




















IDENTIFICATION LETTERS					ISA 5.1	MAN STANDARD
	FIRST LETTER		SUCCEEDING LETTER			
	MEASURED OR INITIATIVE VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER	
A	ANALYSIS		ALARM			
B	BURNER, COMBUSTION					
C	CONDUCTIVITY			CONTROL		
D	DENSITY	DIFFERENTIAL				
E	VOLTAGE		SENSOR			
F	FLOW	RATIO				
G			SIGHT GLASS			
H	HAND / MANUAL				HIGH / OPEN	
I	CURRENT		INDICATION			
J	POWER	SCAN				
K	TIME / TIMESCHEDULE	TIME RATE OF CHANGE		CONTROL STATION		
L	LEVEL		LIGHT		LOW / CLOSED	
M	HUMIDITY	MOMENTARY			MIDDLE / INTERMEDIATE	
N						
O			RESTRICTION ORIFICE			
P	PRESSURE / VACUUM		POINT CONNECTION			
Q	QUANTITY	INTEGRATE / TOTALIZE	COUNTER			
R	TORQUE		RECORDER			
S	SPEED / FREQUENCY	SAFETY		SWITCH		
T	TEMPERATURE			TRANSMITTER		
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION	
V	VIBRATION / MECH.ANALYSIS			VALVE		
W	WEIGHT / FORCE		WELL			
X		X-AXIS				
Y	EVENT / STATE	Y-AXIS		RELAY / COMPUTER		
Z	POSITION	Z-AXIS		DRIVE / ACTUATOR		

INSTRUMENT- AND LINE SYMBOLS				ISA 5.1 / MAN STANDARD	
MOUNTING LOCATION		LOCALLY MOUNTED	INSTRUMENT LINE SYMBOLS		INSTRUMENT CONNECTION TO PROCESS
		MOUNTED ON LOCAL RACK			PNEUMATIC SIGNAL
		MOUNTED ON UNIT CONTROL PANEL (SAFE AREA)			ELECTRIC SIGNAL
		MOUNTED ON LOCAL PANEL			HYDRAULIC SIGNAL
		PLC/HMI ON UNIT CONTROL PANEL			CAPILLARY TUBING
		ESD ON UNIT CONTROL PANEL			INTERNAL SYSTEM LINK
		PLC/HMI ON LOCAL PANEL			MECHANICAL LINK
		DCS ON MAIN CONTROL PANEL			HEAT TRACING
		PLC/HMI ON MAIN CONTROL PANEL			PIPE WITH SLOPE
		ESD ON MAIN CONTROL PANEL			

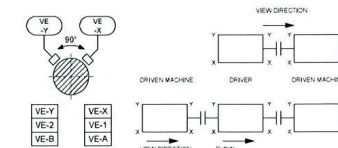
ABBREVIATIONS				ISA 5.1 / MAN STANDARD
A	OUTLET TO ATMOSPHERE (NOT CLOSED)	LI	LOCKED INTERMEDIATE	
V	VENT	DCS	DISTRIBUTED CONTROL SYSTEM	
D	DRAIN	MCC	MOTOR CONTROL CENTER	
C	CONDENSATE OUTLET	PLC	PROGRAMMABLE LOGIC CONTROL	
CO	CONTROL OIL SUPPLY	HMI	HUMAN MACHINE INTERFACE	
R	RETURN TO RESERVOIR	MMS	MACHINE MONITORING SYSTEM	
AS	INSTRUMENT AIR SUPPLY	ESD	EMERGENCY SHUTDOWN SYSTEM	
RTD	RESISTANCE THERMOMETER	VFD	VARIABLE FREQUENCY DRIVE	
TC	THERMOCOUPLE	AMB	ACTIVE MAGNETIC BEARING	
FC	FAIL CLOSE	DE / NDE	DRIVEN / NON DRIVEN END	
FO	FAIL OPEN	HS / LS	HIGH SPEED / LOW SPEED SHAFT	
FI	FAIL POSITION INDETERMINATED	PAS	PROCESS AUTOMATION SYSTEM	
FL	FAIL POSITION LOCKED	PSD	PROCESS SHUTDOWN SYSTEM	
LC	LOCKED CLOSED			
LO	LOCKED OPEN			

