








<b>OWNER:</b>  شرکت پترو شیمی بوشهر	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>							<b>CONTRACTOR</b>  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT	
<b>MC:</b>  شرکت سهند انرژی و پیمانکاری	<b>MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)</b>							<b>Contract No :</b>	
<b>Owner Document Number :</b>	<b>Project</b> BU	<b>Area</b> 20	<b>Phase</b> VD	<b>Unit</b> 303	<b>Dis.</b> ME	<b>Doc.</b> DSH	<b>Seq.</b> 0075	rev 01	Page: 1 OF 20

# MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)



Rev.	Date	Description	Prepared By	Checked By	Approved	AC code.
01	4-11-2021	for approval	KP	KP	JR	
00	12-8-2021	for approval	KP	KP	JR	



<b>OWNER:</b>  شرکت پتروشیمی بوشهر	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>							<b>CONTRACTOR</b>  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT	
<b>MC:</b>   شرکت مستعد و پیمانکاری پارس	<b>MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)</b>								
	Project	Area	Phase	Unit	Dis.	Doc.	Seq.	Contract No :	
Owner Document Number :	BU	20	VD	303	ME	DSH	0075	rev 01	Page: 2 OF 20

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6	X	X	51	96
7	X	X	52	97
8	X	X	53	98
9	X	X	54	99
10	X	X	55	100
11	X	X	56	101
12	X	X	57	102
13	X	X	58	103
14	X	X	59	104
15	X	X	60	105
16	X	X	61	106
17	X	X	62	107
18	X	X	63	108
19	X	X	64	109
20	X	X	65	110
21			66	111
22			67	112
23			68	113
24			69	114
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<b>OWNER:</b>  شرکت پتروشیمی بوشهر BUPC	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>	<b>CONTRACTOR:</b>  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT
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<b>MC:</b>   شرکت پتروشیمی بوشهر BUPC	<b>MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)</b>							
	Project	Area	Phase	Unit	Dis.	Doc.	Seq.	Contract No : 52-98/445

Owner Document Number : **BU**    **20**    **VD**    **303**    **ME**    **DSH**    **75**    **Rev : 01**    **Page: 4 OF 20**

	GAS ANALYSIS AT OPERATING CONDITIONS MOLE PERCENT	REMARKS
1		
2		
3	<input checked="" type="radio"/> SERVICE/ITEM NO. <input checked="" type="radio"/> STAGE <input type="radio"/> NORMAL OR ALT	
4		
5		
6	M.W.    NORMAL	
7	AIR    28.966    100	
8	NITROGEN    28.016	
9	WATER    H <sub>2</sub> O    18.016	
10	CARBON MONOXIDE CO    28.010	
11	CARBON DIOXIDE CO <sub>2</sub> 44.010	
12	HYDROGEN    H <sub>2</sub> 2.016	
13	METHANE    CH <sub>4</sub> 16.042	
14	ETHANE    30.068	
15	PROPANE    44.094	
16	i-BUTANE    58,12	
17	n-BUTANE    58,12	
18	i-PENTANE    72,146	
19	OXYGEN    O <sub>2</sub> 32.00	
20	HYDRO. SULFIDE    34,076	
21	ETHYLENE    28,052	
22	PROPYLENE    42,078	
23	n-PENTANE    72,146	<input checked="" type="radio"/> APPLICABLE SPECIFICATIONS API-618-RECIPROCATING COMPRESSORS FOR PETROLEUM, CHEMICAL AND GAS INDUSTRY SERVICES
24	HEXANE PLUS	
25	AMMONIA    17,031	
26	HYDRO. CHLORIDE    36,461	
27	CHLORINE    70,914	<input checked="" type="radio"/> Doc. No. 1216-DE-00-RE-MSS-302
28		
29		
30		
31	TOTAL:	
32	<input type="checkbox"/> CALCULATED MOL WT.    28,97	
33	<input type="checkbox"/> Suction temperature °C    45 Cp/Cv (K) @ 65° OR	
34	NOTE: IF WATER VAPOR AND/OR CHLORIDES ARE PRESENT, EVEN MINUTE TRACES, IN THE GAS BEING COMPRESSED, IT MUST BE INCLUDED ABOVE.	
35		
36	SITE CONDITION (SEE PROJECT SITE CONDITION FOR MORE DETAIL)	
37	ELEVATION    8,5    m    BAROMETER    1,013    (BARA)    AMBIENT TEMPS: MAX    55    °C    MIN    5    °C	
38	<input type="radio"/> MIN DESIGN METAL TEMP    5    °C (2.14.8)    RELATIVE HUMIDITY: MAX    76%    MIN    74%    %	
39	COMPRESSOR LOCATION: <input type="radio"/> INDOOR    HEATED <input checked="" type="radio"/> UNHEATED <input checked="" type="radio"/> AT GRADE LEVEL <input type="radio"/> ELEVATED:    _____    M	
40	<input checked="" type="radio"/> OUTDOOR    NO ROOF <input checked="" type="radio"/> UNDER ROOF <input type="radio"/> PARTIAL SIDES <input type="radio"/> PLATFORM: <input checked="" type="radio"/> ON-SHORE	
41	<input type="radio"/> OFF-SHORE <input checked="" type="radio"/> WEATHER PROTECTION REQ. <input checked="" type="radio"/> TROPICALIZATION REQ.	
42	<input type="radio"/> WINTERIZATION REQUIRED	
43	UNUSUAL CONDITIONS: <input type="radio"/> CORROSIVES <input checked="" type="radio"/> DUST <input checked="" type="radio"/> FUMES <input checked="" type="radio"/> OTHER    Sand storm , Thunder & Lightening, Sea Breeze	
44		
45	ELECTRICAL CLASSIFICATIONS	
46	HAZARDOUS    NON-HAZARDOUS	
47	MAIN UNIT <input checked="" type="radio"/> ZONE    2    GROUP    IIB    TEMP CLASS    T3 <input type="radio"/>	
48	L.O. CONSOLE <input checked="" type="radio"/> ZONE    2    GROUP    IIB    TEMP CLASS    T3 <input type="radio"/>	
49	CW CONSOLE <input type="radio"/> ZONE    _____    GROUP    _____    TEMP CLASS    _____ <input type="radio"/>	
50		
51		
52		

