INSTRUMENT NUMBERING

EACH INSTRUMENT HAS BEEN NAMED AS SHOWN BELOW IN THE DOCUMENTATION:
TAG-RU0001X-AA
WHERE,

X : ONE DIGITS, WHICH IDENTIFY THE REFRIGERANT PACKAGE TRAIN (A OR B)
TAG : INSTRUMENT TAG (ATTACHMENT; P&ID SYMBOLS)
AA : TWO DIGITS, WHICH IS THE PROGRESSIVE ITEM NUMBER IN THE UNIT FROM 01 TO 99.

MOTOR INSTRUMENT NUMBERING

IF AN INSTRUMENT OR A FUNCTION IS INSTALLED ON A ELECTRIC DRIVER OF A MACHINERY WHICH NAME IS TAG-RU0001X-AA, THE INSTRUMENT NAME IS: TAG-RU0001X-AA

PIPE LINE NUMBERING
DN-MP-RU0001YXX-ML3R1-C

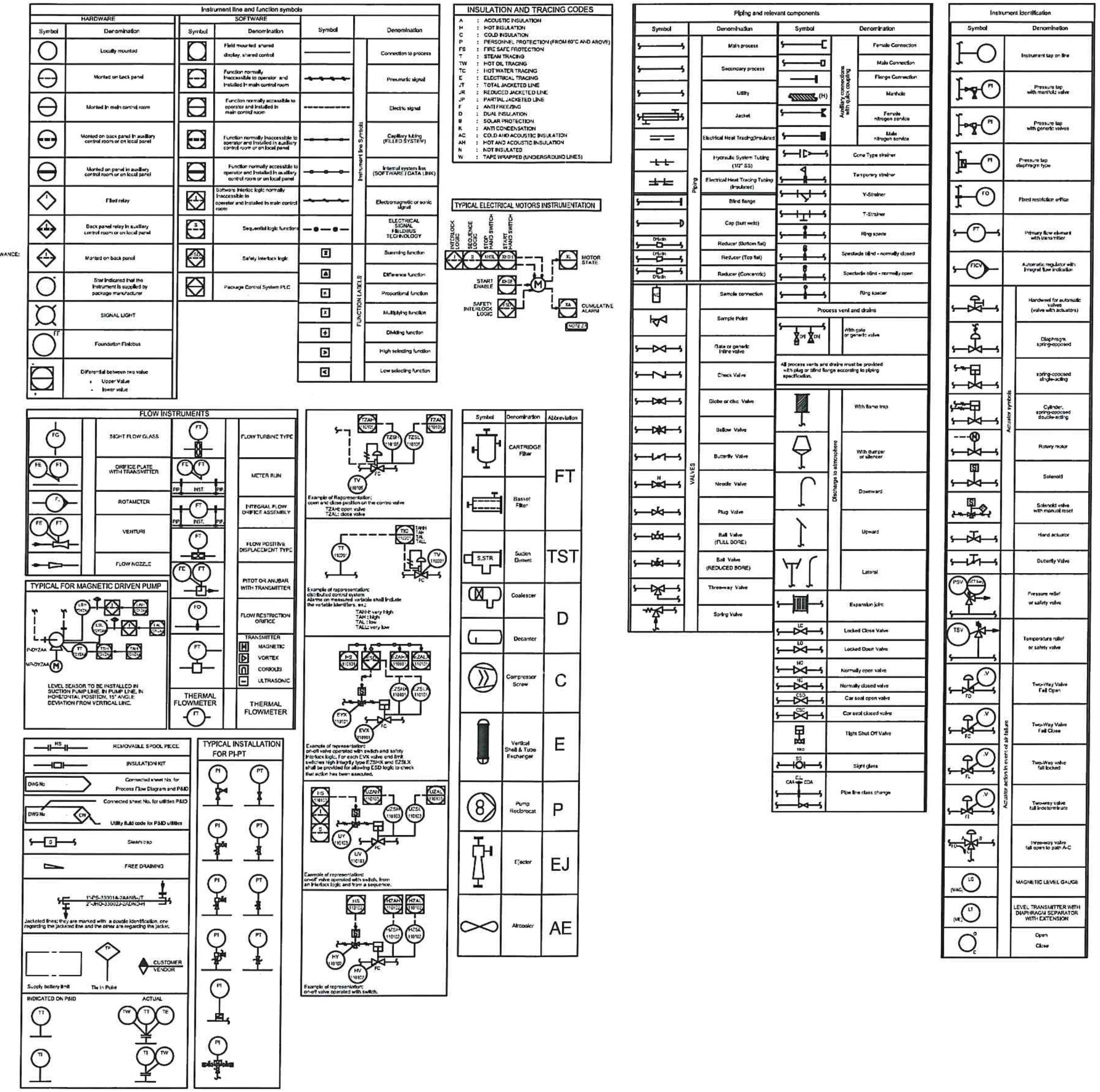
WHERE,
DN : NOMINAL DIAMETER IN INCH
MP : FLUID CODE
RU0001 : PACKAGE NAME
Y : PACKAGE TRAIN (A OR B)
XX : LETTER WHICH INDENTIFIES THE LINE NUMBER

