

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 (5)	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 (5)	USER'S CHOICE (5)	USER'S CHOICE (5)
O	USER CHOICE (5)		ORFICE, 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 PARENTHESES REFER TO SPECIFIC EXPLANATORY NOTES IN ISA 5.1 TABLE-4.1

FUNCTION IDENTIFIER

1cc2	1 OUT OF 2	S/D	SHUTDOWN
2cc2	2 OUT OF 2	SIL	SAFETY INTEGRITY LEVEL
2cc3	2 OUT OF 3	SKIN	SKIN
		SOx	OXIDES OF SULFUR
A	ACTIVE	SP	SET POINT
AMB	AMBIENT	SP GR	SPECIFIC GRAVITY
AMP	AMPERE	START	START
ANN	ANNUNCIATOR	STOP	STOP
AUTO	AUTOMATIC	SYNC	SYNCHRONIZATION
BS & W	BASIC SEDIMENT AND WATER		
BT	BUS TIE	TC	THERMOCOUPLE/THERMAL CONDUCTIVITY
		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	CONDUCTIVITY		
CTL	CONTROL		
DENS	DENSITY	UHC	UNBURNED HYDROCARBONS
DEV	DEVIATION	UV	ULTRA-VIOLET
DISC	DISCONNECT	VAC	VACUUM
DISCH	DISCHARGE	VIB	VIBRATION
EMER	EMERGENCY		
F	FARAD/FAHRENHEIT		
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		

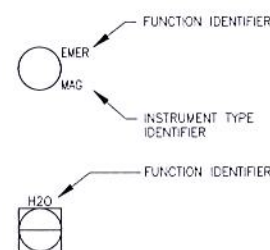
## NOTES:

1. FOR FURTHER DETAILS REFER TO ENGINEERING NUMBERING SPECIFICATION 0000RP-C-00-000-DM-SPC-0001-REV-002

FUNCTION IDENTIFICATION

Σ SUM  
÷ DIVIDE  
d/dt DERIVATIVE  
√ EXTRACT SQ RT  
H HIGH LIMITER  
L LOW LIMITER

X MULTIPLY  
Δ DIFFERENCE  
> HIGH SELECTOR  
< LOW SELECTOR  
VP INPUT / OUTPUT OF THE FOLLOWING  
AVERAGE



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

CO1	25.05.16	ISSUED FOR CONSTRUCTION	DX	VU	AB	SQ
DO1	18.02.16	ISSUED FOR USE (DD)	DX	S/W	AB	SQ
HO1	09.11.15	ISSUED FOR HAZOP (DD)	DX	S/W	TT	SQ
GO1	26.10.15	ISSUED FOR REVIEW (DD)	DX	S/W	TT	SQ
BO1	28.05.15	ISSUED FOR DESIGN	DX	S/RS	TT	SQ
AO1	10.02.15	ISSUED FOR COMPANY REVIEW	DX	HW/RS	VM	JF
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D	


**EARLY POWER PLANT**  
**RUMAILA OIL FIELD**  
**CONTRACT NO. 100478**


**中国石化工程建设公司**  
**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:	100478CP-N-PG-PP01-PR-PID-0001-004	SHT. NO.:	04/17	REV.	CO1

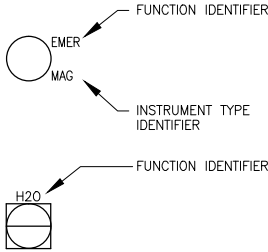
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NOTE : NUMBERS IN PARENTHESES REFER TO SPECIFIC EXPLANATORY NOTES IN ISA 5.1 TABLE–4.1

FUNCTION IDENTIFICATION

$\Sigma$	SUM	$\times$	MULTIPLY
$\div$	DIVIDE	$\Delta$	DIFFERENCE
$\frac{d}{dt}$	DERIVATIVE	$>$	HIGH SELECTOR
$\sqrt{\phantom{x}}$	EXTRACT SQ RT	$<$	LOW SELECTOR
$\rhd$	HIGH LIMITER	$\nabla P$	INPUT / OUTPUT OF THE FOLLOWING
$\triangleleft$	LOW LIMITER	$\Sigma_n$	AVERAGE



FUNCTION IDENTIFIER

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DISCH	DISCHARGE	VIBR	VIBRATION
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HC	HYDROCARBON		
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L/R	LOCAL/REMOTE		
L/S/R	LOCAL/STOP/REMOTE		
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RVP	REID VAPOR PRESSURE		


NOTES:

1. FOR FURTHER DETAILS REFER TO ENGINEERING NUMBERING SPECIFICATION 0000RP–C–GO–G000–DM–SPC–0001–REV–B02.


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


C01	25.05.16	ISSUED FOR CONSTRUCTION	DX	WJ	AB	SQ
D01	18.02.16	ISSUED FOR USE (DD)	DX	SI/WJ	AB	SQ
H01	09.11.15	ISSUED FOR HAZOP (DD)	DX	SI/WJ	TT	SQ
G01	26.10.15	ISSUED FOR REVIEW (DD)	DX	SI/WJ	TT	SQ
B01	28.05.15	ISSUED FOR DESIGN	DX	HM/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	



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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