



INSTRUMENT
DATA SHEET
CONTROL VALVE

PROJECT: 780NEI
SPC. No. 780-FB-3090
DATE JUNE2023 Sh. 18 of 31

PLANT Chlorine Caustic Soda Plant

DESCRIPTION Pneumatic Control valve Tag. FV-0201862
SERVICE Demiwater to catholyte dilution Q.ty 1
LOCATION Line - 40 - CW19-18004 P&ID N° 2-AM-1001/780

OPERATING CONDITION	Units	Min.	Op.	Max.	Des.
FLUID	Liquid / demiwater				
FLOW	m ³ /h		3.5	4.6	
UP STREAM PRESSURE	bar g		4.8	4.8	
DOWN STREAM PRESSURE	bar g.		2.8	2.8	
DIFFERENTIAL PRESSURE	bar		2	2	
SHUT-OFF PRESSURE	bar g		6	6	
TEMPERATURE	°C		30	30	
DENSITY	Kg/m ³		996	996	
VISCOSITY	cP		0.81	0.81	
CRITICAL PRESSURE	bar a.				
VAPOUR PRESSURE	bar a.				

REQUIRED CV

SELECTED CV

VALVE

TYPE Globe single seat
BODY SIZE Std. Mfr.
TRIM SIZE Std. Mfr.
CONNECTION TYPE / RATING Flanged DIN PN 10
BODY MATERIAL Cast iron GGG40.3 PFA lined
BONNET Bellows / PTFE
PACKING BOX PTFE
PLUG TYPE Std. Mfr.
PLUG/STEM MATERIAL st. st. 316 PFA LINED
SEAT MATERIAL PTFE
FLOW CHARACTERISTIC Equal percentage
LEAKAGE (ANSI B16.104) VI
FLOW DIRECTION Open

ACTUATOR

TYPE Spring diaphragm
SUPPLY FAILURE Valve closes
HANDWHEEL Not required
MECHAN. POSITION INDIC. Required

ACCESSORIES

POSITIONER Electropneumatic Smart / HART type
FILTER REGULATOR / SUPPLY Mounted on the valve / min.4.5 - max.7.0 bar
INPUT SIGNAL 4+20 mA
SOLENOID VALVE Three-way/IP 65 Tag.: FY-0201862
Power Supply 24 VDC
Body / Trim Material Brass/AISI 316 st.st.
PNEUMATIC CONNECTION 1/4" NPT-F
ELECTRICAL CONNECTION 1/2"NPT F
LIMIT SWITCH One for close position Tag.: ZSL-0201862
Type Microswitch SPDT