ML3R1: M L 3 R 1

- M — MAYEKAWA/ MYCOM KOREA
- L — MATERIAL
- 3 — RATING
- R — FLANGE TYPE
- 1 — CORROSION ALLOWANCE

Rating:	MATERIAL:	FLANGE TYPE:	CORROSION ALLOWANCE:
1=150 CLASS	C: CARBON STEEL	R = RAISED FACE	0 = 0 mm
3=300 CLASS	L: LOW TEMPERATURE CARBON STEEL	F = FLAT FACE	1 = 1.5 mm
6=600 CLASS	S: STAINLESS STEEL	R = RING TYPE JOINT	2 = 3.0 mm
9=900 CLASS	E: INSTRUMENT AIR STAINLESS STEEL	J = LARGE MALE/ FEMALE	
15=1500 CLASS		S = SMALL L TONGUE/GROOVE	

FLUID CODE:	DESCRIPTION
AV	Atmospheric Vent
CWS	Cooling Water Supply
CWR	Cooling Water Return
FWG	Flare/Vent gas
IA	Instrument Air
OI	Hydraulic Oil
ST	Styrene
PR	Propane



REFERENCE DRAWING	DWG NO.	REV.

NOTES :

1- AN ADDITIONAL "X" AFTER THE INSTRUMENT CODE MEANS THAT INSTRUMENT BELONGS TO ESD SYSTEM.
2- FOR TEMPERATURE MEASURING INSTRUMENTS WHOSE SIGNAL HAS TO BE ROUTED TO A REMOTE SYSTEM (DCS, PLC), THE TRANSMITTER HAS BEEN ALWAYS INDICATED EVEN IF IT IS STRICTLY REQUIRED ONLY FOR CONTROL LOOPS, PROCESS INTERLOCKS AND SAFETY INTERLOCKS. IN CASE OF TEMPERATURE INDICATOR.
3- IN ALL THE P&ID, PACKAGES ARE REPPRESENTED IN A SIMPLIFIED WAY. IN GENERAL, WHAT IS REPPRESENTED IS LICENSOR MINIMUM REQUIREMENT. THE CHARACTERISTICS OF EACH PACKAGE ARE DESCRIBED IN THE RELEVANT DATA SHEET. IN ANY CASE, PACKAGES VENDORS SHALL SUPPLY FINAL P&ID.
4- FOR PIPES CARRYNG THE FOLLOWING FLUIDS :
- EB (ETHYLBENZENE)
- AN (ACRYLONITRILE)
- CO (ORGANIC LIQUID CONDENSATE)
- ST (STYRENE)
- BD (BUTADIENE)
THE NUMBER OF FLANGES SHALL BE MINIMIZED.
5- INSTALL DRAINS ON THE PIPING CIRCUITS (OR SINGLE LINES) LOWEST POINTS AND VENTS IN THE PIPING CIRCUITS (OR SINGLE LINES) HIGHEST POINTS.
6- MINIMIZE FLANGED COUPLINGS ON HOT/THERMAL OIL (HO) MAIN DISTRIBUTION HEADER LINES. FOR THERMAL OIL (HO, CO) LINES INSTALLED ON PIPE RACKS, FLANGED COUPLINGS SHALL BE EQUIPPED WITH SAFE-RING OR EQUIVALENT FLANGES JOINTS SPRAY PROTECTION.
7- WHEN AN INTERLOCK OR A SEQUENCE REQUIRES TO PERFORM AN ACTION, THE INTERLOCK OR SEQUENCE ITSELF SHALL VERIFY IF THE ACTION HAS BEEN DONE. THIS HAS TO BE CONSIDERED AS STANDARD INSTALLATION AND IS NOT REPRESENTED ON P&ID.
8- IN GENERAL ON P&IDs SEQUENCES CHECK PHASE IS NOT REPRESENTED EXCEPT FOR:
- ABS PLANT: RUBBER DISSOLUTION SECTION
- RUBBER PLANT: REACTION SECTION
9- THE SIZE OF CONTROL VALVES BY-PASS VALVES WILL BE DEFINED / CONFIRMED ACCORDING TO THE FINAL SIZE OF CONTROL VALVES.
10- IN CASE DRIP RING IS INDICATED ON P&ID, IT SHALL BE SUPPLIED BY PIPING VENDOR. FOR DRIP RING TYPICAL SEE DOC. J-80/85/88-IN-STD-1500-0001 "DRIP RING FOR DIAPHRAGM INSTRUMENT TYPICAL".
11- THE INSTALLATION OF ALL PI-PT-TI-TT REPRESENTED ON P&ID IS INDICATED IN THE TYPICAL.
12- ALL SIGNALS FROM PLC TO ESD SHALL BE HARD-WIRED (NON-DATALINK)
13- ALL SIGNALS FROM UNIT 88 INSTRUMENTS SHALL BE CONNECTED TO DCS /FCS /ESD OF RUBBER PLANT.
14- ALL VALVES ON PSV INLET /OUTLET LINES SHALL BE FULL BORE TYPE. GATE VALVE ON FLARE LINE TO BE INSTALLED WITH STEM IN HORIZONTAL POSITION.
15- FOR SPECIAL PIPING ITEMS LIST REFER TO DOC.J-88-PI-LSC-8501.
16- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
17- ELEVATION SHOWN ARE ABOVE THE HIGHEST POINT OF PAVING.
18- ALL VALVES ARE LINE SIZE UNLESS OTHERWISE SHOWN.
19- THIS FLOW DIAGRAM IS DIAGRAMMATIC ONLY. DESIGN OF PIPE LINE MUST BE INVESTIGATED FOR VENTING OF GAS AND VAPOR POCKETS IN PIPING AND EQUIPMENT, LOW POINTS IN PIPING, PUMPS AND EQUIPMENT FOR DRAINING AND ACCESSIBILITY OF ALL VALVES, FLANGES AND INSTRUMENTS INCLUDING THERMOCOUPLES ETC.
20- ALL ELECTRONIC INSTRUMENTATION SHALL BE INSTALLED AWAY FROM STEAM LINES AND HIGH TEMPERATURE HEAT SOURCE.
21- SAMPLE TAPING FOR GAS SAMPLES SHALL BE FROM THE TOP OF THE MAIN LINE. FOR LIQUID SAMPLES TAPPING SHALL BE DONE FROM THE SIDE.
22- EXCEPT FOR PROCESS REASONS, LOW POINT DRAINS AND HIGH POINT VENT ARE NOT SHOWN.
23- CABLING BETWEEN DCS REMOTE I/O CARDS IN MCC CUBICLE CABINET AND MAIN CONTROL ROOM WILL BE VIA SOFT LINK EXCEPT FOR ESD SIGNALS TO MCC THAT WOULD BE HARD WIRED.
24- EDSL MEANS EARTHING SWITCH LOW.
25- SIGNALS OF CURRENT TRANSMITTERS ARE TAKEN FROM MCC.
26- WHILE PURGING THE EQUIPMENTS, VENTS SHALL BE PROPERLY KEPT OPEN IN ORDER TO AVOID EQUIPMENT PRESSURIZATION ABOVE EQUIPMENT DESIGN/PSV SET PRESSURE BY MAINTAINING PROPER ADMINISTRATIVE CONTROL, PRESSURE SAFETY VALVES AND RUPTURE DISCS ARE NOT DESIGNED FOR THE MAXIMUM PURGING CONDITION MENTIONED IN THE LICENSOR PDP DATA.

