 bar T1 = -91°C									
FIC																														
F 24201		AIR TO EXPANDER TURBINE 2	0...15000 Nm³/h 0...100 mbar														1,0	30s		008	K1 = 1500 P1 = 56,65 bar T1 = -91°C									
FIC																														
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp	Tn			Td	
F 40011		SIDEARMLIQUID FROM LP-COLUMN	0...30000 Nm³/h 0...50 mbar														0,3	2min		016 / 017	K1 = 4242,641 P1 = 1,35 bar T1 = -180,5°C		
FIC																							
F 40014		LAR TO PURE AR COLUMN	0...1000 Nm³/h														0,3	2min		017			
FIC																							
F 62030		PURGEGAS LOX TANK B62001	Nm³/h																	032	local indicator		
FI																							
F 63033		LOX CONVERTER CYCLE	0...6000 Nm³/h 0...450 mbar																	032	K1 = 306,586 P1 = 4,5 bar T1 = -181,8°C		
FI																							
F 64061			0...35000 Nm³/h 0...450 mbar														1,0	30s					
FIC																							
F 70041		MP-GAN TO CUSTOMER	0...35000 Nm³/h 0...150 mbar																	020	K1 = 2857,738 P1 = 7,3 bar T1 = 26°C		
FIC																							
F 70074		ANTI SURGE CONTROLLER	0...100 %																	019			
FIC																							
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn	Td			
F 72030		PURGE GAS LIN TANK B72001	Nm³/h														035	local indicator	
FI																			
F 72071		PURGE GAS P72001	Nm³/h														035	local indicator	
FI																			
F 77074		ANTI SURGE CONTROLLER	0...100 %														020		
FIC																			
F 80001		COOLING WATER	0...2000 m³/h				A	PCS	3								023		
FIAL																			
F 87020		BOXPURGE HE-BOX	2,5...35 Nm³/h														024	local indicator	
FI																			
F 87021		BOXPURGE HE-BOX	2,5...35 Nm³/h														024	local indicator	
FI																			
F 87060		BOXPURGE COLD-BOX	2,5...35 Nm³/h														024	local indicator	
FI																			
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TAG-NO.		DESIG- NATION	RANGE	LL			L			H			HH			CONTROLLER SETTINGS				P&I SHEET	REMARKS
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	threshold	W	Kp		
F 87061		BOXPURGE COLD-BOX	2,5...35 Nm³/h																	024	local indicator
F 87062		BOXPURGE COLD-BOX	2,5...35 Nm³/h																	024	local indicator
F 87063		BOXPURGE COLD-BOX	2,5...35 Nm³/h																	024	local indicator
F 87064		BOXPURGE COLD-BOX	2,5...35 Nm³/h																	024	local indicator
G 11010		GUIDE VANE MAC	0...100 %																	001	
G 11074		BLOW OFF VALVE MAC	0...100 %									SO	PCS	4						001	
G 11742		SHAFT POSITION GEARING MAC	-2...0...+2 mm																	027	
GIAHLSAHLL				SA	PCS	1	A	PCS	3	A	PCS	3	A	PCS	1						
					</																

TAG-NO.		DESIG- NATION	RANGE	LL		L		H		HH		CONTROLLER SETTINGS				P&I SHEET	REMARKS	
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp			Tn
G 16010		GUIDE VANE BAC STAGE 1	0...100 %														006	
GISOL							PCS											
G 16733		POSITION MAIN SHAFT BAC	-2...+2 mm														028	
GIAHLSAHLL				SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1			
G 24105		NOZZLE RING EXPANDER TURBINE 1	0...100 %														007	
GISOL																		
G 24205		NOZZLE RING EXPANDER TURBINE 2	0...100 %														008	
GISOL																		
G 70010		GUIDE VANE GAN COMPR. 1	0...100 %														019	
GISOL																		
G 70738		SHAFT POSITION GEARING NV1	-0,6...0,6 mm														021	
GIAHLSAHLL				SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1			
G 70743		SHAFT POSITION GEARING NV1	-0,6...0,6 mm														021	
GIAHLSAHLL				SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1			

Legend:

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Annotation on column "Hook Up":
(FP-) = Frost Protection recommended

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FUNCTION				S/A	loc	prio	threshold	S/A	loc	prio	threshold	S/A	loc	prio	threshold			W	Kp	Tn
G 77010		GUIDE VANE GAN COMPR. 2	0...100 %															020		
GISOL																				
G 77738		SHAFT POSITION GEARING NV2	-0,6...0,6 mm	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1				022	
GIAHLSAHLL																				
G 77743		SHAFT POSITION GEARING NV2	-0,6...0,6 mm	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1				022	
GIAHLSAHLL																				
H 16071		BLOW OUT VALVE BAC	0...100 %															006		
HIC																				
H 16073		AIR FROM BOOSTER	0...100 %															006		
HIC / GSHL																				
H 20013		PRESSURISATI ON GOX TO CUSTOMER 1	0...100 %															010		
HIC																				
H 20014		PRESSURISATI ON GOX TO CUSTOMER 2	0...100 %															010		
HIC																				
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp	Tn			Td
H 20027		PRESSURISATION ON AIR TO MHE	0...100 %																	006		
HIC																						
H 21006		NL FROM B21002	0...100 %																	014		
HIC																						
H 21014		LIQUID AIR TO HP-COLUMN	0...100 %																	014		
HIC																						
H 24105		NOZZLE RING EXPANDER TURBINE 1	0...100 %																	007		
HIC																						
H 24205		NOZZLE RING EXPANDER TURBINE 2	0...100 %																	008		
HIC / GIOL																						
H 40005		LAR BLOW OUT CONDENSER B40001	0...100 %																	017		
HIC																						
H 40100		SPEED LAR PUMP P40100	0...100 %																	016		
HIC / ESAL																						
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	FUNCTION		threshold			threshold			threshold			threshold								
H 61100	SPEED LOX PUMP P61100	0...100 %																	012	
HIC / ESAL																				
H 61200	SPEED LOX PUMP P61200	0...100 %																	012	
HIC / ESAL																				
H 70035	BLOW OUT VALVE GAN COMP. 1	0...100 %																	019	
HIC																				
H 70036	CHARGE GAN COMP. 1	0...100 %																	019	
HIC																				
H 71100	SPEED LIN PUMP P71100	0...100 %																	015	
HIC / ESAL																				
H 71200	SPEED LIN PUMP P71200	0...100 %																	015	