REMARKS

(1)-Label made by st.st. AISI 316 with the Tag. to be fixed in visible position

0	Issue for order	M.MEHD.	H.KAZEMI	JUNE2023
Rev.	Description	Drawn.	Checked.	Date

NIROU CHLOR COMPANY

	INSTRUMENT		PROJECT: 780NEI	
	DATA SHEET		SPC. No. 780-FB-3090	
	CONTROL VALVE		DATE JUNE2023	Sh. 12 of 31
PLANT Chlorine Caustic Soda Plant				
DESCRIPTION	Pneumatic control valve	P&ID N°	21-AM-1001/750	
SERVICE	Hydrogen to vent	Tag.	Dpv-2101852B	
LOCATION	Line: 150-CA71-18232	Q.ty	1	
OPERATING CONDITION	Units	Min.	Op.	Max.
PIPELINES DIAMt (wet gas)	Wet hydrogen			
FLOW	kg/h	13.5	27	135
UP STREAM PRESSURE	bar g	0.27	0.27	0.27
DOWN STREAM PRESSURE	bar g	0	0	0
DIFFERENTIAL PRESSURE	bar	0.27	0.27	0.27
SHUT-OFF PRESSURE	bar a	2.0	2.0	2.0
TEMPERATURE	°C	40	40	92
DENSITY	Kg/m ³	0.13	0.13	0.13
VISCOSITY	cP	0.01	0.01	0.01
REQUIRED Kv		by mfr		
SELECTED Kvs				
VALVE				
TYPE	Globe single seat			
BODY SIZE	std. mfr.			
TRIM SIZE	std. mfr.			
CONNECTION TYPE / RATING	Flanged -DIN , PN 40			
BODY MATERIAL	Carbon steel			
BONNET	Std.			
PACKING BOX	PTFE			
PLUG TYPE	Contoured			
PLUG/STEM MATERIAL	St.st.			
SEAT MATERIAL	St.st. /PTFE			
FLOW CHARACTERISTIC	Equal-percentage			
LEAKAGE (ANSI B16.104)	VI			
FLOW DIRECTION	Open			
ACTUATOR				
TYPE	Spring diaphragm			
SUPPLY FAILURE	Valve close			
HANDWHEEL	Not required			
MECHAN. POSITION INDIC.	Required			
ACCESSORIES				
POSITIONER	Electropneumatic Smart / HART type,-ATEX EX-ia IIC T4/T5			
FILTER REGULATOR / SUPPLY	Mounted on the valve / min.4.5 max.7.0 bar			
INPUT SIGNAL	4-20 mA Vdc			
SOLENOID VALVE	Three -way / IP65,-ATEX EX-ia IIC T4/T5 Tag. dPY-2101852B			
Power Supply - Body / Trim Material	24V DC			
LIMIT SWITCH	One for closed position / one spare Tag. ZSL-2101852B			
Type	Microswitch SPDT type,-ATEX EX-ia IIC T4/T5			
PNEUMATIC CONNECTION	1/4" NPT-F			
ELECTRICAL CONNECTION	Cable gland M20x1,5			
POSITION TRANSMITTER	Not required			
Type				
REMARKS				
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	INSTRUMENT		PROJECT: 780NEI		
	DATA SHEET		SPC. No. 780-FB-3090		
	CONTROL VALVE		DATE JUNE2023	Sh. 11 of 31	
PLANT Chlorine Caustic Soda Plant					
DESCRIPTION Pneumatic control valve		P&ID N°	21-AM-1001/780		
SERVICE Hydrogen to HCL plant		Tag.	dPV-2101852A		
LOCATION Line: 250 - CA71 - 18229		Q.ty	1		
OPERATING CONDITION					
	Units	Min.	Op.	Max.	Des.
FLUID (gas)	Wet hydrogen				
FLOW	kg/h		115	135	160
UP STREAM PRESSURE	bar g		0.27/0.33	0.27/0.33	0.27/0.33
DOWN STREAM PRESSURE	bar g		0.16	0.16	0.16
DIFFERENTIAL PRESSURE	bar		0.11/0.17	0.11/0.17	0.11/0.17
SHUT-OFF PRESSURE	bar a		2.0	2.0	2.0
TEMPERATURE	°C		40	40	92
DENSITY	Kg/m ³		0.25	0.25	0.25
VISCOSITY	cP		0.01	0.01	0.01
REQUIRED Kv by mfr					
SELECTED Kvs					
VALVE					
TYPE	Globe single seat				
BODY SIZE	std.mfr.				
TRIM SIZE	std.mfr.				
CONNECTION TYPE / RATING	Flanged - DIN , PN 40				
BODY MATERIAL	Carbon steel				
BONNET	Std.				
PACKING BOX	PTFE				
PLUG TYPE	Contoured				
PLUG/STEM MATERIAL	St.st.				
SEAT MATERIAL	St.st. /PTFE				
FLOW CHARACTERISTIC	Equal-percentage				
LEAKAGE (ANSI B16.104)	VI				
FLOW DIRECTION	Open				
ACTUATOR					
TYPE	Spring diaphragm				
SUPPLY FAILURE	Valve closes				
HANDWHEEL	Not required				
MECHAN. POSITION INDIC.	Required				
ACCESSORIES					
POSITIONER	Electropneumatic Smart / HART type-ATEX EX-ia IIC T4/T5				
FILTER REGULATOR / SUPPLY	Mounted on the valve / min.4.5 max.7.0 bar				
INPUT SIGNAL	4+20 mA Vdc				
SOLENOID VALVE	Three-way/IP65 ,ATEX EX-ia IIC T4/T5		Tag.	PY-2101852A	
Power Supply - Body / Trim Material	24 V DC				
LIMIT SWITCH	One for closed position / one spare		Tag.	ZSL-2101852A	
Type	Microswitch SPDT type,ATEX EX-ia IIC T4/T5				
PNEUMATIC CONNECTION	1/4" NPT-F				
ELECTRICAL CONNECTION	Cable gland M20x1,5				
POSITION TRANSMITTER	Not required				
Type					
REMARKS					
