

Piping & Instrument Diagram

Document No. 17735-03

Project No.	Vendor Doc.	P.O. No.	Department	Document Type	Serial No	Revision	Page
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**Airpack B.V. - Air Compressor –  
Integrated Methanol and Ammonia Plant  
17735-COM Piping & Instrument Diagram (K020)**

code-2  
M. Vakili

05	04-01-2024	Issued for Approval	S.K.	J.J.	S.K.
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Piping & Instrument Diagram

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




















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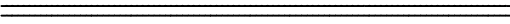


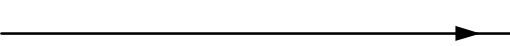


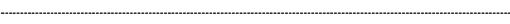

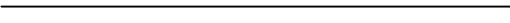


## ABBREVIATIONS




CV = CHECK VALVE  
 FG = FLOW GAUGE  
 FT = FLOW TRANSMITTER  
 LPS = LOCAL PUSHBUTTON STATION  
 LG = LEVEL GAUGE  
 PAH = HIGH PRESSURE ALARM (TRANSMITTER)  
 PAHH = HIGH PRESSURE TRIP (TRANSMITTER)  
 PAL = LOW PRESSURE ALARM (TRANSMITTER)  
 PALL = LOW PRESSURE TRIP (TRANSMITTER)  
 PCV = PRESSURE CONTROL VALVE  
 PDAH = HIGH PRESSURE DIFFERENTIAL ALARM (TRANSMITTER)  
 PDAH= HIGH PRESSURE DIFFERENTIAL TRIP (TRANSMITTER)  
 PDAL = LOW PRESSURE DIFFERENTIAL ALARM (TRANSMITTER)  
 PDALL = LOW PRESSURE DIFFERENTIAL TRIP (TRANSMITTER)  
 PDG = PRESSURE DIFFERENTIAL GAUGE  
 PDIT = PRESSURE DIFFERENTIAL INDICATING TRANSMITTER  
 PDT = PRESSURE DIFFERENTIAL TRANSMITTER  
 PG = PRESSURE GAUGE  
 PIT = PRESSURE INDICATING TRANSMITTER  
 PRV = PRESSURE REDUCING VALVE  
 PSV = PRESSURE SAFETY VALVE  
 PT = PRESSURE TRANSMITTER  
 SG = SIGHT GLASS  
 XY = SOLENOID VALVE  
 TAH = HIGH TEMPERATURE ALARM (TRANSMITTER)  
 TAHH = HIGH TEMPERATURE TRIP (TRANSMITTER)  
 TAL = LOW TEMPERATURE ALARM (TRANSMITTER)  
 TALL = LOW TEMPERATURE TRIP (TRANSMITTER)  
 TCV = TEMPERATURE CONTROL VALVE  
 TG = TEMPERATURE GAUGE  
 TIT = TEMPERATURE INDICATING TRANSMITTER  
 TRV = THERMAL RELIEF VALVE  
 TT = TEMPERATURE TRANSMITTER  
 TW = THERMOWELL  
 HE = HEATER  
 JB = JUNCTION BOX  
 B = BLOWER  
 VAH = HIGH VIBRATION ALARM (TRANSMITTER)  
 VAHH = HIGH VIBRATION TRIP (TRANSMITTER)  
 XI = ANNUNCIATOR (HORN)  
 VT = VIBRATION TRANSMITTER  
 FIT = FLOW INDICATED TRANSMITTER  
 TIC = TEMPERATURE INDICATED CONTROL  
 PIC = PRESSURE INDICATED CONTROL