HIC / ESAL																				
H 73001	LIN LDCC FROM SUBCOOLER	0...100 %																	014	
HIC																				
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn			Td
				threshold	threshold	threshold	threshold	threshold	threshold	threshold	threshold	threshold						
H 73101		SPEED LIN BACK UP PUMP P73101	0...100 %													037		
HIC																		
H 73201		SPEED LIN BACK UP PUMP P73201	0...100 %													037		
HIC																		
H 77035		BLOW OUT VALVE GAN COMP. 2	0...100 %													020		
HIC																		
H 77036		CHARGE GAN COMP. 2	0...100 %													020		
HIC																		
L 11812		OIL CONTAINER MAC	0...100 %													027		
LSAL																		
L 13003		LEVEL COOLING WATER DC/AC	0...100 %													002		
LIAHLSAHH																		
L 13013		LEVEL COOLING WATER DC/AC	0...100 %													002		
LIAHLSAHH																		
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TAG-NO.		DESIG- NATION	RANGE	LL			L			H			HH			CONTROLLER SETTINGS				P&I SHEET	REMARKS							
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn	Td									
L 14003		LEVEL CHILL TOWER	0...100 %	SA	PCS	1	A	PCS	3	A	PCS	3	A	PCS	1	1,0	40min		003									
LIAHLSAHLL				threshold																								
L 16812		OIL CONTAINER BAC	0...100 %				A	F											028									
LSAL				threshold																								
L 21003		LEVEL SUMP HP-COLUMN	0...100 %				A	PCS	3	A	PCS	3	A	PCS	1	1,0	5min		014 / 017									
LIAHLSAHH				threshold																								
L 21060		LIQUID AIR SEPARATOR B21001	0...100 %				A	PCS	3	A	PCS	3				1,0	2min		009 / 013									
LICAHL				threshold																								
L 22001		LEVEL SUMP LP-COLUMN	-49...231 %	SA	PCS	1	A	PCS	3	A	PCS	3	A	PCS	1	100%	1,0	10s	014 / 011									
LIAHLSAHLL				threshold																								
L 22002		LEVEL SUMP LP-COLUMN	-50...223 %													1,0	15s		014									
LIC				threshold																								
L 22011		LEVEL SUMP LP-COLUMN	65...130 %	SA	PCS	1	A	PCS	3	A	PCS	3	A	PCS	3	100%			014									
LIAHLSALL				threshold																								
Legend:																					F = local, V = local cabinet, S = control room, PCS = process control system				Annotation on column "Hook Up": (FP*) = Frost Protection recommended			
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			S/A		prio	S/A		loc	prio	S/A		loc	prio	S/A	loc	prio	W	Kp			Tn	Td
			threshold	threshold		threshold	threshold			threshold	threshold											
FUNCTION																						
L 23076	LOX PRODUCT TO DUMP	-50...223 %															5,0	20min		011		
LIC																						
L 40007	LEVEL AR- COND. B40001	-46...233 %	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1			100%	0,8	1min		017	
LICAHLSAHLL																						
L 40017	LEVEL LOX BOILER B40001	65...129 %	SA	PCS	1	A	PCS	3	A	PCS	3									017		
LIAHLSALL																						
L 40053	LEVEL SUMP CAR COLUMN 1	0...100 %	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1				0,3	20s		016	
LICAHLSAHLL																						
L 43023	PURE AR COLUMN K43001	-26...138 %				A	PCS	3	A	PCS	3	SA	PCS	1			100%	0,3	20s		018	
LICAHLSAHH																						
L 43027	LIQ. NITR. SEPARATOR B43001	3...151 %	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1			100%	0,3	20s		018	
LICAHLSAHLL																						
L 43027-1	LEVEL CONTROL VALVE AR CONDENSER	3...151 %															0,3	20s		018	X from L43027	
LIC																						
Legend:																						
F = local, V = local cabinet, S = control room, PCS = process control system																						
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																						
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn			Td																		
L 43033		PURE AR PRODUCT TO DUMP	-26...138 %													018	X from L43023																			
LIC															0,3			20s																		
L 44007		LP LAR TANK 1 B44101	0...100 %													041																				
LI																																				
L 44105		LP LAR TANK 1 B44101	0...100 %	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1	041																				
LIAHLSAHILL																																				
L 44205		LP LAR TANK 2 B44201	0...100 %													042																				
LIAHLSAHILL																																				
L 44207		LP LAR TANK 2 B44201	0...100 %													042																				
LI																																				
L 48015		HP LAR TANK B48001	0...100 %													044																				
LI																																				
L 48020		HP LAR TANK B48001	0...100 %	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1	044																				
LIAHLSAHILL																																				
Legend:																	F = local, V = local cabinet , S = control room, PCS = process control system										Annotation on column "Hook Up": (FP*) = Frost Protection recommended									
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	threshold	W	Kp			Tn	Td																					
L 62005		LOX TANK B62001	0...100 %	SA	PCS		A	PCS		A	PCS		ZA	S							032																							
LIAHLZAHHSALL				3																																								
L 62006		OVERFLOW LOX TANK BL62001	94,37...100 %							A	PCS	3	ZA	S	1						032																							
LAHZAHH																																												
L 64030		WATER BATH VAPORIZER GOX	mm																		034																							
LZAL																																												
L 72005		LIN TANK B72001	0...100 %	SA	PCS	1	A	PCS	3	A	PCS	3	ZA	S	1						035																							
LIAHLZAHHSALL				3																																								
L 72006		OVERFLOW LIN TANK B72001	93,6...100 %							A	PCS	3	ZA	S	1						035																							
LAHZAHH																																												
L 73002		MP LIN TANK B73001	0...100 %																		038	Local indicator																						
LI																																												
L 73007		MP LIN TANK B73001	0...100 %	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1						038																							
