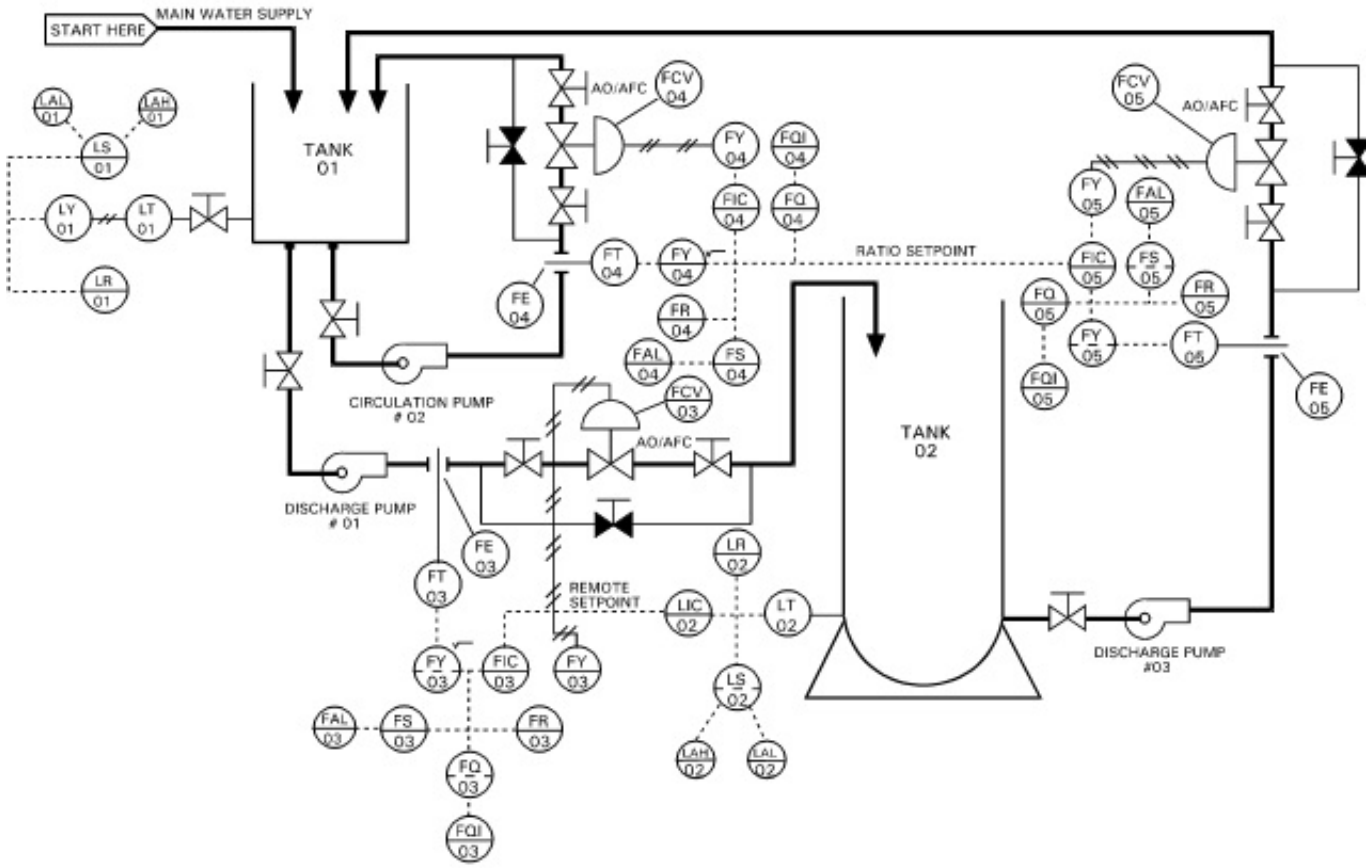
P&ID and Common Abbreviation

Areej February 8, 2018



INTRODUCTION

A piping and instrumentation diagram (P&ID) is a diagram in the process industry which shows the piping of the process flow together with the installed equipment and instrumentation. The P&ID are also used to operate the process system. P&ID shows all of piping including the physical sequence of branches, reducers, valves, equipment, instrumentation and control interlocks.In this session we are going to discuss about P&ID and Common Abbreviation.

