

ANSI/ISA-5.1-2024 Table 1 Identification Letters					
	Column 1	Column 2	Column 3	Column 4	Column 5
	Measured/ Initiating Variable	Variable Modifier	Readout/ Passive Function	Output/ Active Function	Function Modifier
A	Analysis		Alarm		
B	Burner, Combustion		User	User	User
C	CONDUCTIVITY (Electrical)			Control	Close
D	DENSITY (Mass), SPECIFIC GRAVITY	Difference, Differential			Deviation
E	Voltage		Sensor, Primary Element		
F	Flow, Flow Rate	Ratio			
G	STATUS		Glass, Gauge, Viewing Device		
H	Hand				High
I	Current		Indicate		
J	Power		Scan		
K	Time, Schedule	Time Rate of Change		Control Station	
L	Level		Light		Low
M	User				Middle, Intermediate
N	User		RUN	User	User
O	User		Orifice, Restriction Point (Test Connection)		Open
P	Pressure				
Q	Quantity	Integrate, Totalise	Integrate, Totalise		
R	Radiation		Record		Run
S	Speed, Frequency	Safety		Switch	Stop
T	Temperature			Transmit	
U	Multivariable		Multifunction	Multifunction	
V	Vibration, Mechanical Analysis			Valve, Damper, Louvre	
W	Weight, Force		Well, Probe		
X	Unclassified	X-axis	Accessory Devices, Unclassified	Unclassified	Unclassified
Y	Event, State, Presence	Y-axis		Auxiliary Devices Driver, Actuator, Unclassified final control element	
Z	Position, Dimension	Z-axis, Safety, Instrumented System			

Cells in **ALL CAPS** and **BOLD** are to identify Peel User preferences.

Line Symbols: Instrument-to-Process Connections
ANSI/ISA-5.1-2024 Table 9, Symbol 2

====-(ST)====-(ST)====	Primary Process Line (Mbld 0.70 mm)
====-(ET)====-(ET)====	Secondary Process Line (Wide 0.35 mm)
====-(CW)====-(CW)====	Instrumentation Line (Thin 0.25 mm)

Line Symbols: Instrument-to-Instrument Connections
ANSI/ISA-5.1-2024 Table 10

— IA — IA —	Industrial Air (add notation)
— ES — ES —	Electrical Supply (add optional notation)
— HS — HS —	Hydraulic Supply (add optional notation)
— / — / —	Undefined Signal
— # — # — #	Pneumatic Signal
— - - - -	Electronic Signal
— L — L — L	Continuously Variable
— x — x — x — x — x	Hydrolic
— ~ — ~ — ~ — ~ — ~	Capillary
— ~ — ~ — ~ — ~ — ~	Guided Electromagnetic
— ~ — ~ — ~ — ~ — ~	Unguided Electromagnetic
— o — o — o — o — o	Communication Link
— • — • — • — • — •	Communication Independent
— ◊ — ◊ — ◊ — ◊ — ◊	Intelligent Device Link
— ◉ — ◉ — ◉ — ◉ — ◉	Smart Device Link
— ● — ● — ● — ● — ●	Mechanical Link

See ANSI/ISA-5.1-2024 Table 10 for additional details and notes on linetypes.

Instrumentation Device and Function Symbols

Primary or Basic Process Control System	Alternate or Safety Instrumented System (ie PLC)	Computer Systems and Software	Discrete	SP	FNCT LOOP	BH DL	Momentary
FNCT LOOP	FNCT LOOP	FNCT LOOP	FNCT LOOP	LOCATION:			
FNCT LOOP	FNCT LOOP	FNCT LOOP	FNCT LOOP	Located in Field			
FNCT LOOP	FNCT LOOP	FNCT LOOP	FNCT LOOP	Front of Central or Main Panel			
FNCT LOOP	FNCT LOOP	FNCT LOOP	FNCT LOOP	Rear of Central or Main Panel			
FNCT LOOP	FNCT LOOP	FNCT LOOP	FNCT LOOP	Front of Local or Secondary Panel			
FNCT LOOP	FNCT LOOP	FNCT LOOP	FNCT LOOP	Rear of Local or Secondary Panel			

See ANSI/ISA-5.1-2024 Table 2 for additional details.
FNCT: Function LOOP: Loop Number

Miscellaneous Function Symbols (Table 3)

Interlock logic Undefined	Patchboard Plugin Point
Interlock logic AND Function	Pilot Light
Interlock logic OR Function	

See ANSI/ISA-5.1-2024 Table 3 for additional details.