LIAHLSAHHLL				10																																								
Legend:																							F = local, V = local cabinet, S = control room, PCS = process control system				Annotation on column "Hook Up": (FP*) = Frost Protection recommended																	
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio			threshold	W	Kp	Tn	Td				
L 73030		WATER BATH VAPORIZER GAN	mm																	039						
LZAL																										
L 73130		WATER BATH NAT. GAS VAP.	mm																	040						
LSAH																										
L 73131		WATER BATH NAT. GAS VAP.	mm																	040						
LZAL																										
L 73132		WATER BATH NAT. GAS VAP.	mm																	040						
LZALL																										
P 11007		AIR CHARGE 1ST STAGE MAC	-1,0...+0,5 bar																	001						
PI																										
P 11016		AIR BEHIND INTERCOOLER 1ST STAGE MAC	0...2,5 bar																	001						
PI																										
P 11026		AIR BEHIND INTERCOOLER 2ST STAGE MAC	0...2,5 bar																	001						
PI																										
Legend:																	F = local, V = local cabinet, S = control room, PCS = process control system					Annotation on column "Hook Up": (FP*) = Frost Protection recommended				
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp	Tn			Td			
P 11036		AIR BEHIND INTERCOOLER 3RD STAGE MAC	0...8 bar																	001					
PI																									
P 11041		AIR DISCHARGE 4TH STAGE MAC	0...8 bar				A	PCS	3								0,6	50s		001					
PICAL									4																
P 11505		COOLING WATER CHARGE MAC	0...10 bar				-	F	-											001	local indicator				
PI									3											001	local indicator				
P 11590		COOLING WATER DISCHARGE MAC	0...10 bar																						
PI																									
P 11747		LUBE OIL BEARINGS MAC	0...2,5 bar	SA	PCS	1	A	PCS	3											027					
PIALSALL									1,2																
P 11752		SEAL GAS MAC	0...6 bar																	027	local indicator				
PI																									
P 11754		SEAL GAS MAC	bar																	027					
PIAHL																									
Legend:																									
F = local, V = local cabinet , S = control room, PCS = process control system																									
Annotation on column "Hook Up": (FP) = Frost Protection recommended																									
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	S/A	loc			prio	threshold	W	Kp	Tn	Td			
P 11754		SEAL CHAMBER PRESSURE	0...50 mbar				A	PCS	3												027					
PIAL								8																		
P 11840		LUBE OIL MAC	0...6 bar				-	F	-												027	local indicator				
PI								1,2																		
P 11854		LUBE OIL MAC	0...2,5 bar				A	PCS	3												027					
PIAL								1,2																		
P 13120		COOLING WATER TO DC/AC	0...10 bar																		002	local indicator				
PI																										
P 13220		COOLING WATER TO DC/AC	0...16 bar																		002	local indicator				
PI																										
P 14120		CHILLED WATER TO DC/AC	0...16 bar																		003	local indicator				
PI																										
P 14220		CHILLED WATER TO DC/AC	0...16 bar																		003	local indicator				
PI																										
Legend:																	F = local, V = local cabinet, S = control room, PCS = process control system									
																	Annotation on column "Hook Up": (FP) = Frost Protection recommended									
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn	Td																																																																					
P 15010		AIR INLET MOL SIEVE	0...6 bar				A	PCS	3									004																																																																			
PIAL							4																																																																														
P 15012		ADSORBER A15001	0...6 bar				S	PCS	3	S	PCS	3						004																																																																			
PISHL							0,3																																																																														
P 15022		ADSORBER A15002	0...6 bar				S	PCS	3	S	PCS	3						004																																																																			
PISHL							0,3																																																																														
P 15035		AIR BEHIND MOL SIEVE	0...6 bar	SA	PCS	1	A	PCS	3									004																																																																			
PIALSALL				3			4																																																																														
P 15037		AIR TO REGENERATIO N GAS HEATER	0...400 mbar							SA	PCS	3	SA	PCS	1		30s	004																																																																			
PICAHAHH							200						350																																																																								
P 15041		WN2 TO REG. GAS HEATER	0...450 mbar				A	PCS	3	A	PCS	3					30s	005 / 003																																																																			
PICAHL							50						300																																																																								
P 16007		CHARGE PRESSURE BAC	0...7 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1		30s	006																																																																			
PICAHLSAHLL				1,5			4						5																																																																								
Legend:																			F = local, V = local cabinet, S = control room, PCS = process control system										Annotation on column "Hook Up*": (FP*) = Frost Protection recommended																																																								
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	threshold	W	Kp			Tn	Td
P 16015		AIR BEHIND INTERCOOLER 1ST STAGE BAC	0...15 bar																		006		
PI																							
P 16025		AIR BEHIND INTERCOOLER 2ND STAGE BAC	0...25 bar																		006		
PI																							
P 16035		AIR BEHIND INTERCOOLER 3RD STAGE BAC	0...50 bar																		006		
PI																							
P 16045-1		AIR DISCHARGE INTERCOOLER 4TH STAGE	0...70 bar																		006		
PICAUSAHH																							