HOLDE:

EQUIPMENT LIST:

KEY PLAN :

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00		ISSUED FOR APPROVAL (IFA)	A.K.	F.SH.	A.M

CLIENT

CONSULTING ENGINEER

PROJECT:

DRAWING TITLE:

PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU
SYMBOL, ABBREVIATION AND GENERAL NOTES

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	1 of 7

PROPANE GAS
FROM K.O.D RU0001A-D-03
EI027-HSE-VD-PR-PID-002(6/7)

6"-PR-RU0001A01-ML3R1-C

RBL-RU0001A01

OIL
FROM OIL SEPARATOR RU0001A-D-01
EI027-HSE-VD-PR-PID-002(3/7)

5/16" SS

HAND OFF AUTO
UNLOAD
LOAD

CAPACITY CONTROL
SLIDE VALVE
100%
0%

COMPRESSOR
RU0001A-C-01

MAIN MOTOR
RU0001A-M-01

MCC

START
STOP

AMPERAGE
MOTOR FAULT
MOTOR RUNNING

NOTE 2

RU0001A-TST-01
SUCTION CONE
ELEMENT

S.STR

GAT-RU0001A02
GAT-RU0001A03
GAT-RU0001A01

1/2"

TUBING

OIL RECOVERY CONNECTION TO BE SHOWN.

ENER Reply: Noted

ENER Reply: Based on ME component list, Valve size is 3/8". we will use an adaptor and connector to connect 3/8" to 1/2" tubing.

