CONTROL VALVES & ACTUATORS

CONTROL VALVE WITH DIAPHRAGM ACTUATOR (NOTE 1)

CONTROL VALVE WITH DIAPHRAGM ACTUATOR & HANDWHEEL

HAND CONTROL VALVE

SELF PRESSURE REDUCING REGULATOR

PRESSURE REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP

SELF BACK PRESSURE REGULATOR

BACK PRESSURE REGULATOR WITH EXTERNAL PRESSURE TAP

MOTOR OPERATED VALVE (NOTE 1)

MANUAL ANGLE VALVE

CONTROL ANGLE VALVE

ON/OFF OPERATED VALVE (XV, BDV, ESDV OR SDV) (NOTES 1, 2)

LINE BREAK VALVE (GAS OPERATED VALVE, GOV)

CONTROL VALVE,
FO : AIR FAILURE OPENS
FC : AIR FAILURE CLOSES
FL : AIR FAILURE LOCKS

THREE-WAY VALVE (FAIL OPEN PATH A TO C)

3 WAY SOLENOID VALVE (OPEN PATH A TO C WHEN DEENERGISED).
* SEE TABLE FOR FIRST LETTER

CONTROL VALVE OPEN/CLOSED INDICATION ON PCS
* SEE TABLE FOR FIRST LETTER

CONTROL VALVE FAIL CLOSED. ON/OFF ACTUATION BY SOLENOID.

NOTE 1 : UNLESS SHOWN OTHERWISE ON PID, BODIES OF CONTROL, ON/OFF AND MOTOR OPERATED VALVES ARE UNSPECIFIED. TYPE WILL BE IN ACCORDANCE WITH PROCESS REQUIREMENTS AND INSTRUMENTATION RULES.

NOTE 2 : TYPE OF ON/OFF ACTUATOR WILL BE IN ACCORDANCE WITH INSTRUMENT RULES.

RELIEF VALVES

ORIFICE & SIZE
SET PRESSURE (BARG)
SAFETY RELIEF VALVE

SAFETY VALVE PILOT OPERATED

VACUUM RELIEF VALVE

PRESSURE / VACUUM RELIEF VALVE

THERMAL EXPANSION RELIEF VALVE

SIZE
BURST PRESSURE (BARG)
RUPTURE DISC FOR PRESSURE RELIEF.

INSTRUMENT LINE SYMBOLS

PROCESS/INSTRUMENT LINE

ELECTRICAL SIGNAL

PNEUMATIC SIGNAL

CAPILLARY TUBING

HYDRAULIC LINE

INTERNAL SOFTWARE LINK OR SYSTEM LINK

SONIC OR RADIATION LINK

FLOW PRIMARY ELEMENTS

RESTRICTION ORIFICE OR ORIFICE PLATE

VORTEX

"QUICK" CHANGE ORIFICE PLATE

VENTURI

POSITIVE DISPLACEMENT METER

CORIOLIS

TURBINE (FULL BORE)

PITOT TUBE

ELECTROMAGNETIC

ULTRASONIC

TAG NUMBERING

COMPLETE NUMBER

XXXX S Q YYYY

SUFFIX (*)
SEQUENTIAL NUMBER
LETTER CODE (UP TO 5 ALPHA) USED TO IDENTIFY THE INSTRUMENT FUNCTION (SEE TABLE)
SECTION NUMBER
UNIT NUMBER (3 DIGITS)

(*) – SPLIT RANGE ELEMENTS OR MULTIPLE ELEMENTS (LG, VOTING...) ARE IDENTIFIED WITH A SUFFIX A, B, C AFTER THE SEQUENTIAL NUMBER YYYY.

– SUFFIX A, B, C SHALL ALSO BE USED IN CASE OF MULTIPLE RELIEF VALVES FOR SAME SERVICE.