P 16073		HP-AIR FROM BAC	-1...100 bar	SA	PCS	1	A	PCS	3	A	PCS	3									006		
PISAPHLALL																							
P 16505		COOLING WATER BAC	0...10 bar																		006	local indicator	
PI																							
P 16512		COOLING WATER BEHIND VW16001 BAC	0...10 bar																		006	local indicator	
PI																							
Legend:																							
F = local, V = local cabinet, S = control room, PCS = process control system																							
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp			Tn	Td
P 16522		COOLING WATER BEHIND VW16002	0...10 bar																	006	local indicator	
PI																						
P 16532		COOLING WATER BEHIND VW16003	0...10 bar																	006	local indicator	
PI																						
P 16542		COOLING WATER BEHIND VW16004	0...10 bar																	006	local indicator	
PI																						
P 16590		COOLING WATER RETURN BAC	0...10 bar																	006	local indicator	
PI																						
P 16623		LUBE OIL P16830 BAC	bar																	028	local indicator	
PI																						
P 16751		SEAL GAS BAC	0...250 mbar				A	PCS	3											028		
PIAL											70											
P 16752		SEAL GAS BAC	0...1,4 bar				-	A	-											028	local indicator	
PI											0,4											
Legend:																						
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Annotation on column "Hook Up": (FP*) = Frost Protection recommended																						
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp	Tn			Td						
P 16824		LUBE OIL P16820 BAC	0... bar																	028	local indicator							
PI																												
P 16854		LUBE OIL BAC	0...4 bar	SA	PCS	1	A	PCS	3											028								
PISAL																												
P 16855		LUBE OIL BAC	0...4 bar																	028								
PISAL																												
P 16861		LUBE OIL HEADER	0... bar																	028	local indicator							
PI																												
P 16862		LUBE OIL SUPPLY	0... bar																	028	local indicator							
PI																												
P 16867		LUBE OIL MAIN MOTOR BAC	0...6 bar																	028	local indicator							
PI																												
P 16868		LUBE OIL MAIN MOTOR BAC	0...6 bar																	028	local indicator							
PI																												
Legend:																					F = local, V = local cabinet , S = control room, PCS = process control system				Annotation on column "Hook Up": (FP*) = Frost Protection recommended			
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			S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	threshold	threshold	W			Kp	Tn
P 20001	HP-GAN OUTLET COLDBOX	0...30 bar				A	PCS	3	A	PCS	3										010	
PICAHL																						
P 20003	HP-GAN TO CUSTOMER	0...30 bar																			010	
PI																						
P 20005	LP-GAN OUTLET COLDBOX	0...250 mbar				A	PCS	3													010	
PICAL																						
P 20011	GOX OUTLET COLDBOX	0...40 bar				A	PCS	3	A	PCS	3										010	
PICAHL																						
P 20013	GOX TO CUSTOMER	0...40 bar																			010	
PI																						
P 20015	GOX TO CUSTOMER 1	0...40 bar																			010	
PI																						
P 20016	GOX TO CUSTOMER 2	0...40 bar																			010	
PI																						

Legend: F = local, V = local cabinet, S = control room, PCS = process control system

Annotation on column "Hook Up": (FP*) = Frost Protection recommended

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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	threshold	W			Kp	Tn	Td
P 21002		HP-COLUMN TOP	0...6 bar				S	PCS	3	S	PCS	3						014		
PISHL																				
P 22001		LP-COLUMN BOTTOM	0...600 mbar							A	PCS	3						013		
PIAH																				
P 24101		AIR TO EXPANDER TURBINE 1	0...70 bar							A	PCS	3						007		
PISAH																				
P 24102		AIR OUTLET EXPANDER TURBINE 1	0...10 bar							A	PCS	3	S	PCS	1			007	H for deriming	
PIAHSHH																				
P 24107		AIR INLET EXPANDER TURBINE 1	0...70 bar							A	PCS	3						007	H for deriming	
PIAH																				
P 24108		AIR INLET EXPANDER TURBINE 1	0...100 bar							-	F	-						007	local indicator	
PI																				
P 24110		AIR OUTLET EXPANDER TURBINE 1	0...100 bar							-	F	-	-	F	-			007	local indicator	
PI																				
Legend:																				
F = local, V = local cabinet, S = control room, PCS = process control system																				
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																				
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FUNCTION				S/A	loc	prio	threshold	S/A	loc	prio	threshold	S/A	loc	prio	threshold			W	Kp	Tn	Td		
P 24140		SEAL GAS EXPANDER TURBINE 1	0...40 bar				-	F	-									029	local indicator				
PI							4																
P 24144		SEAL GAS EXPANDER TURBINE 1	0...25 bar	SA	PCS	1	A	PCS	3									029					
PIALSALL				1,0 20.7			2,0 21.2																
P 24145		BACK PRESSURE SEAL GAS	0...10 bar				-	F	-									029	local indicator				
PI				see PLL24145			see PL24145																
P 24169		LUBE OIL EXPANDER TURBINE 1	0...6 bar	-	F	-	-	F	-									029	local indicator				
PI				see PCS			see PCS																
P 24169		LUBE OIL EXPANDER TURBINE 1	0...6 bar	SA	PCS	1	A	PCS	3									029					
PISALSALL				1,8			2,1																
P 24201		AIR TO EXPANDER TURBINE 2	0...70 bar							A	PCS	3						008					
PISAH												58											
P 24202		AIR OUTLET EXPANDER TURBINE 2	0...10 bar							A	PCS	3	S	PCS	1			008	H for deriming				
PIAHSHH												2											
Legend:																	F = local, V = local cabinet , S = control room, PCS = process control system			Annotation on column "Hook Up": (FP) = Frost Protection recommended			
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp			Tn	Td				
				S/A	loc	prio	threshold	S/A	loc	prio	threshold	S/A	loc	prio	threshold								
P 24207		AIR INLET EXPANDER TURBINE 2	0...70 bar					A	PCS	3							008	H for deriming					
PIAH																							
P 24208		AIR INLET EXPANDER TURBINE 2	0...100 bar					-	F	-							008	local indicator					
