

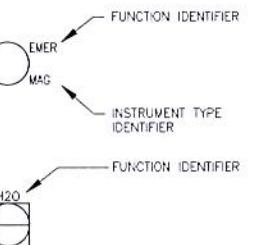
TABLE1 - IDENTIFICATION LETTERS

FIRST - LETTER (1)		SUCCEEDING - LETTERS (15)			
	MEASURED OR INITIATING VARIABLE	VARIABLE MODIFIER (10)	READOUT / PASSIVE FUNCTION	OUTPUT / ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS (2) (3) (4)		ALARM		
B	BURNER COMBUSTION (2)		USER'S CHOICE (S)	USER CHOICE (5)	USER'S CHOICE (5)
C	USER'S CHOICE (3A) (5)			CONTROL (23A) (23E)	CLOSE (27B)
D	USER'S CHOICE (3A) (5)	DIFFERENCE, DIFFERENTIAL (11A) (12A)			DEVIATION (28)
E	VOLTAGE (2)		SENSOR (PRIMARY ELEMENT)		
F	FLOW, FLOW RATE (2)	RATIO (12B)			
G	USER'S CHOICE		GLASS, GAUGE VIEWING DEVICE (16)		
H	HAND (2)				HIGH (27A) (28) (29)
I	CURRENT (2)		INDICATE (17)		
J	POWER (2)		SCAN (18)		
K	TIME, SCHEDULE (2)	TIME RATE OF CHANGE (12C) (13)		CONTROL STATION (24)	
L	LEVEL (2)		LIGHT (19)		LOW (27B) (28) (29)
M	USER'S CHOICE (3A) (5)	MOMENTARY			MIDDLE, INTERMEDIATE (27C) (28) (29)
N	USER CHOICE (5)		USER'S CHOICE (S)	USER'S CHOICE (5)	USER'S CHOICE (5)
O	USER CHOICE (5)		ORIFICE, RESTRICTION		OPEN (27A)
P	PRESSURE (2)		POINT (TEST) CONNECTION		
Q	QUANTITY (2)	INTEGRATE, TOTALIZE (11B)			
R	RADIATION(2)		RECORD (20)		RUN
S	SPEED, FREQUENCY (2)	SAFETY (14)		SWITCH (23B)	STOP
T	TEMPERATURE (2)			TRANSMIT	
U	MULTIVARIABLE (2) (6)		MULTIFUNCTION (21)	MULTIFUNCTION (21)	
V	VIBRATION, MECHANICAL ANALYSIS (2) (4) (7)			VALVE, DAMPER, LOUVER (23C) (23E)	
W	WEIGHT, FORCE (2)		WELL, PROBE		
X	UNCLASSIFIED (8)	X AXIS (11C)	ACCESSORY DEVICES (22), UNCLASSIFIED (8)	UNCLASSIFIED (8)	UNCLASSIFIED (8)
Y	EVENT, STATE, PRESENCE (2) (9)	Y AXIS (11C)		AUXILIARY DEVICES (23D) (25) (26)	
Z	POSITION, DIMENSION (2)	Z AXIS (11C), SIS (30)		DRIVE, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

NOTE : NUMBERS IN PARENTHESSES REFER TO SPECIFIC EXPLANATORY NOTES IN ISA 5.1 TABLE-4.1

## FUNCTION IDENTIFICATION

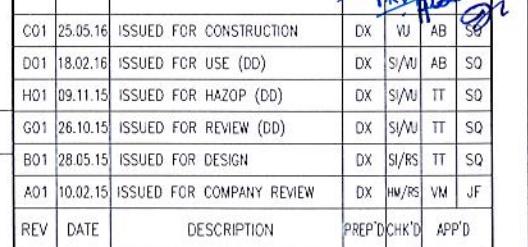
- |   |  |
|---|--|
| <input type="checkbox"/> Σ SUM                      | <input checked="" type="checkbox"/> X MULTIPLY |
| <input type="checkbox"/> ÷ DIVIDE                   | <input type="checkbox"/> △ DIFFERENCE          |
| <input type="checkbox"/> ∫ DERIVATIVE               | <input type="checkbox"/> > HIGH SELECTOR       |
| <input checked="" type="checkbox"/> √ EXTRACT SD RT | <input type="checkbox"/> < LOW SELECTOR        |
| <input type="checkbox"/> ⌈ HIGH LIMITER             | <input type="checkbox"/> ⌋ LOW LIMITER         |
| <input type="checkbox"/> ⌊ LOW LIMITER              | <input type="checkbox"/> ⌈ AVERAGE             |