SYMBOLS					ISA 5.1 / MAN STANDARD
	DURING NORMAL OPERATION OPEN		MAN DIESEL & TURBO SEAL CUSTOMER		LIMIT OF SUPPLY
	DURING NORMAL OPERATION CLOSED		OIL RESERVOIR		PRESSURE VESSEL
	ROTARY BALL VALVE		BLADDER ACCUMULATOR		GAS CYLINDER
	GLOBE VALVE		OIL MIST SEPARATOR		MEMBRANE SEPARATOR
	NEEDLE VALVE		FAN		JET COMPRESSOR
	BUTTERFLY VALVE		LIQUID PUMP		SEAL GAS HEATER
	CHECK VALVE		GAS FILTER		SOLID COUPLING
	CHECK VALVE WITH BORE		LIQUID FILTER		FLEXIBLE COUPLING
	GATE VALVE		HEAT EXCHANGER		JOURNAL BEARING
	3-WAY VALVE		HEAT EXCHANGER, PLATE TYPE		THRUST BEARING
	ANGLE VALVE		AIR COOLED HEAT EXCHANGER		JOURNAL BEARING MAGNETIC
	2-WAY CONTROL VALVE		ELECTRICAL HEATER		THRUST BEARING MAGNETIC
	2-WAY CONTROL FLAP		SEAL GAS HEATER		TANDEM SEAL
	SAFETY ANGLE VALVE		SOLID COUPLING		BACK TO BACK SEAL
	BURST PLATE, BURST MEMBRANE		FLEXIBLE COUPLING		PIPE ELBOW WITH GUIDE VANES
	DETONATION PROTECTION		JOURNAL BEARING		SILENCER WITH ONE CONNECTION
	EXPLOSION SAFE FLAME ARRESTER		THRUST BEARING		DIFFUSOR
	FILTER-PRESSURE REDUCER		JOURNAL BEARING MAGNETIC		GUIDE VANE ADJUST
	FLOW ORIFICE		THRUST BEARING MAGNETIC		FAST DISCONNECTOR ON MACHINERY
	SIGHT GLASS		TANDEM SEAL		EARTHING
	VENTURI		BACK TO BACK SEAL		
	STEAM TRAP		PIPE ELBOW WITH GUIDE VANES		
	STRAINER		SILENCER WITH ONE CONNECTION		
	GAS STRAINER, CONICAL DESIGN		DIFFUSOR		
	START-UP STRAINER, CONICAL DESIGN		GUIDE VANE ADJUST		
	SILENCER		FAST DISCONNECTOR ON MACHINERY		
	SPECTACLE BLIND		EARTHING		
	REDUCER				
	FLANGE PAIR				
	BELLOWS COMPENSATOR				
	ATMOSPHERIC RELIEF				
	VENT				
	OPEN DRAIN FUNNEL				
	CAP				
	HOSE				
	SYPHON TRAP				
	MOTOR				
	MANUALLY OPERATED / HAND WHEEL				
	DIAPHRAGM				
	PISTON				
	SOLENOID				
	SPRING				
	DOUBLE DIAPHRAGM				
	FILLER WITH FILTER				
	FILLER / BREATHER WITH FILTER				
	FILLER / BREATHER				
	INJECTION NOZZLE				
	V-FILTER				
	PULSE FILTER				
	WATER SEPARATOR				
	PIPE BREAK				

LOGIC IDENTIFICATION FIGURES		MAN STANDARD
003	SHUTDOWN WITH BLOWDOWN	
004	SHUTDOWN WITHOUT BLOWDOWN	
010	INTERLOCK	
040	EMERGENCY OIL PUMP	
050	AUXILIARY SHUTDOWN	
101	OIL TANK HEATER	
102	OIL MIST FAN	
103	LUBE OIL PUMP	
107	OIL COOLER FANS	
510	SEAL GAS HEATER	
522	PRESSURE BOOSTER	
631	SPACE HEATER	

## NOTES

1) ALL VIBRATION PROBES ARE MOUNTED AS FOLLOWS



2) ALL PRESSURE AND DIFFERENTIAL PRESSURE INSTRUMENTS WILL HAVE MANIFOLDS AS FOLLOWS



## SAFE LOCATION

A PLACE WHERE THE DISCHARGED MEDIUM IS HANDLED COMPETENTLY AND EXPERTLY UNDER ATMOSPHERIC PRESSURE AND WHERE SUCH MEDIUM DOES NOT CONSTITUTE A DANGER TO PEOPLE, THE ENVIRONMENT OR MACHINE/PLANT COMPONENTS.