PI											60												
P 24210		AIR OUTLET EXPANDER TURBINE 1	0...10 bar					-	A	-	A	-	A	-			007	local indicator					
PI											1												
P 24240		SEAL GAS EXPANDER TURBINE 2	0...10 bar					-	F	-							030	local indicator					
PI											4												
P 24244		SEAL GAS EXPANDER TURBINE 2	0...25 bar	SA	PCS	1	A	PCS	3								030						
PIALSALL																							
P 24245		BACK PRESSURE SEAL GAS	0...10 bar														030	local indicator					
PI																							
P 24269		LUBE OIL EXPANDER TURBINE 2	0...6 bar	SA	PCS	1	A	PCS	3								030						
PIALSALL																							
Legend:																							
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Annotation on column "Hook Up": (FP*) = Frost Protection recommended																							
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TAG-NO.		DESIG- NATION	RANGE	LL			L			H			HH			CONTROLLER SETTINGS				P&I SHEET	REMARKS								
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp	Tn			Td							
P 24269		LUBE OIL EXPANDER TURBINE 2	0...6 bar	-	F	-	-	F	-	-	-	-	-	-	-					030	local indicator								
PI				see PCS			see PCS																						
P 40003		CAR COLUMN C40002	0...600 mbar				A	PCS	3							175				017 / 016									
PICAL							50																						
P 40007		LOX BOILER TOP	0...500 mbar																	017									
PI																													
P 40130		CHARGE PRESSURE P40100	0...6 bar																	016	local indicator								
PI																													
P 40170		DISCHARGE CLOX PUMP P40100	0...10 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1					016									
PIAHL/SAHLL				3,5			4,0			7,0			8																
P 43022		PURE AR COLUMN K43001 TOP	0...1000 mbar				A	PCS	3	A	PCS	3								018									
PICAL							50			900																			
P 43028		LIQ. NITR. SEPARATOR B43001	0...2000 mbar				A	PCS	3	A	PCS	3								018									
PICAL							1000			1900																			
Legend:																						F = local, V = local cabinet, S = control room, PCS = process control system				Annotation on column "Hook Up": (FP*) = Frost Protection recommended			
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio			threshold	W	Kp	Tn	Td						
P 44057		END PRESSURE P44001	0...10 bar																	042	local indicator							
PI																					042	local indicator						
P 44072		PURGE GAS TO P44001	0...6 bar																	041								
PI																												
P 44105		LP LAR TANK 1 B44001	0...6 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1						041							
PICAHL SAHILL																												
P 44106		LP LAR TANK 1 B44001	0...6 bar																	041								
PSH																												
P 44107		LP LAR TANK 1 B44001	0...6 bar	-	F	-	-	F	-	-	F	-	-	F	-					041	local indicator							
PI																												
P 44205		LP LAR TANK 2 B44201	0...6 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1					042								
PICAHL SAHILL																												
P 44207		LP LAR TANK 2 B44201	0...6 bar	-	F	-	-	F	-	-	F	-	-	F	-					042	local indicator							
PI																												
Legend:																					F = local, V = local cabinet, S = control room, PCS = process control system				Annotation on column "Hook Up": (FP*) = Frost Protection recommended			
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TAG-NO.		DESIG-NATION	RANGE	LL		L		H		HH		CONTROLLER SETTINGS				P&I SHEET	REMARKS		
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn	Td			
				threshold			threshold			threshold									
P 48004	PSAH	HP LAR TANK B48001	0...40 bar							SA	S	1						044	
P 48005	PICAHSAHLL	HP LAR TANK B48001	0...40 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1			044	
P 48015	PI	HP LAR TANK B48001	0...60 bar															local indicator	
P 48050	PIAHLSAHLL	END PRESSURE LAR PUMP P48001	0...40 bar															043	
P 48080	PIC	SEAL GAS P48001	bar															043	
P 49020	PICAL	HP-GAR TO CUSTOMER	0...40 bar				A	PCS	3									044	
P 49021	PI	HP-GAR DISCHARGE EVAPORIZERS	0...40 bar															044	
Legend:																			
F = local, V = local cabinet, S = control room, PCS = process control system																			
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																			
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn			Td						
P 61130		CHARGE PRESSURE P61100	0...6 bar														012	local indicator						
PI																								
P 61170		DISCHARGE LOX PUMP P61100	0...40 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1		012							
PICAHL5AHLL						15						26				32								
P 61230		CHARGE PRESSURE P61200	0...6 bar														012	local indicator						
PI																								
P 61270		DISCHARGE LOX PUMP P61200	0...40 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1		012							
PICAHL5AHLL						15						26				32								
P 62004		PRESSURIZATI ON LOX TANK B62001	bar														032							
PIC																								
P 62005		LOX TANK B62001 BLOW OUT	-10...+250 mbar	A	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1		032	PIC62004, SP=30, KP=1, Tn=30s						
PICAHL5AHLL						5						10				180								
P 62006		LOX TANK BL62001	0...400 mbar										SA	F	1		032							
PSAHH																								
Legend:																								
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Annotation on column "Hook Up": (F-P) = Frost Protection recommended																								
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp	Tn			Td						
P 62011		END PRESSURE LOX PUMP P62001	0...10 bar																	032	local indicator							
PI																												
P 62012		END PRESSURE LOX PUMP P62001	0...10 bar																	032								
PISAL																												
P 62032		TANK SHELL B62001	0...25 mbar																	032	local indicator							
PI																												
P 62170		O2 SEAL GAS P62001	0...0,6 bar																	032	local indicator							
PI																												