FUNCTION IDENTIFIER			NOTES:	
1oo2	1 OUT OF 2	S/D	SHUTDOWN	
2oo2	2 OUT OF 2	SL	SAFETY INTEGRITY LEVEL	
2oo3	2 OUT OF 3	SKIN	SKIN	
A	ACTIVE	SOx	OXIDES OF SULFUR	
AMB	AMBIENT	SP GR	SPECIFIC GRAVITY	
AMP	AMPERE	START	START	
ANN	ANNUNCIATOR	STOP	STOP	
AUTO	AUTOMATIC	SYNC	SYNCHRONIZATION	
BS & W	BASIC SEDIMENT AND WATER	TC	THERMOCOUPLE/THERMAL CONDUCTIVITY	
BT	BUS TIE	TD	TIME DELAY	
C	CLOSE	TDR	TIME DELAY RELAY	
CALOR	CALORIMETER	TEST	TEST	
CLOSED	CLOSED	THC	TOTAL HYDROCARBON	
CMD	COMMAND	TOC	TOTAL ORGANIC CARBON	
CO	CARBON MONOXIDE	TRIP	TRIP	
CO2	CARBON DIOXIDE	TRIPPED	TRIPPED	
COND	CONDUTIVITY			
CTL	CONTROL			
DENS	DENSITY	UHC	UNBURNT HYDROCARBONS	
DEV	DEVIATION	UV	ULTRA-VIOLET	
DISC	DISCONNECT	VAC	VACUUM	
DISCH	DISCHARGE	VIBR	VIBRATION	
EMER	EMERGENCY			
F	FARAD/FARENHEIT			
FAILED	FAILED			
GC	GAS CHROMATOGRAPH			
H2	HYDROGEN			
H2O	MOISTURE			
H2S	HYDROGEN SULFIDE			
HC	HYDROCARBON			
IR	INFRARED			
L/R	LOCAL/REMOTE			
L/S/R	LOCAL/STOP/REMOTE			
MeOH	METHYL ALCOHOL			
Mo3	MIDDLE OF 3			
MOS	MAINTENANCE OVERRIDE SWITCH			
N2	NITROGEN			
NH3	AMMONIA			
NOx	OXIDES OF NITROGEN			
O	OPEN			
O/C	OPEN/CLOSE			
O/L	OVERLOAD			
O/R	OVERRIDE			
O2	OXYGEN			
OS	OVERRIDE SWITCH			
PB	PUSHBUTTON			
PC	PHOTO CELL			
PERM	PERMISSIONS			
pH	ACIDITY OR ALKALINITY			
PHASE	PHASE			
PM	PARTICULATE MATTER			
RAMAN	LASER BASED SPECTROMETER			
RES	RESISTOR			
RESET	RESET			
REV	REVERSED			
RUN	RUN			
RVP	RED VAPOR PRESSURE			

## INSTRUMENT TYPE IDENTIFICATION

CAP	CAPACITANCE
D/P	POSITIVE DISPLACER
DP	DIFFERENTIAL PRESSURE
DISP	DISPLACER
LASER	LASER
MAG	MAGNETIC
NUC	NUCLEAR
RAD	RADAR
GWR	GUIDED WAVE RADAR
RTD	RESISTANCE TEMPERATURE DETECTOR
CMS	CONDITION MONITORING SYSTEM
MMS	MACHINE MONITORING SYSTEM
RTU	REMOTE TERMINAL UNIT



DRAWING TITLE:  
PIPING AND INSTRUMENTATION DIAGRAM  
LEGEND SHEET  
INSTRUMENT IDENTIFICATION

PROJECT NO.	100478CP	SCALE	NONE	DWG SIZE	A1
DRAWING NUMBER		SHF NO.	REV.		
100478CP-N-PG-PP01-PR-PID-0001-004	04/17	C01			

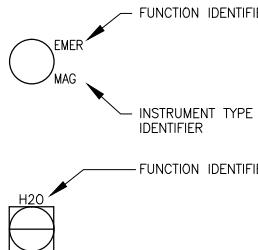
TABLE 1 – IDENTIFICATION LETTERS

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D	USER'S CHOICE (3A) (5)	DIFFERENCE, DIFFERENTIAL (11A) (12A)			DEVIATION (28)
E	VOLTAGE (2)		SENSOR (PRIMARY ELEMENT)		
F	FLOW, FLOW RATE (2)	RATIO (12B)			
G	USER'S CHOICE		GLASS, GAUGE VIEWING DEVICE (16)		
H	HAND (2)				HIGH (27A) (28) (29)
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O	USER CHOICE (5)		ORIFICE, RESTRICTION		OPEN (27A)
P	PRESSURE (2)		POINT (TEST) CONNECTION		
Q	QUANTITY (2)	INTEGRATE, TOTALIZE (11B)			
R	RADIATION(2)		RECORD (20)		RUN
S	SPEED, FREQUENCY (2)	SAFETY (14)		SWITCH (23B)	STOP
T	TEMPERATURE (2)			TRANSMIT	
U	MULTIVARIABLE (2) (6)		MULTIFUNCTION (21)	MULTIFUNCTION (21)	
V	VIBRATION, MECHANICAL ANALYSIS (2) (4) (7)			VALVE, DAMPER, LOUVER (23C) (23E)	
W	WEIGHT, FORCE (2)		WELL, PROBE		
X	UNCLASSIFIED (8)	X AXIS (11C)	ACCESSORY DEVICES (22), UNCLASSIFIED (8)	UNCLASSIFIED (8)	UNCLASSIFIED (8)
Y	EVENT, STATE, PRESENCE (2) (9)	Y AXIS (11C)		AUXILIARY DEVICES (23D) (25) (26)	
Z	POSITION, DIMENSION (2)	Z AXIS (11C), SIS (30)		DRIVE, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