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	INSTRUMENT		PROJECT: 780 NEI	
	DATA SHEET		SPC. No. 780-FB-3090	
	CONTROL VALVE		DATE Jun-23	Sh. 10 of 31
PLANT Chlorine Caustic Soda Plant				
DESCRIPTION	Pneumatic control valve		P&ID N°	6-AM-1001/780
SERVICE	Chlorine to emergency absorption		Tag.	PV-0601851B
LOCATION	Line: 250-CR61-18149		Q.ty	1
OPERATING CONDITION	Units	Min.	Op.	Max. Des.
FLUID (wet gas)	Wet chlorine			
FLOW	kg/h	220	1400	3000 (1)
UP STREAM PRESSURE	bar g	0.26	0.26	0.26
DOWN STREAM PRESSURE	bar g	-0.01	-0.01	-0.01
DIFFERENTIAL PRESSURE	bar	0.27	0.27	0.27
SHUT-OFF PRESSURE	bar a	2.0	2.0	2.0
TEMPERATURE	°C	88	88	92
DENSITY	Kg/m ³	1.32	1.32	1.32
VISCOSITY	cP	0.014	0.014	0.014
REQUIRED Kv		by mfr		
SELECTED Kvs				
VALVE				
TYPE		Butterfly		
BODY SIZE		std. mfr.		
TRIM SIZE		std. mfr.		
CONNECTION TYPE / RATING		Lug ,UNI EN 1092-1 ,PN10,TYPE B1(R.F.)		
BODY MATERIAL		Cast iron , PTFE lined		
BONNET		Std.		
PACKING BOX		PTFE		
PLUG TYPE		Lens		
PLUG/STEM MATERIAL		st.st. PTFE lined		
SEAT MATERIAL		PTFE		
FLOW CHARACTERISTIC		Equal-percentage by positioner		
LEAKAGE (ANSI B16.104)		VI		
FLOW DIRECTION		Both		
ACTUATOR				
TYPE		Single acting rack and pinion		
SUPPLY FAILURE		Valve open		
HANDWHEEL		Not required		
MECHAN. POSITION INDIC.		Required		
ACCESSORIES				
POSITIONER		Electropneumatic Smart / HART type		
FILTER REGULATOR / SUPPLY		Mounted on the valve / min.4.5 max.7.0 bar		
INPUT SIGNAL		4-20 mA Vdc		
SOLENOID VALVE		Not required		
Power Supply -		Body / Trim Material		
LIMIT SWITCH		Not required		
Type				
PNEUMATIC CONNECTION		1/4" NPT-F		
ELECTRICAL CONNECTION		Cable gland,M20*1.5		
POSITION TRANSMITTER		required Tag. ZT-0601851B		
Type		2 wires 4-20 mA integrated into the positioner		
REMARKS				
Label made by st.st. AISI 316 with the Tag. to be fixed in visible position				
(1) Not to be controlled.It shall only be ensured that with valve completely open the relevant differential pressure dp is nihil.				
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	DATA SHEET	SPC. No. 780-FB-3090	
	CONTROL VALVE	DATE JUNE2023	Sh. 9 of 31
PLANT Chlorine Caustic Soda Plant			
DESCRIPTION	Pneumatic control valve	P&ID N°	06-AM-1001/780
SERVICE	Wet Chlorine to drying tower	Tag.	PV-0601851A
LOCATION	Line: 250-CR61-18156	Q.ty	1
OPERATING CONDITION		Units	Min. Op. Max. Des.
FLUID	(wet gas)	Wet chlorine	
FLOW		kg/h	1500 2350 2750 3000
UP STREAM PRESSURE		bar g	0.25 0.25 0.25 0.25
DOWN STREAM PRESSURE		bar g	-0.05 -0.05 -0.05 -0.05
DIFFERENTIAL PRESSURE		bar	0.3 0.3 0.3 0.3
SHUT-OFF PRESSURE		bar a	2.0 2.0 2.0 2.0
TEMPERATURE		°C	20 20 85 90
DENSITY		Kg/m ³	2.7 2.7 2.7 2.7
VISCOSITY		cP	0.014 0.014 0.014 0.014
REQUIRED Kv		by mfr	
SELECTED Kvs			
VALVE			
TYPE	Butterfly		
BODY SIZE	std. mfr.		
TRIM SIZE	std. mfr.		
CONNECTION TYPE / RATING	Lug, UNI EN 1092-1, PN10, TYPE B1(R.F.)		
BODY MATERIAL	Cast iron PTFE lined		
BONNET	Std.		
PACKING BOX	PTFE		
PLUG TYPE	Lens		
PLUG/STEM MATERIAL	st.st. / PTFE lined		
SEAT MATERIAL	PTFE		
FLOW CHARACTERISTIC	Equal-percentage by positioner		
LEAKAGE (ANSI B16.104)	VI		
FLOW DIRECTION	Both		
ACTUATOR			
TYPE	Single acting rack and pinion		
SUPPLY FAILURE	Valve closes		
HANDWHEEL	Not required		
MECHAN. POSITION INDIC.	Required		
ACCESSORIES			
POSITIONER	Electropneumatic Smart / HART type		
FILTER REGULATOR / SUPPLY	Mounted on the valve / min.4.5 max.7.0 bar		
INPUT SIGNAL	4+20 mA Vdc		
SOLENOID VALVE	Three-way/IP65 Tag. PY-0601851A		
Power Supply - Body / Trim Material	220V 50Hz - anodized aluminium / st.st.		
LIMIT SWITCH	One for closed position / one spare Tag. ZSL-0601851A		
Type	SPDT		
PNEUMATIC CONNECTION	1/4" NPT-F		
ELECTRICAL CONNECTION	Cable gland M20x1,5		
POSITION TRANSMITTER	Not required		
Type			
REMARKS			
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