P 62171		O2 SEAL GAS P62001	bar																	032								
PIC																												
P 63033		END PRESSURE LOX PUMP P63001	0...6 bar																	032								
PIC																												
P 64050		GOX BEHIND WATER BATH VAPORIZER	0...40 bar													25	0,7	30s		034								
PICAHSAHH																												
Legend:																					F = local, V = local cabinet, S = control room, PCS = process control system				Annotation on column "Hook Up": (FP*) = Frost Protection recommended			
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TAG-NO.		DESIG-NATION	RANGE	LL			L			H			HH			CONTROLLER SETTINGS				P&I SHEET	REMARKS			
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn	Td					
				threshold			threshold			threshold			threshold											
P 64080	PIALSALL	STEAM TO WATER BAD VAPORIZER GOX	0...25 bar	SA	PCS	1	A	PCS	3											034				
P 64081	PI	STEAM TO W64001	0...25 bar																	034	local indicator			
P 64101	PI	LOX TO P64101	0...6 bar																	033	local indicator			
P 64150	PICAHLAHLL	END PRESSURE LOX PUMP P64101	0...40 bar	SA	PCS	1	A	PCS	3	A	PCS	3	A	PCS	1	29	0,7	15s		033				
P 64170	PI	O2 SEAL GAS P64101	bar																	033	local indicator			
P 64171	PIC	O2 SEAL GAS P64101	bar																	033				
P 64201	PI	LOX TO P64201	0...6 bar																	033	local indicator			
Legend:																								
F = local, V = local cabinet , S = control room, PCS = process control system																								
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																								
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn	Td		
				threshold			threshold			threshold			threshold								
P 64250	PICAHLAHHLL	END PRESSURE LOX PUMP P64201	0...40 bar	SA	PCS	1	A	PCS	3	A	PCS	3	A	PCS	1	29	0,7	15s		033	
P 64270	PI	O2 SEAL GAS P64201	bar																	033	local indicator
P 64271	PIC	O2 SEAL GAS P64201	bar																	033	
P 70001	PIAHLAHH	INLET GAN COMPRESSOR 1	0...250 mbar				A	PCS	3	A	PCS	1	SA	PCS	3					019	
P 70007	PIAHLAHH	INLET GAN COMPRESSOR 1	0...2 bar							A	PCS	3	SA	PCS	1					019	
P 70015	PI	GAN BEH. COOLER 1ST STAGE	0...2 bar																	019	
P 70025	PI	GAN BEH. COOLER 2ND STAGE	0...4 bar																	019	
Legend:																					
F = local, V = local cabinet, S = control room, PCS = process control system																					
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																					
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	threshold	W	Kp			Tn	Td	
P 70031		GAN BEH. 3RD STAGE	0...10 Bar																				019	
PISAHSAHH																								
P 70035		GAN BEH. COOLER 3RD STAGE	0...10 bar																				019	
PI																								
P 70036		GAN DISCHARGE GAN COMPR. 1	bar																				019	
PI																								
P 70041		MP-GAN TO CUSTOMER	0...10 bar																				020	
PICAH																								
P 70753		SEAL GAS N2 COMP.1	bar																				021	
PIAL																								
P 70854		LUBE OIL GAN COMP. 1	0...4 bar	SA	PCS	1	A	PCS	3														021	
PISALSALL				1,0			1,4																	
P 70855		LUBE OIL GAN COMP. 1	0...6 bar	-	F	-	-	F	-														021	local indicator
PI				1			1,4																	
Legend:																								
F = local, V = local cabinet, S = control room, PCS = process control system																								
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																								
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn	Td		
				threshold			threshold			threshold			threshold								
P 70867	PI	LUBE OIL MAIN MOTOR GAN COMP. 1	0...6 bar	-	F	-	-	F	-											021	local indicator
P 70868	PI	LUBE OIL MAIN MOTOR GAN COMP. 1	0...6 bar	1			1,4													021	local indicator
P 71130	PI	CHARGE PRESSURE P71100	0...6 bar																	015	local indicator
P 71170	PICAHLSAHHLL	DISCHARGE LIN PUMP P71100	0...40 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1					015	
P 71230	PI	CHARGE PRESSURE P71200	0...6 bar																	015	local indicator
P 71270	PICAHLSAHHLL	DISCHARGE LIN PUMP P71200	0...40 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1					015	
P 72005	PICAHLSAHHLL	LIN TANK B72001 BLOW OUT	-10...+250 mbar	A	PCS	1	A	PCS	3	A	PCS	3	S	PCS	1	50	4	30s		035	
Legend:																					
F = local, V = local cabinet, S = control room, PCS = process control system																					
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																					
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn			Td		
				threshold	threshold	threshold	threshold	threshold	threshold	threshold	threshold									
P 72006		LIN TANK B72001	0...400 mbar												035					
PSAHH																				
P 72011		END PRESSURE LIN PUMP P72001	0...10 bar				- F -				S F 1				035	local indicator				
PI							4				180									
P 72012		END PRESSURE LIN PUMP P72001	0...10 bar				SA PCS 3								035					
PISAL							4													
P 72032		TANK SHELL B72001	0...15 mbar												035	local indicator				
PI																				
P 73002		REFILL GAN RESERVOIR	0...25 bar				SA PCS 1								038					
PISAL							10,5													
P 73002		MP LIN TANK B73001	0...25 bar				- F -	- F -	- F -	- F -	- F -				038	local indicator				
PI							9	13	14											
P 73005		MP LIN TANK B73001 BLOW OUT	bar									9,5	3	20s	038					
PIC																				
Legend: F = local, V = local cabinet , S = control room, PCS = process control system																				
Annotation on column "Hook Up": (FPr) = Frost Protection recommended																				
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn		
				threshold	threshold	threshold	threshold	threshold	threshold	threshold	threshold						
P 73006		MP LIN TANK B73001	0...25 bar					SA	F	3						038	
PSAH																	
P 73007		HP-GAN RESERVOIR B73002	0...25 bar			S	PCS	3	S	PCS	3					038	
PISAH																	
P 73009		HP-GAN RESERVOIR B73002	0...25 bar			-	F	-	-	F	-					038	local indicator
PI																	