Primary elements and transmitters
Table 4 – Measurement symbols
(*)

Line Symbols: Instrument-to-Process
& to-Equipment Connections

Generic	Socket Welded
Threaded	
Flanged	Welded
Heat [cool] Traced Instruments (ST) steam (ET) electrical (CW) chilled water	Heat [Cool] Traced Lines

See ANSI/ISA-5.1-2024 Table 9 for additional
notes on the use of Instrument connections.

Instrument-to-Instrument Connections

Signal Source	Drawing-to-Drawing Signal Connections
Signal Receiver	INSTR DI604
Signal Input	INSTR SHT
Signal Output	INSTR SHT

See ANSI/ISA-5.1-2024 Table 10 for additional
notes on the use of from/to signal connections.

Signal Processing Function Symbols

Σ	Σ_n	Δ	K	1:4	J	d/d_t
X	\div	$\sqrt{\quad}$	X^n	f(x)	f(t)	
>	<	↗	↖	-K	∇	
+	-	±	$f_r/10$			

See ANSI/ISA-5.1-2024 Table 16 for additional details.

Measurement Symbols:
Primary Elements (Table 6)

Backpressure Internal	Dual Element	UV Sensing Probe FO, UV, TV, IR	Flame Rod	Generic Orifice	Quick Change	Concentric	Eccentric	Circle Quadrant	Multi-Hole	Generic Tube	Venturi	Flow Nozzle	Flow Tube	Integral Orifice	Standard Pitot	Averaging Pitot	Turbine or Propeller	Vortex Shedding	Target	Magnetic	Thermal Mass	Positive Displacement	Annular	Wedge	Coriolis	Sonic	Variable Area	Open Channel Weir	Open Channel Flume	Displacer
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Ball Float	Radiation, Multi-Point	Dip Tube	Float w/ Guide Wires	Insert Probe	Radar (Free and Guided) Flow Conditioner and Purge Symbol
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See ANSI/ISA-5.1-2024 Table 6
for additional details and notes.

Valves (Table 11)

Gate	Globe	Two-Way Angle	Three-Way	Four-Way	Butterfly	Ball Plug	Rotary Disc	Diaphragm	Pinch	Bellows	Damper	Parallel Blade	Opposed Blade	Solenoid	Solenoid Angled	Solenoid 3-Way	Solenoid 4-Way	Solenoid 5-Way
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Actuators (Table 12)

Spring Diaphragm	Spring Diaphragm w/ Positioner	Pressure Balance	Linear Piston	Linear Piston w/ Positioner	Rotary Piston	Rotary Piston w/ Positioner	Bellows Spring	Motor Operated	Modulated Solenoid	Side-Mounted Handwheel	Top-Mounted Handwheel	Manual / Hand Operated	Electrohydraulic	w/ Manual Partial Stroke Test	w/ Remote Partial Stroke Test	Generic On/Off	Auto-Reset Solenoid	Manual or Remote Reset	Manual and Remote Reset	Spring or Weight Relief or Safety	Pilot Actuated Relief or Safety	Permanent Magnet	Variable/ Adjustable Speed Drive
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Pressure Regulation
(Table 13)

Backpressure Internal	Backpressure External	Pressure-Reducing Internal	Pressure-Reducing External	Differential External	Differential Internal	Temperature Regulator
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De-energising (Table 14)

Fail to Open	Fail to Closed	Fail to Locked in Last	Fail Last / Drift Open	Fail Last / Drift Closed
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Functional Diagramming

Measuring, Input, or Readout	Automatic Single-mode	Automatic Two-mode	Automatic Three-mode	Automatic Signal Processor	Manual Signal Processor	Final Control Element	Final Control Element w/ Positioner
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See ANSI/ISA-5.1-2024 Table 15
for additional notes regarding
Functional Diagramming Symbols.

Flow Direction


Fine Lineweight	Medium Bold Lineweight
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Connection Points

Do not use loops or gaps
to indicate cross-overs.
Rather Ø0.75 circles or the
provided symbol for connections.

RESOURCE DRAWING

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