Based on Institute of Instrumentation and Control, a piping and instrumentation diagram (P&ID)is defined by the diagram which shows

the interconnection of process equipment and the instrumentation used to control the process. In the process industry, a standard set of symbols is used to prepare drawings of processes. The instrument symbols used in these drawings are generally based on International Society Automation (ISA) Standard S5.1

Functions of P&ID

The main function of P&ID is related with a significant role in the maintenance and modification of the process that it describes. It is critical to demonstrate the physical sequence of equipmenvt and systems, as well as how these systems connect. During the design stage, the diagram also provides the basis for the development of system control schemes, allowing for further safety and operational investigations, such as the hazard and operability study (HAZOP).

There are a few rules in preparing a P&ID whereby there are item that should be included and some items should not.

A P&ID should include:

- Instrumentation and designations
- Mechanical equipment with names and numbers
- All valves and their identifications
- Process piping, sizes and identification
- Miscellaneous – vents, drains, special fittings, sampling lines, reducers, increasers and swaggers
- Permanent start-up and flush lines
- Flow directions
- Interconnections references
- Control inputs and outputs, interlocks
- Interfaces for class changes
- Seismic category
- Quality level
- Annunciation inputs
- Computer control system input
- Vendor and contractor interfaces
- Identification of components and subsystems delivered by others
- Intended physical sequence of the equipment

A P&ID should not include:

- Instrument root valves
- control relays
- manual switches
- primary instrument tubing and valves
- pressure temperature and flow data

P&ID Common Abbreviation

	Analyzer Element (Chemical		Motion TransmitterPressure

AEAOV	Composition)Air Operated Valves
BE	Burner Element (flame detector)
CR	Conductivity Recorder
DP	Differential Pressure
DT	Density Transmitter
FC	(also specific gravity and Baume)
FCV	Flow Controller
FE	Flow Control Valve
FG	Flow Element
FHC	Flow Sight Glass
FHS	Flow Hand Control (manual)
FI	Hand Switch in Flow Loop
FIC	Flow Indicator
FM	Flow Indicating Controller
FQR	Flow Meter (Pos. Displ. or Turb)
FQI	Flow Qantity Recorder
FR	Flow Quantity Indicator
FRC	Flow Recorder
FS	Flow Recorder Controller
FT	Flow Switch
Ftd	Flow Transmitter
HCV	Flow Transducer
HS	Alarm
MTPA	Pressure Controller
PC	Pressure Control Valve
PCV	Differential Pressure Indicator
Pdl	pH Transmitter
pHT	Pressure Indicator
PI	Press. Indicating Controller
PIC	Press. Indicating Transmitter
PIT	Pressure Recorder
PR	Pressure Switch
PS	Pressure Transmitter
PT	Pressure Transducer
PTd	Pressure Relief Valve
PZV	Restriction Orifice
RO	Speed Transmitter
ST	Solenoid Valve
SV	Temp. Controller
TC	Temp. Control Valve
TCV	Temp. Element
TE	Temp. Indicator
TI	Temp. Indicating Controller
TIC	Temp. Recorder
TR	
TRAP	

LC	Hand operated Control Valve	TS	Steam Trap or Airvent
LCV	Hand switch	TSA	Temp. Switch
LG	Level Controller	TT	Temp. Switch Alarm
LHC	Level Control Valve	TTd	Temp. Transmitter
LI	Level Gage Glass	TW	Temp. Transducer
LIC	Level Hand Control (manual)	TY	Thermowell
LR	Level Indicator	WE	Relay in Temperature Loop
LS	Level Indicating Controller	XA	Weight Measuring Element
LT	Level Recorder	XVE	Annunciator
Ltd	Level Switch	XVS	Vibration Detector
MOV	Level Transmitter	ZV	Vibration Switch
	Level Transducer		Safety Shut-down (Pilot) valve
	Motor Operated Valve		