REPRESENTATION ON PID

FUNCTION
CONTROL SIGNAL
SEQUENTIAL NUMBER
LOW ALARM
LOW LOW ALARM

UNIT AND SECTION NUMBER SHALL BE INDICATED AS COMMON NOTE ON THE P&ID

IDENTIFICATION TABLE AND COMBINATION OF LETTERS

VARIABLE	PRIMARY ELEMENT	INDICATION	HARD RECORDER	CONTROLLER			TRANSM.	CONTROL VALVE	SOLENOID VALVE	CALCULATION BLOCK	SWITCH		ALARM		STATUS
				BLIND	INDICAT.	HARD RECORD.					HIGH	LOW	HIGH	LOW	
FLOW	FE	FG/FI-FQI	FR-FQR	FC	FIC	FRC	FT	FV	FX	FY	FSH FSHH	FSL FSLL	FAH FAHH	FAL FALL	
LEVEL (**)	–	LG/LI	LR	LC	LIC	LRC	LT	LV	LX	LY	LSH LSHH	LSL LSLL	LAH LAHH	LAL LALL	
PRESSURE	–	PG/PI	PR	PC	PIC	PRC	PT	PV	PX	PY	PSH PSHH	PSL PSLL	PAH PAHH	PAL PALL	
PRESSURE DIFFERENTIAL	–	PDG/PDI	PDR	PDC	PDIC	PDRC	PDT	PDV	PDX	PDY	PDSH PDSHH	PDSL PDSLL	PDAH PDAHH	PDAL PDALL	
TEMPERATURE	TE	TG/TI	TR	TC	TIC	TRC	TT	TV	TX	TY	TSH TSHH	TSL TSLL	TAH TAHH	TAL TALL	
ANALYSIS (*)	AE	AI	AR	AC	AIC	ARC	AT		AX	AY	AS		AA		
SPEED	SE	SI	SR	SC	SIC	SRC	ST			SY	SSH	SSL	SA		
BURNER FLAME	BE	–	–	–	–	–	–				BSLL		BALL		BL
VOLTAGE	EE	EI	ER	EC	EIC	ERC	ET			EY	ES		EA		
CURRENT	IE	II	IR	IC	IIC	IRC	IT			IY	IS		IA		
OTHER	XE	XI	XR	XC	XIC	XRC	XT	XV		XY	XSH XSHH	XSL XSLL	XAH XAHH	XAL XALL	XL
MANUALLY OPERATED				HC	HIC			HV	HX		HS				
MOTOR OPERATED VALVE								MOV							
VIBRATION	VE	VI	VR				VT				VSH		VAH		
POSITION		ZI					ZT				ZSO	ZSC	ZAH	ZAL	ZLO ZLC
MULTI VARIABLE				UC	UIC			UV	UX	UY			UA		UL
POWER	JE	JI	JR				JT								
SEQUENTIAL OPERATED								KV							
SHUTDOWN VALVE (HIPPS)															SXL
EMERGENCY SHUTDOWN VALVE (HIPPS)															EXL

(*) INCLUDES CONDUCTIVITY, DENSITY, PH, MOISTURE, etc... (TYPE WILL BE DETAILED ON PID).
(**) LIQUID/GAS INTERFACE – FOR LIQUID/LIQUID INTERFACE, D SHALL BE ADDED AS SECOND LETTER.

FUNCTION SYMBOLS

TECHNICAL ROOM MOUNTED

LOCAL PANEL MOUNTED

GB LOCAL GAUGE BOARD MOUNTED

CONTROL ROOM MOUNTED

LOCAL ANNUNCIATOR

LOCAL ALARM LAMP

LOCALLY MOUNTED

AVAILABLE ON VDU.PCS FUNCTION (CONTROL ROOM)

PCS FUNCTION NOT AVAILABLE TO OPERATOR

ESD 1XX ESD LEVEL 1

SD 2XX SD LEVEL 2

USS XXXXX ULTIMATE SAFETY SYSTEM

I XXY SD LEVEL 3

SIGNAL TO UCP AND MONITORED ON PCS VIA SERIAL LINE (FOR PACKAGE)

I XX PCS PROCESS INTERLOCK

FIRE & GAS SYSTEM

I XX PLC INTERLOCK (FOR PACKAGE UNIT)

MCC INTELLIGENT MCC

SIGNAL TO UCP (FOR PACKAGE)

HIPPS HIGH INTEGRITY PRESSURE PROTECTION SYSTEM

R LOCAL RESET (MECHANICAL)

FLOW

ORIFICE PLATE

ROTAMETER

SHARED DISPLAY ACCESSIBLE TO OPERATOR THROUGH PCS CONSOLE

SHARED CONTROL SOFTWARE ALARM AND DISPLAY THROUGH PCS CONSOLE

RESTRICTION ORIFICE

SIGNAL TO STD PLC WITH PCS INDICATOR (HARD WIRED IF NO SERIAL LINK AVAILABLE)

LEVEL

LEVEL GAUGE

PNEUMATIC TRANSMITTER WITH LOCAL INDICATOR

LEVEL CONTROLLER WITH LOCAL INDICATOR (IMPULSE LINE AND TRANSMITTER TRACED)

LIQUID/LIQUID INTERFACE LEVEL TRANSMITTER CONNECTED TO SD, GENERATES ALARM TO PCS.

FOR AUTOMATIC START UP AND STOP, ALARMS AT HIGHER AND LOWER LEVEL WILL BE GENERATED IN THE PCS.

PRESSURE

PRESSURE TEST-POINT

PRESSURE GAUGE

LOCAL INDICATION OF DIFFERENTIAL PRESSURE

SIGNAL TO PSS INTERLOCK WITH PSS/PCS ALARM INDICATOR

DIFFERENTIAL PRESSURE TRANSMITTER WITH DIAPHRAGM SEALS, ALARM INDICATION ON PCS VDU & LOCAL

N2/AIR BUBBLING

LEVEL TRANSMITTER BUBBLING TYPE

TEMPERATURE

THERMOWELL

TEMPERATURE GAUGE (WITH THERMOWELL)

SHARED CONTROL SOFTWARE ALARM SPLIT RANGE REPRESENTATION

SPLIT RANGE

THERMOCOUPLE SURFACE MOUNTED (SKIN) PCS INDICATOR

OTHERS

INSTR. PIP.

ANALYSER CONTROL AND INDICATION IN PCS

NOTE: RETURN LOOP ONLY IF APPLICABLE. TO BE DIRECTED TO THE APPROPRIATE DESTINATION

MASS OR Nm3/h

FLOW MEASUREMENT WITH TEMP./PRES. COMPENSATION

LEVEL CONTROLLER RESETS FLOW CONTROLLER

OVERRIDE BY LOW LEVEL

TIC CONTROL LOOP, OVERRIDEN BY LOW LEVEL

NOTES

1 – DELETED.

2 – DELETED.

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