## SYMBOLS

 BALL VALVE  
 BLOCK AND BLEED 2-WAY MANIFOLDS  
 Y-STRAINER  
 PRESSURE SAFETY VALVE  
 VENT  
 SIGHT GLASS  
 COMPRESSOR STAGE  
 GATE VALVE  
 REDUCER  
 PRESSURE CONTROL VALVE  
 CHECK VALVE  
 SIGNAL  
 INSTRUMENT  
 OIL SIEVE  
 PUMP  
 FAN  
 OIL HEATER  
 VESSEL  
 SHELL / TUBE WATER COOLER  
 MOTOR  
 ELECTRICAL PANEL LIGHT INDICATOR  
 ELECTRICAL PANEL PUSH BUTTON  
 SELECTOR SWITCH

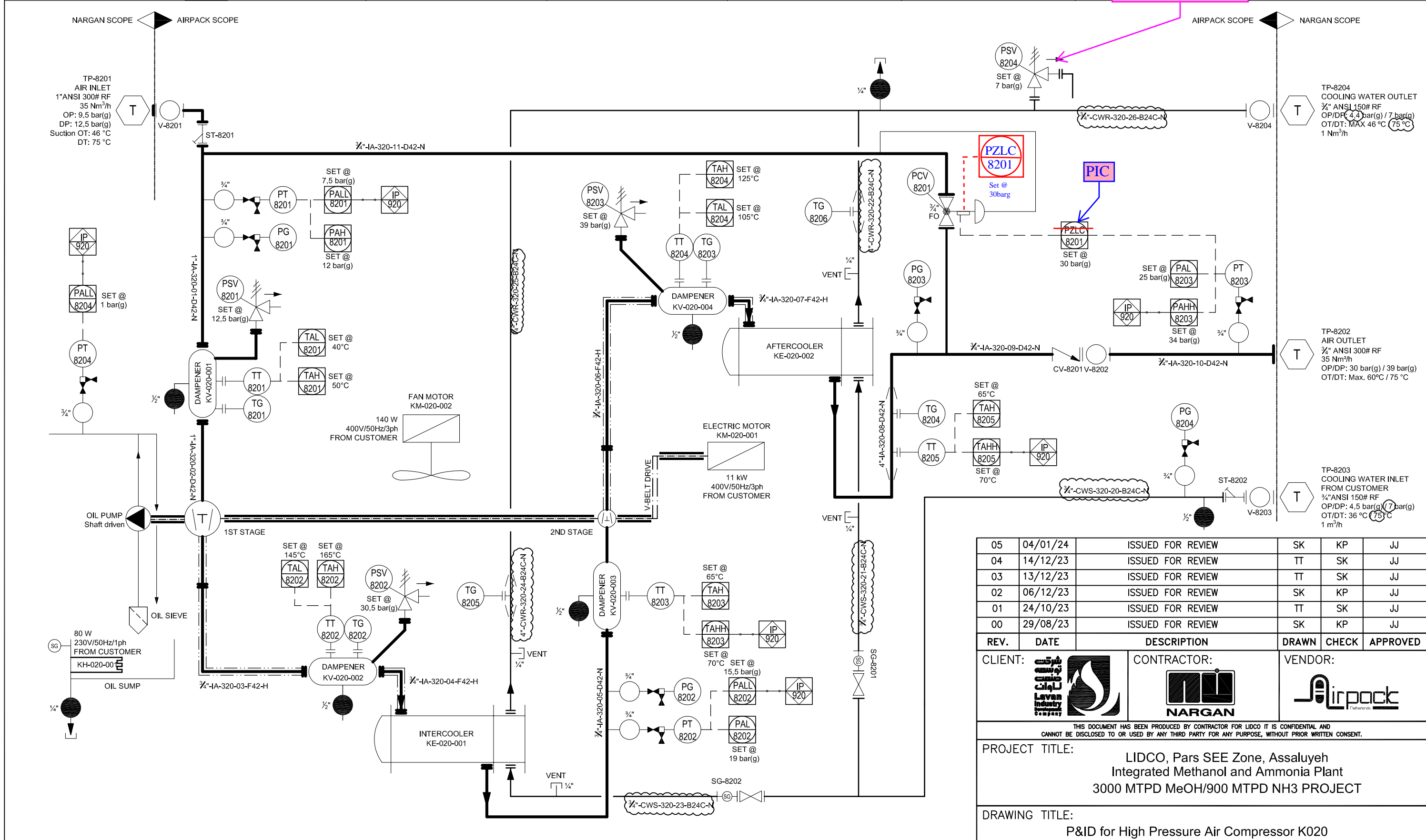
## LINES

 BELT  
 SHAFT  
 MECHANICAL CONNECTION  
 COOLING WATER LINE  
 ELECTRICAL LINE  
 GAS/AIR LINE  
 HEAT TRACING  
 OIL LINE  
 PURGE AIR  
 INSULATION  
 SIGNAL

05	04/01/24	ISSUED FOR REVIEW	SK	KP	JJ		
04	14/12/23	ISSUED FOR REVIEW	TT	SK	JJ		
03	13/12/23	ISSUED FOR REVIEW	TT	SK	JJ		
02	06/12/23	ISSUED FOR REVIEW	SK	KP	JJ		
01	24/10/23	ISSUED FOR REVIEW	TT	SK	JJ		
00	29/08/23	ISSUED FOR REVIEW	SK	KP	JJ		
REV.	DATE	DESCRIPTION	DRAWN	CHECK	APPROVED		
CLIENT: 		CONTRACTOR: 	VENDOR: 				
THIS DOCUMENT HAS BEEN PRODUCED BY CONTRACTOR FOR LIDCO IT IS CONFIDENTIAL AND CANNOT BE DISCLOSED TO OR USED BY ANY THIRD PARTY FOR ANY PURPOSE, WITHOUT PRIOR WRITTEN CONSENT.							
PROJECT TITLE: LIDCO, Pars SEE Zone, Assaluyeh Integrated Methanol and Ammonia Plant 3000 MTPD MeOH/900 MTPD NH3 PROJECT							
DRAWING TITLE: P&ID for High Pressure Air Compressor K020							
DOCUMENT No: 17735-03 P&ID					SC.		
					SIZE: A3		
PROJECT No.	VENDOR DOC.	P.O. No.	DEPARTMENT	DOC. TYPE	SERIAL No.	REV.	SHEET No.