P 73015		MP LIN TANK B73001	0...25 bar			A	PCS	3	A	PCS	3	SA	PCS	1		038	PIC73005, w=9,5, Kp=2, Tn=20s
PICAHLSAHH																	
P 73050		GAN BEHIND WATER BATH VAPORIZER	0...25 bar						A	H	3					039	
PICAH																	
P 73080		STEAM TO WATER BATH VAPORIZER GAN	0...25 bar	SA	PCS	1	A	PCS	3							039	
PIALSALL																	
P 73081		STEAM TO WATER BATH VAPORIZER GAN	0...25 bar													039	local indicator
PI																	
Legend:																	
F = local, V = local cabinet , S = control room, PCS = process control system																	
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																	
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp	Tn			Td		
P 73101		LIN TO P73101	0...6 bar																	037	local indicator			
PI																								
P 73150		END PRESSURE LIN PUMP P73101	0...25 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1	25	1,5	20s		037				
PICAHL5AHLL						4									15									
P 73158		GAN BEHIND W73101	0...25 bar							A	PCS	3	SA	PCS	1	5,8	2,5	30s		040				
PICA5SAHH															7						local indicator			
P 73201		LIN TO P73201	0...6 bar																	037				
PI																								
P 73250		END PRESSURE LIN PUMP P73201	0...25 bar	SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1	25	3	20s		037				
PICAHL5AHLL						4									15									
P 74090		OUTLET PRESSURE HP-GAN	0...40 bar				A	PCS	3	A	PCS	3				15	3,5	25s		036				
PICA5AHL																					local indicator			
P 74101		LIN TO P74101	0...6 bar																	036				
PI																								
Legend:																								
F = local, V = local cabinet, S = control room, PCS = process control system																								
Annotation on column "Hook Up": (F-P) = Frost Protection recommended																								
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			S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn	Td		
P 74150	END PRESSURE LIN PUMP P74101	0...40 bar	threshold			threshold			threshold			threshold			22	1	30s		036	
			SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1						local indicator
P 74170	N2 SEAL GAS P74101	bar	threshold			threshold			threshold			threshold							036	
P 74171	N2 SEAL GAS P74101	bar	threshold			threshold			threshold			threshold							036	
P 74201	LIN TO P74201	0...6 bar	threshold			threshold			threshold			threshold							036	local indicator
P 74250	END PRESSURE LIN PUMP P74201	0...40 bar	threshold			threshold			threshold			threshold			22	1	30s		036	
			SA	PCS	1	A	PCS	3	A	PCS	3	SA	PCS	1						local indicator
P 74270	N2 SEAL GAS P74201	bar	threshold			threshold			threshold			threshold							036	
P 74271	N2 SEAL GAS P74201	bar	threshold			threshold			threshold			threshold							036	


Legend:				F = local, V = local cabinet, S = control room, PCS = process control system				Annotation on column "Hook Up": (FP*) = Frost Protection recommended			
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			S/A	loc	prio	threshold	S/A	loc	prio	threshold	S/A	loc	prio	threshold			W	Kp	Tn	Td	
P 77001	INLET GAN COMPRESSOR 2	0...250 mbar					A	PCS	3	A	PCS	3	SA	PCS	1					020	
PIAHL SAHH															240						
P 77007	INLET GAN COMPRESSOR 2	0...2 bar																	020		
PI																					
P 77015	GAN BEH. COOLER 1ST STAGE	0...2 bar																	020		
PI																					
P 77025	GAN BEH. COOLER 2ND STAGE	0...4 bar																	020		
PI																					
P 77031	GAN BEH. 3RD STAGE	0...10 bar																	020		
PISAH SAHH																					
P 77035	GAN BEH. COOLER 3RD STAGE	bar																	020		
PI																					
P 77036	GAN DISCHARGE GAN COMPR. 2	bar																	020		
PI																					

Legend:

F = local, V = local cabinet, S = control room, PCS = process control system

Annotation on column "Hook Up":
(FP*) = Frost Protection recommended

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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn		
P 77753		SEAL GAS N2 COMP.2	bar																022	
PIAL																				
P 77854		LUBE OIL GAN COMP. 2	0...4 bar	SA	PCS	1	A	PCS	3										022	
PISALSALL																				
P 77855		LUBE OIL GAN COMP. 2	0...6 bar	-	F	-	-	F	-										022	local indicator
PI																				
P 77867		LUBE OIL MAIN MOTOR GAN COMP. 2	0...6 bar	-	F	-	-	F	-										022	local indicator
PI																				
P 77868		LUBE OIL MAIN MOTOR GAN COMP. 2	0...6 bar	-	F	-	-	F	-										022	local indicator
PI																				
P 80001		COOLING WATER	0...6 bar				A	PCS	3										023	
PIAL																				
P 81010		PURGE GAS HEADER	0...10 bar				A	PCS	3										025	
PIAL																				
Legend: F = local, V = local cabinet, S = control room, PCS = process control system																				
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																				
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn			Td
P 82010		INSTRUMENT GAS HEADER	0...10 bar				A	PCS	3							025		
PIAL																		
P 82022		GAN TO INSTRUMENT AIR	0...6 bar				-	F	-							025	local indicator	
PI																		
P 84010		STEAM FROM CUSTOMER	0...25 bar				A	PCS	3	A	PCS	3				031		
PIAHL																		
P 87012		PURGE GAS TO COLDBOX	0...400 mbar													024		
PIAL																		
P 87025		TOP HE-BOX	-10...+25 mbar				A	PCS	3	A	PCS	3				024		
PIAHL																		
P 87065		TOP COLD- BOX	-10...+25 mbar				A	PCS	3	A	PCS	3				024		
PIAHL																		
PD 10000		AIR FILTER MAC	0...60 mbar							A	PCS	3	SA	PCS	1	001		
PDIAHSAHH																		
Legend: F = local, V = local cabinet, S = control room, PCS = process control system																		
Annotation on column "Hook Up": (F-P) = Frost Protection recommended																		
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio			W	Kp	Tn
				threshold			threshold			threshold										
PD 11812		VACUUM MONITOR OIL CONTAINER MAC	mbar																	
PDI AL																		027		
PD 11846		OIL FILTERS MAC	mbar																	