This tube size will be 1/2"

MOVE

NC LOAD RETURN
NC UNLOAD SUPPLY
NC LOAD SUPPLY
NC UNLOAD RETURN

NOTE 1

FCV

5/8"-OI-RU0001A04-MS3R0-E

5/8"-OI-RU0001A05-MS3R0-E

LUBRICATION INLET

OIL INJECTION

CHV-RU0001A02

NV-RU0001A03

4"-PR-RU0001A02-MC3R1-P

PACKAGE
PLC

EMERGENCY STOP

PROPANE GAS
TO OIL SEPARATOR RU0001A-D-01
EI027-HSE-VD-PR-PID-002(3/7)

OIL
FROM OIL FILTER RU0001A-F-01A/S
EI027-HSE-VD-PR-PID-002(4/7)

FROM RU0001A-PI-03
EI027-HSE-VD-PR-PID-002(3/7)

OIL
FROM OIL PUMP RU0001A-P-01
EI027-HSE-VD-PR-PID-002(4/7)

TAG NO.	RU0001A-C-01
SERVICE	COMPRESSOR
TYPE	OIL FLOODED SCREW
MANUFACTURER	MAYEKAWA
DESIGN DP (BARG)	23
DESIGN DUTY (kW)	165

REFERENCE DRAWING	DWG NO.	REV.

NOTES :

1- OPENING DEGREE TO BE SET DURING COMMISIONING AND LOGGED.
2- SIGNALS ROUT TO DCS.
3- SET TEMPERATURE FOR ELECTRICAL TRACING IS 30°C.

HOLDE:

EQUIPMENT LIST:

KEY PLAN :

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00		ISSUED FOR APPROVAL (IFA)	A.K.	F.SH.	A.M.

