

# INSTRUMENTATION SYMBOLS & NUMBERING SYSTEM


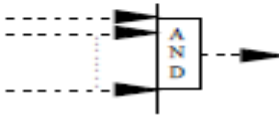

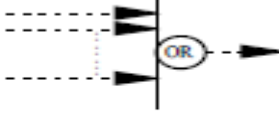

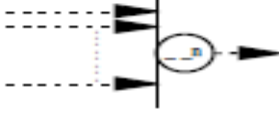

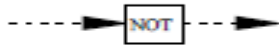


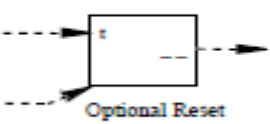
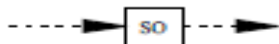

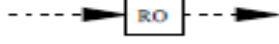
1. SAMA (SCIENTIFIC APPARATUS MAKERS ASSOCIATION) SYMBOLS

2. KKS (KRAFTWERK KENNZEICHEN SYSTEM)

3. ISA SYMBOLS




# SAMA (SCIENTIFIC APPARATUS MAKERS ASSOCIATION) SYMBOLS

TABLE 1 Enclosure Symbols

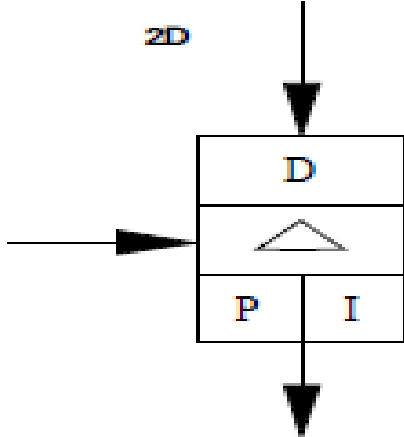
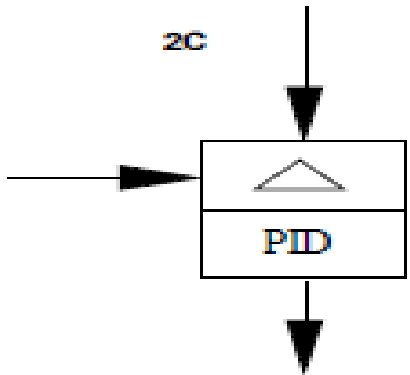
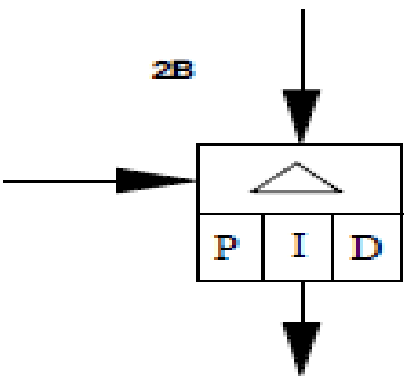
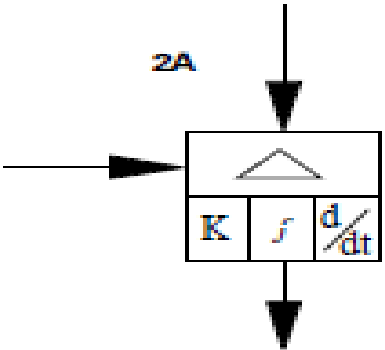
FUNCTION	ENCLOSURE SYMBOL	FUNCTION	ENCLOSURE SYMBOL
Measuring or Readout		Logical AND	
Manual Signal Processing		Logical OR	
Automatic Signal Processing		Qualified Logical OR	
Final Controlling		Logical NOT	
Final Controlling with Positioner		Maintained Memory	
Time Delay or Pulse Duration			
			
			