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COMPRESSOR	MAIN MOTOR	INTERCOOLER	AFTERCOOLER	PULSATION DAMPER INLET	PULSATION DAMPER 1ST STAGE DISCHARGE	PULSATION DAMPER 2ND STAGE SUCTION	PULSATION DAMPER 2ND STAGE DISCHARGE
Tagnumber: K-020 Type: 2-stage oilfree piston Modelnumber: RBV-130 Discharge capacity: 35 Nm <sup>3</sup> /h Operating pressure: 30 bar(g) Speed: 410 rpm	Tagnumber: KM-020 Rated power: 11 kW Speed: 1485 rpm Power supply: 400 V/ 50 Hz/ 3 ph Ingress protection: IP-55 Hazardous area class: Safe Area	Tagnumber: KE-020-001 Flow air side: 35 Nm <sup>3</sup> /hr Flow water side: 1 Nm <sup>3</sup> /hr OP / DP: 23,3 bar(g) / 30,5 bar(g) OT / DT: 157 °C / 175 °C Deslgn: TEMA C, ASME VIII Div. 1 Material: SS316	Tagnumber: KE-020-002 Flow air side: 35 Nm <sup>3</sup> /hr Flow water side: 1 Nm <sup>3</sup> /hr OP / DP: 30 bar(g) / 39 bar(g) OT / DT: 116 °C / 135 °C Deslgn: TEMA C, ASME VIII Div. 1 Material: SS316	Tagnumber: KV-020-001 Volume: 30 L OP / DP: 9,5 bar(g) / 12,5 bar(g) OT / DT: 46 °C / 75 °C Design: ASME VIII Div. 1 Material: CS	Tagnumber: KV-020-002 Volume: 30 L OP / DP: 23,3 bar(g) / 30,5 bar(g) OT / DT: 157 °C / 175 °C Design: ASME VIII Div. 1 Material: CS	Tagnumber: KV-020-003 Volume: 30 L OP / DP: 22,1 bar(g) / 39 bar(g) OT / DT: 60 °C / 157 °C Design: ASME VIII Div. 1 Material: CS	Tagnumber: KV-020-004 Volume: 30 L OP / DP: 30 bar(g) / 39 bar(g) OT / DT: 116 °C / 135 °C Design: ASME VIII Div. 1 Material: CS