CLIENT

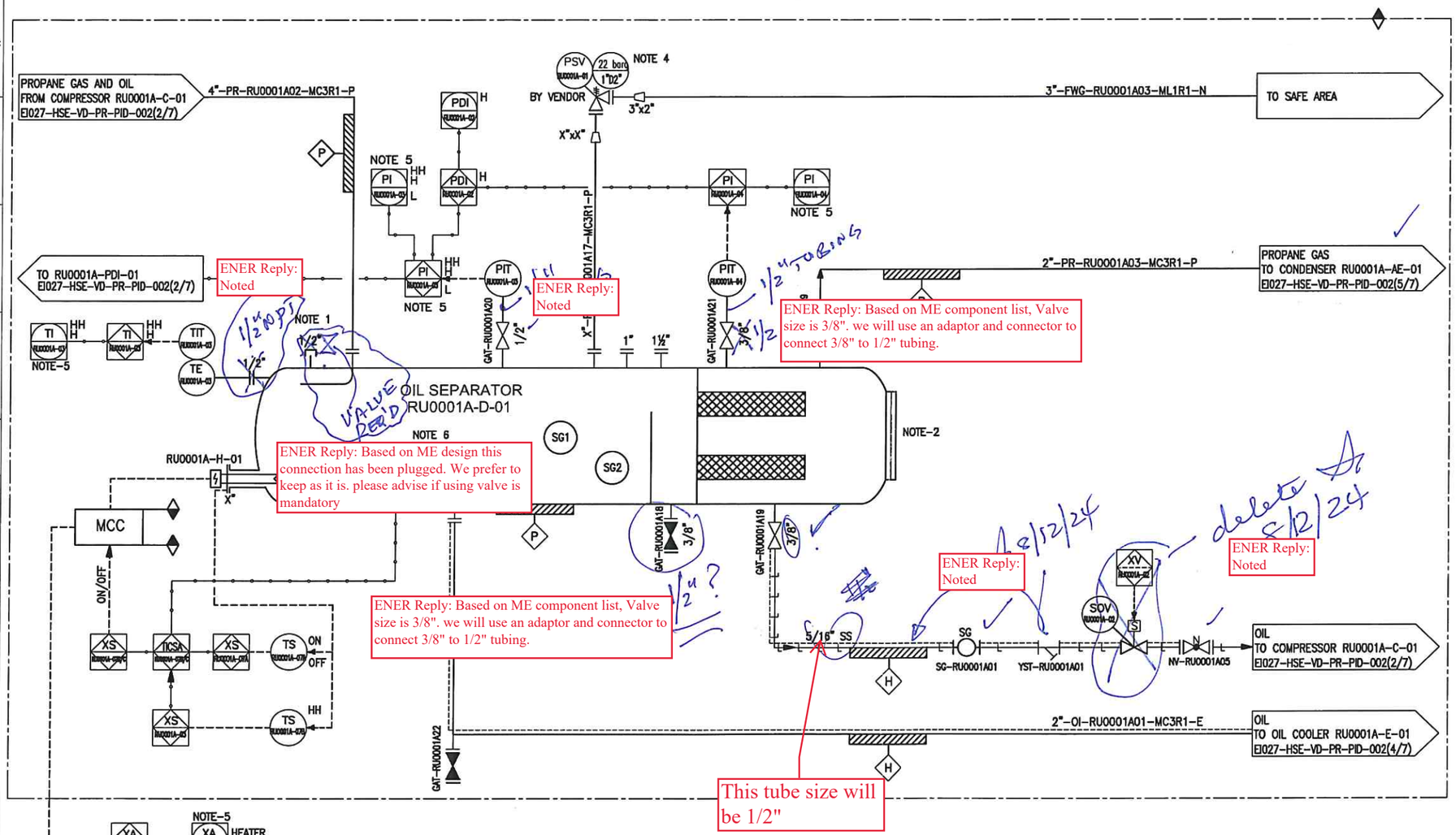
CONSULTING ENGINEER

PROJECT:

DRAWING TITLE:
PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	2 of 7

TAG NO.	RU0001A-D-01
SERVICE	OIL SEPARATOR
DESIGN PRESS. (BARG)	22
DESIGN TEMP. (°C)	-29/100
ID x L (mm)	590 x 2250



REFERENCE DRAWING	DWG NO.	REV.

NOTES :

1- OIL TOP UP & VACUUM CONNECTION.
2- INSPECTION HOLE.
3- STOP CHECK VALVE FOR PREVENT SPIN BACK.
4- SIZE OF PSV WILL BE FINALIZED ON NEXT STAGE.
5- SIGNAL ROUT TO DCS.
6- IN CASE OF LOW OIL LEVEL, THE OIL HEATER TO BE TRIPPED.
7- SET TEMPERATURE FOR ELECTRICAL TRACING IS 30°C.

HOLDE:

EQUIPMENT LIST:

KEY PLAN :

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00		ISSUED FOR APPROVAL (IFA)	A.M.	F.SH.	A.M.

CLIENT

CONSULTING ENGINEER

PROJECT:

DRAWING TITLE:

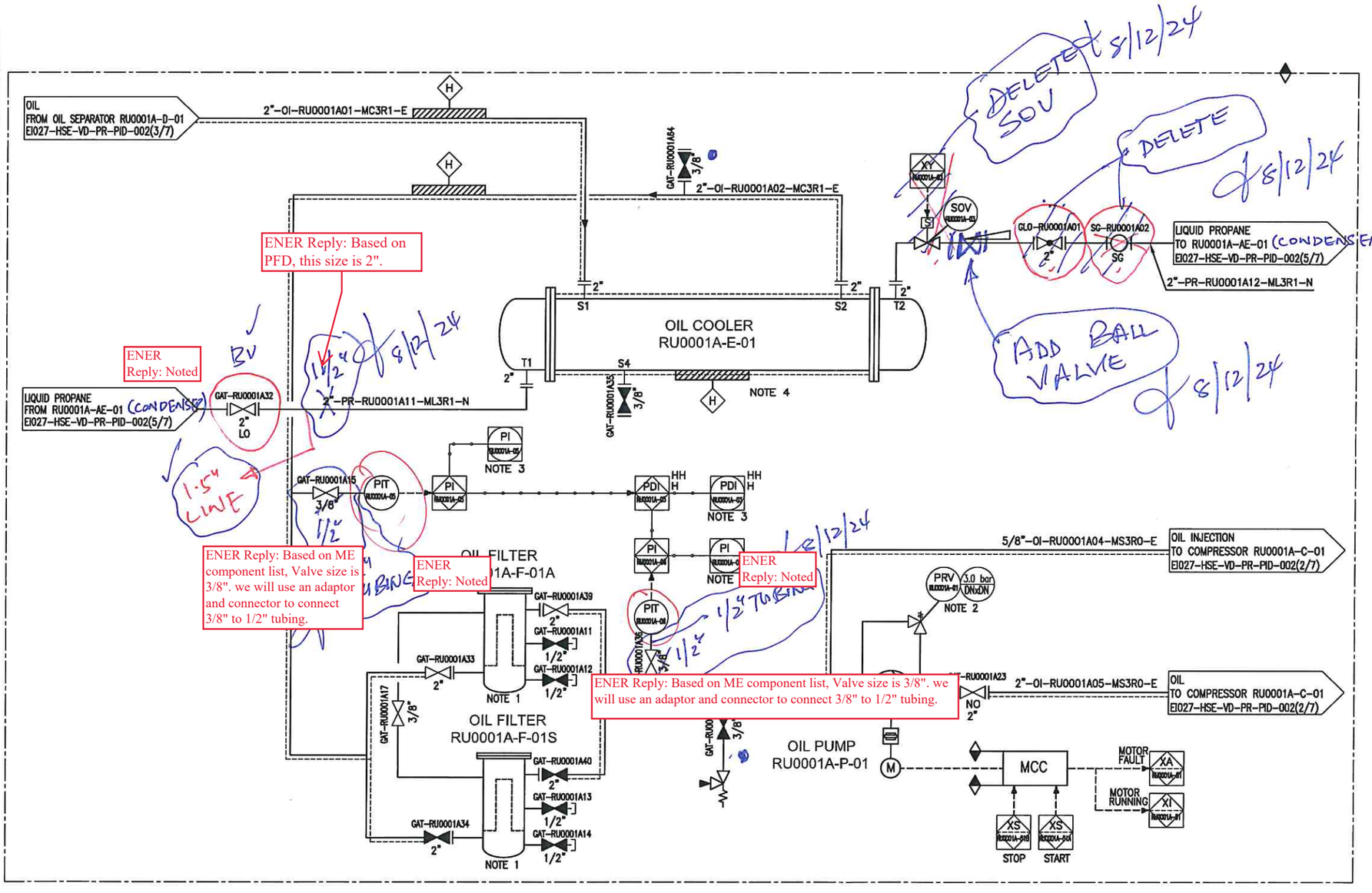
PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	3 of 7