# SAMA SYMBOLS

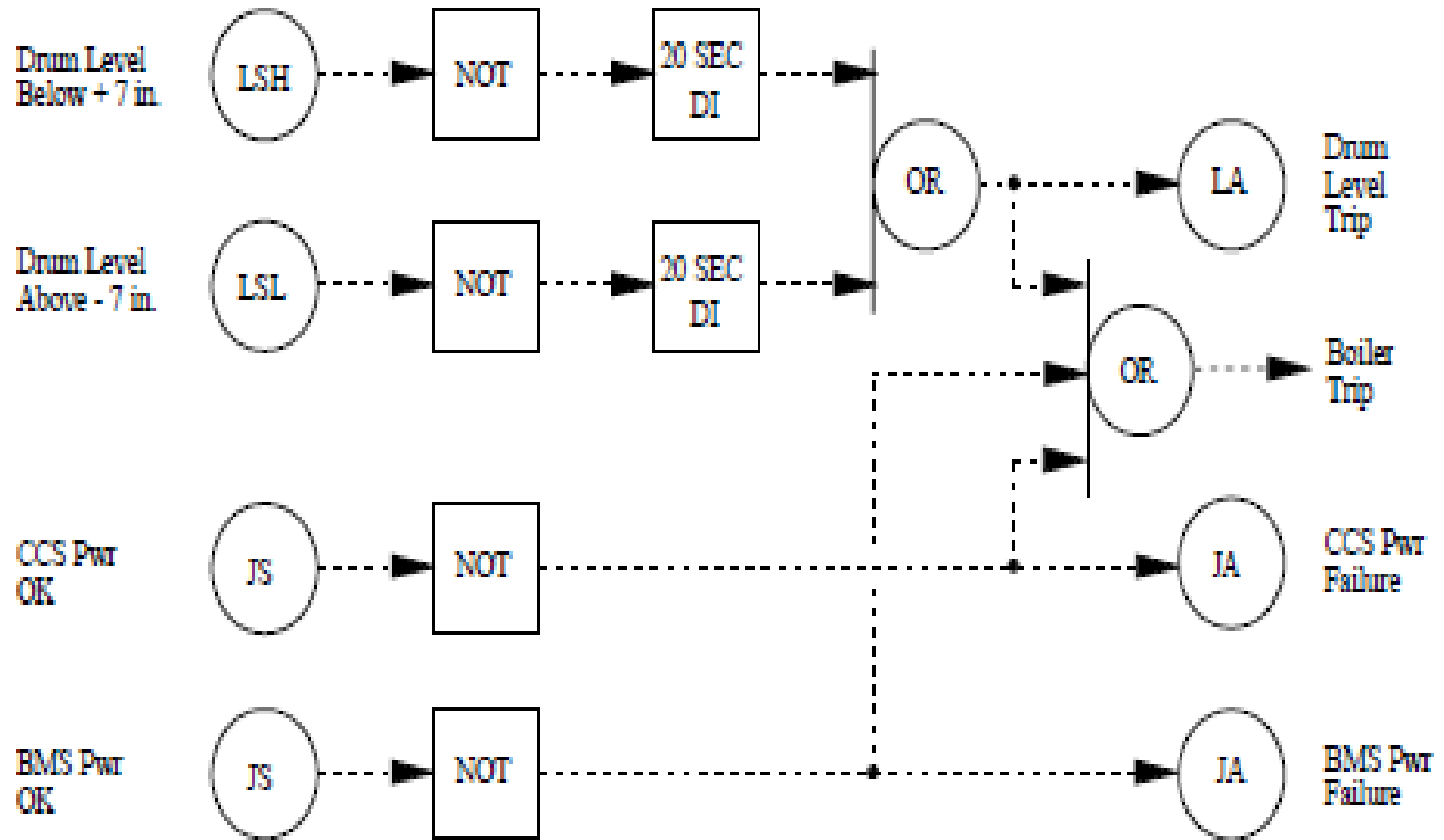
**TABLE 2 Processed Signal Continuation Symbols**

SIGNAL	SYMBOL
Continuously Variable Signal	
Incremental Change Signal or Rate of Change of a Continuously Variable Signal	
On-Off Signal *	

# SAMA SYMBOLS FOR PID



# SAMA (DIGITAL CIRCUIT)



# KKS CODE (KRAFTWERK KENNZEICHEN SYSTEM)

-Mainly used in power plants to give tag number to plants, process pipes & instruments