Refer to reply sheet for PSV scenario



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01	24/10/23	ISSUED FOR REVIEW	TT	SK	JJ
00	29/08/23	ISSUED FOR REVIEW	SK	KP	JJ

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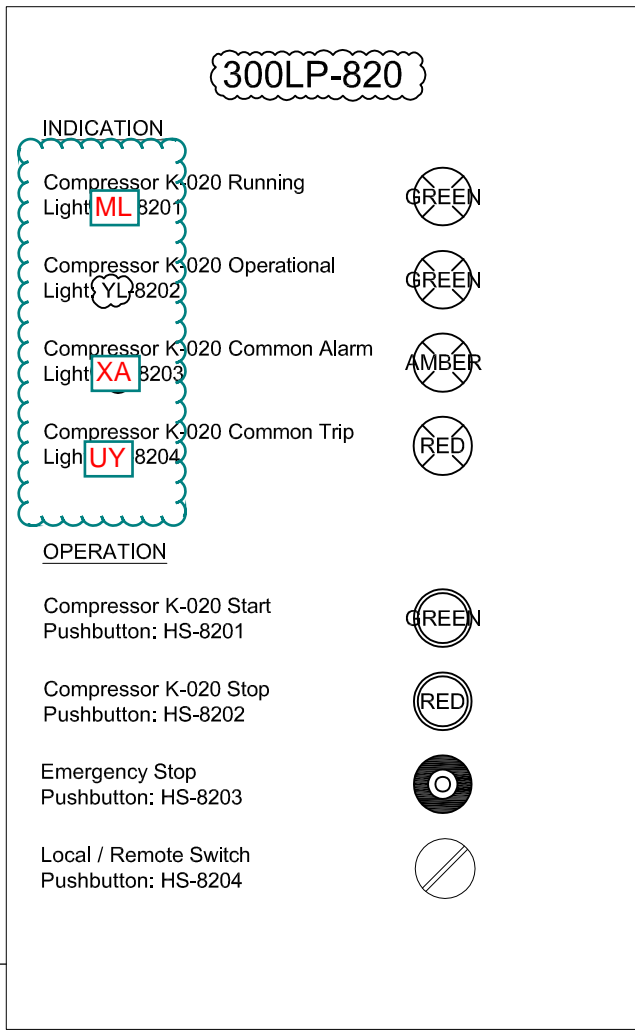
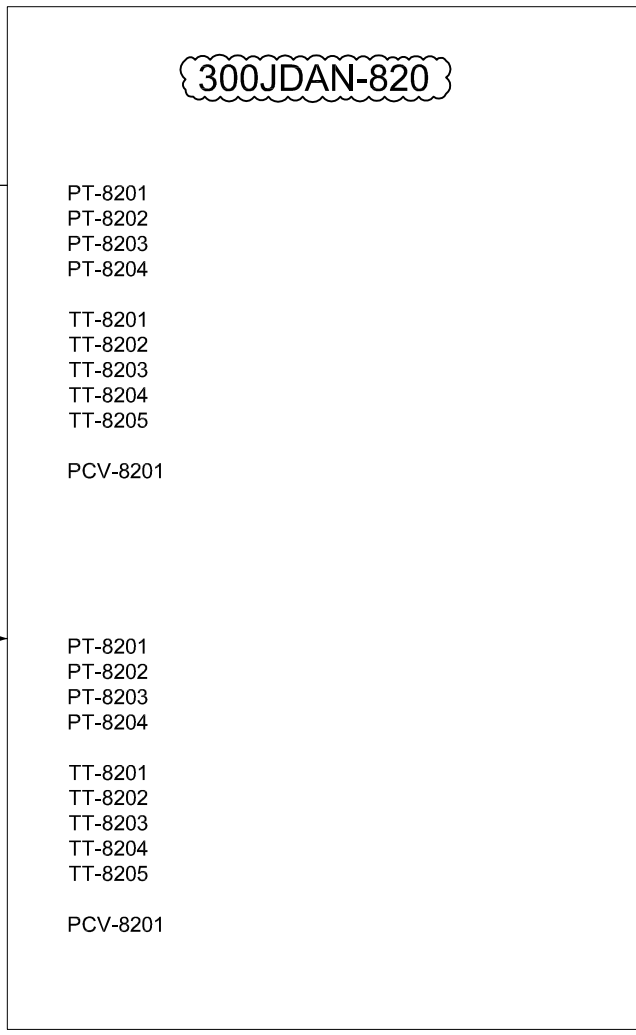
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PROJECT TITLE: LIDCO, Pars SEE Zone, Assaluyeh Integrated Methanol and Ammonia Plant 3000 MTPD MeOH/900 MTPD NH3 PROJECT