TAG NO.	RU0001A-E-01
SERVICE	OIL COOLER
DESIGN PRESS. (BARG)	S: 30, T:30
DESIGN TEMP. (°C)	S:5/100, T:-45/100
DESIGN DUTY (kW)	24.7
ID x L (mm)	139.7 x 2200
TYPE	AEH

TAG NO.	RU0001A-P-01
SERVICE	OIL PUMP
TYPE	SCREW PUMP
DESIGN PRESS. (BARG)	23
DESIGN TEMP. (°C)	5 / 100
RATED POWER (kW)	2.5

TAG NO.	RU0001A-F-01A/S
SERVICE	OIL FILTER
DESIGN PRESS. (BARG)	23
DESIGN TEMP. (°C)	5/100
ID x L (mm)	MAYEKAWA



REFERENCE DRAWING	DWG NO.	REV.

NOTES :

1- ONE OPERATING / ONE STAND-BY.
2- DP=3 BAR.
3- SIGNAL ROUT TO DCS.
4- HEAT TRACING TO BE TURNED OFF DURING COMPRESSOR START.
5- SET TEMPERATURE FOR ELECTRICAL TRACING IS 30°C.

HOLDE:

EQUIPMENT LIST:

KEY PLAN :

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00		ISSUED FOR APPROVAL (IFA)	A.K.	F.SH.	A.M.

CLIENT

CONSULTING ENGINEER

PROJECT:

DRAWING TITLE:

PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	4 of 7

TAG NO.	RU0001A-AE-01
SERVICE	CONDENSER
DESIGN PRESS. (BARG)	22.0+FV
DESIGN TEMP. (°C)	-45/120
DESIGN DUTY (kW)	257

TAG NO.	RU0001A-D-02
SERVICE	RECEIVER HEADER
DESIGN PRESS. (BARG)	22.0+FV
DESIGN TEMP. (°C)	-45/120
ID x L (mm)	335x5050

REFERENCE DRAWING	DWG NO.	REV.

NOTES :

1- SIZE OF PSV WILL BE FINALIZED ON NEXT STAGE.
2- MANUAL FAN PITCH HAS BEEN CONSIDERED FOR EACH FAN.
3- SET TEMPERATURE FOR ELECTRICAL INSULATIONS IS 30°C.

HOLDE:

ENER Reply: Please keep at this location, if possible. if we move as per comment, so we have to consider running by pass as LTCS

ENER Reply: Noted

ENER Reply: No need to this valve. already we have considered a valve before Level control valve

ENER Reply: Based on PFD, this size is 2".

ENER Reply: Based on PFD, this size is 2". Other modification on priority header will be done

ENER Reply: Noted

ENER Reply: Noted

AGREED TO DELETE. IGNORE COMMENT

NOZZLE ON RECEIVER2 WILL BE DELETED

BALL VALVE RECOMMENDED

BALL VALVE RECOMMENDED

HEATRACE

TO RECEIVER

TO OIL COOLER

AS PER PFD 1.5" LINE

1/2" SS

HOT PROPANE GAS
TO OIL RETURN SYSTEM
EI027-HSE-VD-PR-PID-002(6/7)

RUNNING BYPASS
TO EVAPORATOR INLET
EI027-HSE-VD-PR-PID-002(6/7)

TO SAFE AREA

LIQUID PROPANE
TO RU0001A-E-01 (OIL COOLER)
EI027-HSE-VD-PR-PID-002(4/7)

LIQUID PROPANE
TO EVAPORATOR RU0001A-E-02
EI027-HSE-VD-PR-PID-002(6/7)

PROPANE GAS
FROM OIL SEPARATOR RU0001A-D-01
EI027-HSE-VD-PR-PID-002(3/7)

PROPANE GAS
FROM RU0001A-E-01 (OIL COOLER)
EI027-HSE-VD-PR-PID-002(4/7)

CONDENSER
RU0001A-AE-01

RECEIVER HEADER
RU0001A-D-02

RU0001A-FT-01

EQUIPMENT LIST:

KEY PLAN :

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00		ISSUED FOR APPROVAL (IFA)	A.K.	F.SH.	A.M.