## TYPES OF CODES:

1. PROCESS RELATED CODE
2. POINT OF INSTALLATION CODE
3. LOCATION CODE

## BREAKDOWN LEVELS:

- 1.PLANT
- 2.FUNCTION
- 3.EQUIPMENT UNIT
- 4.COMPONENT

# KKS CODE

## EXAMPLES OF KKS CODES:

EXAMPLE 1: (MAIN STEAM PIPE TAG NUMBER)

BREAK DOWN OF= 1OLBA10BR001

PLANT CODE =UNIT1=1

FUNCTION CODE= MAIN STEAM PIPING

SYSTEM10=OLBA10

EQUIPMENT CODE=BR001

COMPONENT CODE= -

# KKS CODE

## EXAMPLES OF KKS CODES:

EXAMPLE 2: ( TAG NUMBER OF PUMP)

BREAK DOWN OF= 0LAC10AP001KP01

PLANT CODE =UNIT0=0

FUNCTION CODE= FEED WATER PUMP

SYSTEM10= OLAC10















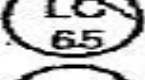
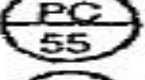





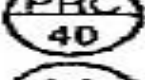

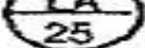
EQUIPMENT CODE=PUMP UNIT 001

COMPONENT CODE= PUMP01=KP01

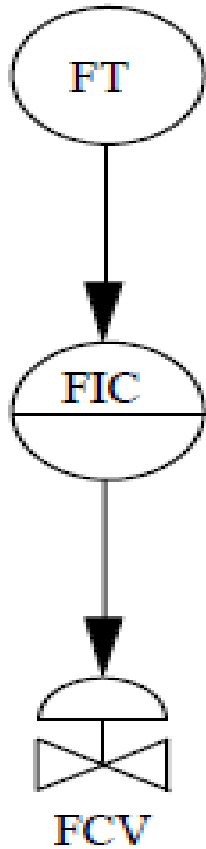


# ISA SYMBOLS

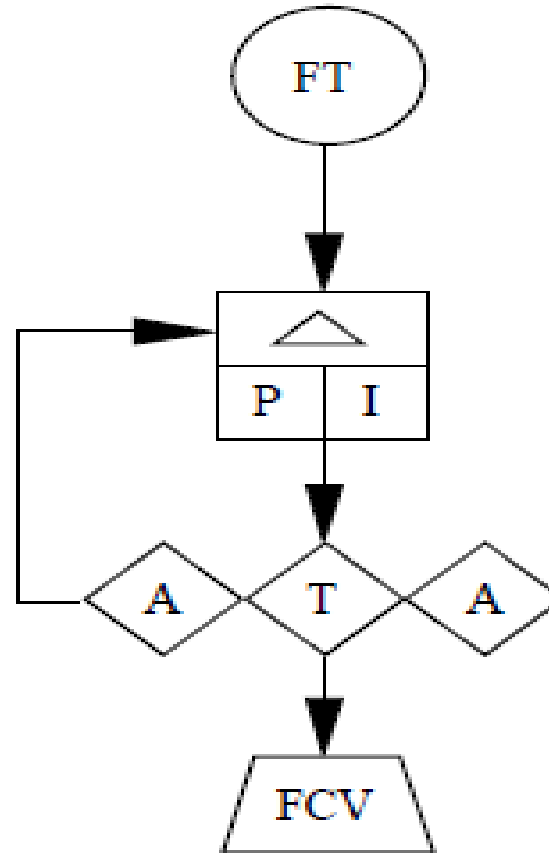
## INSTRUMENT SYMBOLS

	Temp Indicator		Flow Indicator
	Temp Transmitter		Flow Transmitter
	Temp Recorder		Flow Recorder
	Temp. Controller		Flow Controller
	Level Indicator		Pressure Indicator
	Level Transmitter		Pressure Transmitter
	Level Recorder		Pressure Recorder
	Level Controller		Pressure Controller
	Flow Element		Transducer
	Temperature Element		Pressure Indicating Controller
	Level Gauge		Pressure Recording Controller
	Analyzer Transmitter		Level Alarm

# ISA SYMBOLS (SINGLE LOOP)



ISA Diagram



SAMA Diagram