DRAWING TITLE: P&ID for High Pressure Air Compressor K020

DOCUMENT No:	17735-03 P&ID						SC.
PROJECT No.	VENDOR DOC.	P.O. No.	DEPARTMENT	DOC. TYPE	SERIAL No.	REV.	SHEET No.
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- NOTES
- All instruments have prefix '320'.
  - Instrument / control air tubing size: 12mm
  - TT and TG process connection is 3/4" NPT
  - TW process connection is 1 1/2" flange
  - PT and PG process connection is 1/2" NPT
  - Process connection of control valve is 300# flanged ANSI
  - Main process line piping material is SS316
  - Cooling water process line piping material is carbon steel
  - All signals is LIDCO scope and are connected to battery limit



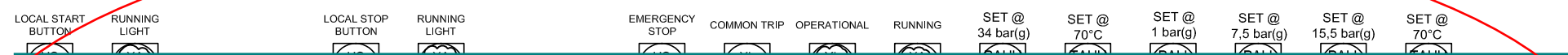
Multi-pair cable by NARGAN  
TO DCS

Individual Signal Cable by Airpack  
FROM COMPRESSOR

Multi-pair cable by NARGAN

By AIRPACK

To be revised based on Instrument comment



REFER TO ATTACHMENT#1

REV.	DATE	DESCRIPTION	DRAWN	CHECK	APPROVED
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04	14/12/23	ISSUED FOR REVIEW	TT	SK	JJ
03	13/12/23	ISSUED FOR REVIEW	TT	SK	JJ
02	06/12/23	ISSUED FOR REVIEW	SK	KP	JJ
01	24/10/23	ISSUED FOR REVIEW	TT	SK	JJ
00	29/08/23	ISSUED FOR REVIEW	SK	KP	JJ

CLIENT:  **Lavan Industry Company**

CONTRACTOR:  **NARGAN**

VENDOR:  **Airpack**

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PROJECT TITLE:  
LIDCO, Pars SEE Zone, Assaluyeh  
Integrated Methanol and Ammonia Plant  
3000 MTPD MeOH/900 MTPD NH3 PROJECT

DRAWING TITLE:  
P&ID for High Pressure Air Compressor K020

- NOTES
- All instruments have prefix '320-'.
  - Package will be DCS controlled (by others)

DOCUMENT No: 17735-03 P&ID						SC.
						SIZE: A3
PROJECT No.	VENDOR DOC.	P.O. No.	DEPARTMENT	DOC. TYPE	SERIAL No.	REV. SHEET No.
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