CLIENT

CONSULTING ENGINEER

PROJECT:

DRAWING TITLE:
PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	5 of 7

TAG NO.	RU0001A-E-02
SERVICE	EVAPORATOR
DESIGN PRESS. (barg)	S: 22.0+FV, T: 6.8+FV
DESIGN TEMP. (°C)	S: -45/120, T: 85
DESIGN DUTY (kW)	166.6
SHELL ID x TUBE L (mm)	600-925 x 2300
TEMA TYPE	BKU

TO SAFE AREA

3"-FWG-RU0001A03-ML1R1-N

NOTE 2

22 barg 1"D2" PSV RU0001A-04

3"x2"

3"x1"

FBB-RU0001A05

3"

GLO-RU0001A05

1"

ML1R1 ML3R1

RBL-RU0001A07 3/4"

HPT

C

NOTE 3

GLO-RU0001A04

6"

1/2" SS

1/2" GAT-RU0001A73

PROPANE GAS
TO COMPRESSOR RU0001A-C-01
EI027-HSE-VD-PR-PID-002(2/7)

STYRENE
FROM STYRENE RECIRCULATING PUMPS
P-0004 A/B

3"-ST-RU0001A01-MC3R1-H

H

3"-PR-RU0001A14-ML3R1-C

6"-PR-RU0001A01-ML3R1-C

RBL-RU0001A08 2"

V 2" S3 3" PSV S2 6" S6 LG1 2"

EVAPORATOR
RU0001A-E-02

T1 3"

T2 3"

S1 4"

D1 2"

D2 2"

LG2 2"

RBL-RU0001A44 2"

RBL-RU0001A01 2"

RBL-RU0001A10 2"

GAT-RU0001A78 3/4"

RBL-RU0001A09 2"

GAT-RU0001A79 3/4"

LG LT

LIC HH H L LL

LIC HH H L LL

STYRENE
TO STYRENE STORAGE TANK TK-0001A

3"-ST-RU0001A02-MC3R1-C

MIN.

CHV-RU0001A03

4"x2"

RUNNING BYPASS
FROM OIL SEPARATOR HEADER
EI027-HSE-VD-PR-PID-002(5/7)

1"-PR-RU0001A16-ML3R1-N

XY SOV

YST-RU0001A08

NV-RU0001A07

NC

FROM O.S.B.L.

RBL-RU0001A45 3/4"

NOTE 1

LV RU0001A-03

I/P

LIQUID PROPANE
FROM RECEIVER RU0001A-D-02
EI027-HSE-VD-PR-PID-002(5/7)

1.5"-PR-RU0001A08-ML3R1-N

RBL-RU0001A41

LO 1.5"

1.5"x1"

RBL-RU0001A42 3/4"

FC 1"

2"x1"

RBL-RU0001A43 2"

2"-PR-RU0001A09-ML3R1-C

GLO-RU0001A03 1"

RU0001A-EJ-01

SG SG-RU0001A03

NV-RU0001A08

1/2" SS

NV-RU0001A09

YST-RU0001A09

HOT PROPANE GAS
FROM OIL SEPARATOR HEADER
EI027-HSE-VD-PR-PID-002(5/7)

ENER Reply: Noted

ENER Reply: Noted

ENER Reply: We will send the drawing to you

ENER Reply: Please consider 1/2" to save the cost. also ejector connections are 1/2"

ENER Reply: Noted

ENER Reply: Please consider 1/2" to save the cost. also ejector connections are 1/2"

ENER Reply: Please keep 1/2"

ENER Reply: Noted

REFERENCE DRAWING	DWG NO.	REV.

NOTES :

1- TRAVEL DOWN BLOCK TO BE SET AND LOCKED AT MINIMUM OPENING DURING COMMISSIONING (2 ~ 5%).
2- SIZE OF PSV WILL BE FINALIZED ON NEXT STAGE.
3- AT STAND STILL CONDITION, VALVE NEEDS TO BE CLOSED COMPLETELY. DURING START-UP VALVE TO BE OPENED SMOOTHLY.
4- SET TEMPERATURE FOR ELECTRICAL INSULATIONS IS 30°C.

HOLDE:

EQUIPMENT LIST:

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00		ISSUED FOR APPROVAL (IFA)	A.K.	F.SH.	A.M.