PDI AH																		027		
PD 13004		DIFF.-PRESSURE DC/AC	0...60 mbar																	
PDI AHS AH																		002		
PD 13110		CW FILTER F13110	0...1,6 bar																	
PDI																		002		
PD 13210		CW FILTER F13210	0...1,6 bar																	
PDI																		002		
PD 14010		CW FILTER F14010	0...1,6 bar																	
PDI																		003		
PD 14110		CW FILTER F14110	0...1,6 bar																	
PDI																		003		
Legend:																	F = local, V = local cabinet, S = control room, PCS = process control system		Annotation on column "Hook Up": (FP*) = Frost Protection recommended	
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	threshold	W	Kp	Tn			Td						
PD 14210		CW FILTER F14210	0...1,6 bar																	003	local indicator							
PDI																												
PD 15031		AIR FILTER BEHIND MOL SIEVE	0...150 mbar								A	PCS	3							004								
PDIAH															50													
PD 16812		VACUUM MONITOR OIL CONTAINER BAC	-15...15 mbar				A	PCS	3											028								
PDIAL											-5																	
PD 16846		OIL FILTERS BAC	0...1,6 bar								A	PCS	3							028	local indicator							
PDIAH															0,8													
PD 20012		GOX BARRIER K20012	0...40 bar																	010	local indicator							
PDI																												
PD 20015		DIFF.- PRESSURE UK20013	0...40 bar								S	F	3							010								
PDSH															2													
PD 20016		DIFF.- PRESSURE UK20014	0...40 bar								S	F	3							010								
PDSH															2													
Legend:																					F = local, V = local cabinet, S = control room, PCS = process control system				Annotation on column "Hook Up": (FP) = Frost Protection recommended			
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn			Td
PD 21003		DIFF. PRESS. HP-COLUMN	0...300 mbar													014		
PDI AH										A	PCS	3						
PD 22001		DIFF. PRESS. LP-COLUMN	0...100 mbar													013		
PDI AH										A	PCS	3						
PD 24141		DIFF.-PRESS SEAL GAS TURBINE 1	0...2000 mbar	SA	PCS	1	A	PCS	3							029		
PDI ALSALL																		
PD 24169		DIFF.-PRESS OILFILTER	bar													029	local indicator	
PDI AH																		
PD 24241		DIFF.-PRESS SEAL GAS TURBINE 2	0...2000 mbar	SA	PCS	1	A	PCS	3							030		
PDI ALSALL																		
PD 24269		DIFF.-PRESS OILFILTER AF24268	bar													030	local indicator	
PDI AH																		
PD 40003		CAR COLUMN K40002	0...150 mbar													017		
PDI AH										A	PCS	3						
Legend:																	Annotation on column "Hook Up": (FP*) = Frost Protection recommended	
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FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	S/A	loc	prio			W	Kp
				threshold		threshold		threshold		threshold									
PD 40053		DIFF. PRESS. CAR COLUMN K40001	0...150 mbar																
PDIAH																			
PD 43021		DIFF. PRESS. PURE AR COLUMN C43001	0...300 mbar																
PDICAH																			
PD 64060		GOX PRODUCT	0...3 bar																
PDI																			
PD 70846		OIL FILTERS GAN COMP. 1	0...4 bar																
PDIAH																			local indicator
PD 77846		OIL FILTERS GAN COMP. 2	0...4 bar																
PDIAH																			local indicator
Q 15038		PPM CO2 IN AIR BEHIND MOL SIEVE	0...5 ppm																
QIAHAHH																			
Q 15038_2		PPM CO2 IN AIR BEHIND MOL SIEVE	0...50 ppm																
QIAHAHH																			
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TAG-NO.		DESIG- NATION	RANGE	LL		L		H		HH		CONTROLLER SETTINGS				P&I SHEET	REMARKS
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn		
				threshold	threshold	threshold	threshold	threshold	threshold	threshold	threshold						
Q 15043		PPM H2O IN REGENERATION N GAS	0...10 ppm					A	PCS	3	A	PCS	1			005	
QIAHAHH																	
Q 16055		PPM H2O IN HPAIR	0...10 ppm					A	PCS	3	A	PCS	1			006	
QIAHAHH																	
Q 20001		PPM O2 IN HP- GAN OUTLET COLD BOX	0...10 ppm					A	PCS	3	SA	PCS	1			010	
QIAHAHH																	
Q 20001_2		PPM O2 IN HP- GAN OUTLET COLD BOX	0...1000 ppm					A	PCS	3	SA	PCS	1			010	
QIAHAHH																	
Q 20005		PPM O2 IN LP- GAN OUTLET COLD BOX	0...10 ppm					A	PCS	3	SA	PCS	1			010	
QIAHAHH																	
Q 20005_2		PPM O2 IN LP- GAN OUTLET COLD BOX	0...1000 ppm					A	PCS	3	SA	PCS	1			010	
QIAHAHH																	
Q 20011		% O2 IN GOX OUTLET COLD BOX	98...100 %	SA	PCS	1	A	PCS	3							010	
QIALSALL																	
Legend:																	
F = local, V = local cabinet, S = control room, PCS = process control system																	
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																	
Project:				K70101				 AIR LIQUIDE				Dwg.- No.:					
24.02.2006				Frohn				ASU No.09 Kosice				Air Liquide AGS GmbH Füttingsweg 34 D-47805 Krefeld, Germany					
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TAG-NO.		DESIG- NATION	RANGE	LL		L		H		HH		CONTROLLER SETTINGS				P&I SHEET	REMARKS	
FUNCTION				S/A	loc	prio	S/A	loc	prio	S/A	loc	prio	W	Kp	Tn			Td
Q 20011_2		% O2 IN GOX OUTLET COLDBOX	0...100 %	SA	PCS	1	S	PCS	3							010		
QIALSALL																		
Q 20012		PPM N2 IN GOX OUTLET COLDBOX	0...100 ppm							A	PCS	3	SA	PCS	1	010		
QIAHSAHH																		
Q 20012_2		PPM N2 IN GOX OUTLET COLDBOX	0...1000 ppm							A	PCS	3	SA	PCS	1	010		
QIAHSAHH																		
Q 20029		%O2 IN WASTE GAS EX MHE	0...5 %							A	PCS	3				009		
QIAH																		
Q 20029_2		%O2 IN WASTE GAS EX MHE	0...100 %							A	PCS	3				009		
QIAH																		
Q 21004		% O2 IN HP- COLUMN	0...100 %							A	PCS	3				014		
QICAH																		
Q 21004_2		% O2 IN HP- COLUMN	0...100 %							A	PCS	3				014		
QICAH																		
Legend:																		
F = local, V = local cabinet, S = control room, PCS = process control system																		
Annotation on column "Hook Up": (FP*) = Frost Protection recommended																		
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