NOTE : NUMBERS IN PARENTHESSES REFER TO SPECIFIC EXPLANATORY NOTES IN ISA 5.1 TABLE-4.1

## FUNCTION IDENTIFICATION

$\Sigma$	SUM	$\times$	MULTIPLY
$\div$	DIVIDE	$\Delta$	DIFFERENCE
$d/dt$	DERIVATIVE	$>$	HIGH SELECTOR
$\checkmark$	EXTRACT SQ RT	$<$	LOW SELECTOR
$\rightarrow$	HIGH LIMITER	$/P$	INPUT / OUTPUT OF THE FOLLOWING
$\leftarrow$	LOW LIMITER	$\Sigma_n$	AVERAGE



FUNCTION IDENTIFIER		NOTES:		
1oo2	1 OUT OF 2	S/D	SHUTDOWN	1. FOR FURTHER DETAILS REFER TO ENGINEERING NUMBERING SPECIFICATION 0000RP-C-G0-C000-DM-SPC-0001-REV-B02.
2oo2	2 OUT OF 2	SIL	SAFETY INTEGRITY LEVEL	
2oo3	2 OUT OF 3	SKIN	SKIN	
A	ACTIVE	SOx	OXIDES OF SULFUR	
AMB	AMBIENT	SP	SET POINT	
AMP	AMPERE	SP GR	SPECIFIC GRAVITY	
ANN	ANNUNCIATOR	START	START	
AUTO	AUTOMATIC	STOP	STOP	
BS & W	BASIC SEDIMENT AND WATER	SYNC	SYNCHRONIZATION	
BT	BUS TIE	TC	THERMOCOUPLE/ THERMAL CONDUCTIVITY	
C	CLOSE	TD	TIME DELAY	
CALOR	CALORIMETER	TDR	TIME DELAY RELAY	
CLOSED	CLOSED	TEST	TEST	
CMD	COMMAND	THC	TOTAL HYDROCARBON	
CO	CARBON MONOXIDE	TOC	TOTAL ORGANIC CARBON	
CO2	CARBON DIOXIDE	TRIP	TRIP	
COND	CONDUCTIVITY	TRIPPED	TRIPPED	
CTL	CONTROL			
DENS	DENSITY	UHC	UNBURNED HYDROCARBONS	
DEV	DEVIATION	UV	ULTRA-VIOLET	
DISC	DISCONNECT	VAC	VACUUM	
DISCH	DISCHARGE	VIBR	VIBRATION	
EMER	EMERGENCY			
F	FARAD/FARENHEIT			
FAILED	FAILED			
GC	GAS CHROMATOGRAPH			
H2	HYDROGEN			
H2O	MOISTURE			
H2S	HYDROGEN SULFIDE			
HC	HYDROCARBON			
IR	INFRARED			
L/R	LOCAL/REMOTE			
L/S/R	LOCAL/STOP/REMOTE			
MeOH	METHYL ALCOHOL			
Mo3	MIDDLE OF 3			
MOS	MAINTENANCE OVERRIDE SWITCH			
N2	NITROGEN			
NH3	AMMONIA			
NOx	OXIDES OF NITROGEN			
O	OPEN			
O/C	OPEN/CLOSE			
O/L	OVERLOAD			
O/R	OVERRIDE			
O2	OXYGEN			
OS	OVERRIDE SWITCH			
PB	PUSHBUTTON			
PC	PHOTO CELL			
PERM	PERMISSIVES			
pH	ACIDITY OR ALKALINITY			
PHASE	PHASE			
PM	PARTICULATE MATTER			
RAMAN	LASER BASED SPECTROMETER			
RES	RESISTOR			
RESET	RESET			
REV	REVERSED			
RUN	RUN			
RVP	REID VAPOR PRESSURE			
C01	25.05.16	ISSUED FOR CONSTRUCTION	DX	VU AB SQ
D01	18.02.16	ISSUED FOR USE (DD)	DX	SI/VU AB SQ
H01	09.11.15	ISSUED FOR HAZOP (DD)	DX	SI/VU TT SQ
G01	26.10.15	ISSUED FOR REVIEW (DD)	DX	SI/VU TT SQ
B01	28.05.15	ISSUED FOR DESIGN	DX	SI/RS TT SQ
A01	10.02.15	ISSUED FOR COMPANY REVIEW	DX	HM/RS VM JF
REV	DATE	DESCRIPTION	PREP'D	CHK'D APP'D
 EARLY POWER PLANT RUMAILA OIL FIELD CONTRACT NO. 100478				
 CHINA PETROLEUM ENGINEERING & CONSTRUCTION CORP.				
 CH2MHILL				
DRAWING TITLE: PIPING AND INSTRUMENTATION DIAGRAM LEGEND SHEET INSTRUMENT IDENTIFICATION				
PROJECT NO.	100478CP	SCALE:	NONE	DWG SIZE: A1
DRAWING NUMBER:		SHT. NO.:	REV.	
100478CP-N-PG-PP01-PR-PID-0001-004				
04/17 C01				