CLIENT

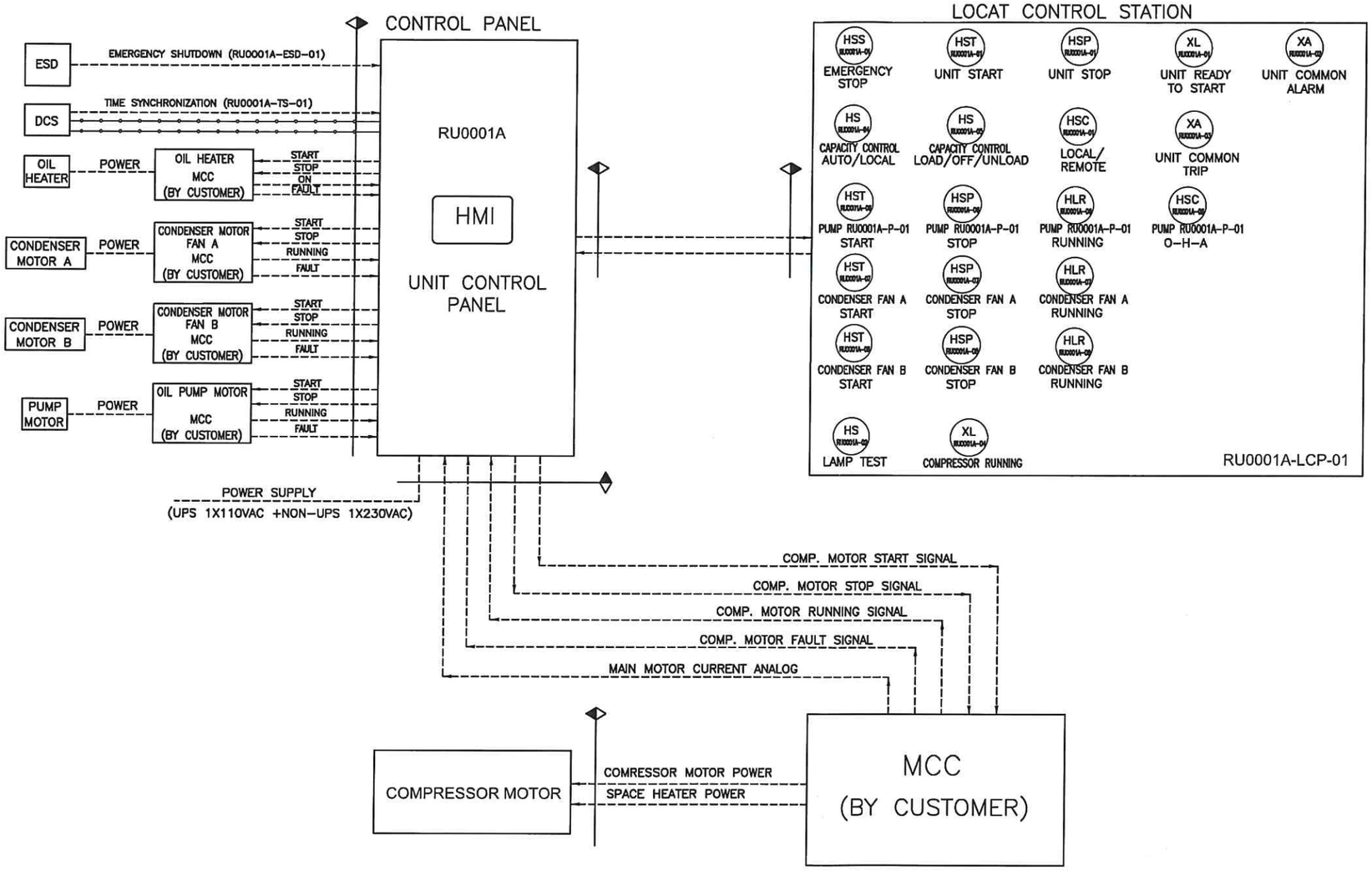
CONSULTING ENGINEER

PROJECT:

DRAWING TITLE:

PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	6 of 7



CONNECTION LIST			
NO.	LOCATION	DESCRIPTION	SIZE
TP-01	PACKAGE	CHILLER INLET	3"-300 ANSI RF
TP-02	PACKAGE	CHILLER OUTLET	3"-300 ANSI RF
TP-03	PACKAGE	FILTER DRYER PROPYLENE INLET	1"-300
TP-04	PACKAGE	INSTRUMENT AIR SUPPLY	3/4"-150

REFERENCE DRAWING	DWG NO.	REV.

NOTES :

HOLDE:

EQUIPMENT LIST:

KEY PLAN :

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00		ISSUED FOR APPROVAL (IFA)	A.K.	F.SH.	A.M.

CLIENT

CONSULTING ENGINEER

PROJECT:

DRAWING TITLE:

PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	7 of 7