DWG. NO. 69-P-1-00-402-3-2

TABLE 1

THE MEANING OF INSTRUMENT BUBBLE IDENTIFICATION LETTERS. THIS TABLE APPLIES ONLY TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS.

	FIRST LETTER		SUCEEDING LETTERS		
	MEASURED OR INITATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECRICAL)			CONTROL	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTIONAL)			
G	GAUGING (DIMENSIONAL)		GLASS		
H	HAND (MANUALLY INITIATED				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN, FREQUENCY			
K	TIME OR TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		
M	MOISTURE OR HUMIDITY				MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE		
O	USER'S CHOICE		ORIFICE RESTRICTION	USER'S CHOICE	USER'S CHOICE
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFTEY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTI-VARIABLE		MULTI-FUNCTION	MULTI-FUNCTION	MULTI-FUNCTION
V	VIBRATION				
W	WEIGHT OR FORCE		WELL	VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVEN, STATE OR PRESENCE			RELAY OR COMPUTE	
Z	POSITION DIFFERENTIAL			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

TABLE 2

THE FUNCTION AND DESIGNATION ASSOCIATED WITH RELAYS MAY BE USED AS FOLLOWS, INDIVIDUALLY OR IN CONBINATION. THE USE OF A BOX ENCLOSING A SYMBOL IS OPTIONAL. THE BOX IS INTENDED TO AVOID CONFUSION BY SETTING OFF THE SYMBOL FROM OTHER MARKINGS ON THE DIAGRAM.

	SYMBOLS	FUNCTION
1.	Σ	ADD OR TOTALIZE (ADD AND SUBTRACT) **
2.	Δ	SUBTRACT **
3.	+/− +/−	BIAS *
4.	x/x	AVERAGE
5.	K 1:3 2:1 1:1	PROPORTIONAL GAIN, OR ATTENUATE OR BOOST (INPUT : OUTPUT) *
6.	×	MULTIPLY
7.	÷	DIVIDE
8.	$\sqrt[n]{}$	ROOT EXTRACTION (n=3, CUBE ROOT, ETC.)
9.	x^n	RAISE TO POWER EXPONENTIAL
10.	f(x)	CHARACTERIZE
11.	>	HIGH SELECT. SELECT HIGHEST (HIGHER) MEASURED VARIABLE (NOT SIGNAL, UNLESS SO NOTED).
12.	<	LOW SELECT. SELECT LOWEST (LOWER) MEASURED VARIABLE (NOT SIGNAL, UNLESS SO NOTED).
13.	P/E E/P A/D D/A	CONVERT: FOR INPUT/OUTPUT SEQUENCES OF THE FOLLOWING: E–VOLTAGE, H–HYDRAULIC, O–ELECTROMAGNETIC SONIC, B–BINARY, P–PNEUMATIC, R–RESISTANCE (ELECT.), I–CURRENT (ELECT.), A–ANALOG, D–DIGITAL
14.	∫	INTEGRATE (TIME INTEGRAL)
15.	d/dt	DERIVATVE OR RATE
16.	AS REQUIRED IN ACCORDANCE WITH ISA–S5.1, 1984	UNCLASSIFIED

* USED FOR SINGLE–INPUT RELAY.

** USED FOR RELAY WITH TWO OR MORE INPUTS.

NOTES:

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TPI SPLITTER PLANT PHASE III PROJECT
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D/K HDS UNIT
PIPING & INSTRUMENT DIAGRAM
STANDARD LOGIC & INSTRUMENT SYMBOLS

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