<b>OWNER:</b>  شرکت پتروشیمی بوشهر BUPC	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>	<b>CONTRACTOR:</b>  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT							
<b>MC:</b>  	<b>MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)</b>								
<b>Owner Document Number :</b>	<b>BU</b>	<b>20</b>	<b>VD</b>	<b>303</b>	<b>ME</b>	<b>DSH</b>	<b>75</b>	<b>Rev : 01</b>	<b>Page: 5 OF 20</b>

**PART LOAD OPERATING CONDITIONS**

CAPACITY CONTROL BY:  MFG'S CAP. CONTROL  PURCHASERS BY-PASS  BOTH  OTHER \_\_\_\_\_  
 FOR:  PART LOAD COND.  START-UP ONLY  BOTH  
 WITH:  AUTO LOADING DELAY INTERLOCK  AUTO IMMEDIATE UNLOADING  
 USING:  FIXED VOLUME POCK.  SUCTION VALVE UNLOADERS:  FINGER  PLUG  OTHER  
 ACTION:  DIRECT (AIR-TO-UNLOAD)  REVERSE (AIR-TO-LOAD/FAIL SAFE)  
 NUMBER OF STEPS:  ONE  THREE  FIVE  OTHER \_\_\_\_\_  
 RAIN COVER REQUIRED OVER UNLOADERS

ALL UNLOADING STEPS BASIS MANUFACTURERS CAPACITY SHOWN ON PAGE 1.

<p><b>INLET AND DISCHARGE PRESSURE ARE</b></p> <input type="radio"/> AT CYLINDER FLANGES <input checked="" type="radio"/> PULSATION SUPPRESSOR FLANGES <p> <input type="radio"/> SERVICE OR ITEM NO.  <input checked="" type="radio"/> STAGE  <input checked="" type="radio"/> NORMAL OR ALTERNATE CONDITION  <input type="radio"/> PERCENT CAPACITY  <input type="radio"/> WEIGHT FLOW, kg/h  <input checked="" type="radio"/> m<sup>3</sup>/h (760 mm HG &amp; 0°C)  <input type="checkbox"/> POCKETS/VALVES OPERATION *  <input type="checkbox"/> POCKET CLEARANCE ADDED %  <input type="checkbox"/> TYPE UNLOADERS, PLUG/FINGER  <input checked="" type="radio"/> INLET TEMPERATURE, °C  <input checked="" type="radio"/> INLET PRESSURE, (BARA)  <input checked="" type="radio"/> DISCHARGE PRESSURE, (BARA)  <input type="checkbox"/> DISCHARGE TEMP., ADIABATIC °C  <input type="checkbox"/> DISCHARGE TEMP., PREDICTED °C  <input type="checkbox"/> VOLUMETRIC EFF., %HE/%CE(AVER)  <input type="checkbox"/> CALC. GAS ROD LOAD, KN, C **  <input type="checkbox"/> CALC. GAS ROD LOAD, KN, T **  <input checked="" type="checkbox"/> COMB. ROD LOAD, KN C (GAS &amp; INERTIA)  <input checked="" type="checkbox"/> COMB. ROD LOAD, KN T (GAS &amp; INERTIA)  <input checked="" type="checkbox"/> ROD REV., DEGREES MIN @ X-HD PIN ***  <input type="checkbox"/> BkW/STAGE  <input type="checkbox"/> TOTAL kW @ COMPRESSOR SHAFT  <input type="checkbox"/> TOTAL kW INCL. V-BELT &amp; GEAR LOSSES         </p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>1</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Normal</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>100</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>223</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>173</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Vavles</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>NA</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Plug</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>45</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8 (Min.:7, Max:8.5)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>21,5</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>164</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>180</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>/75</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>17,5</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>17,5</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>13,13</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>12,6</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>195</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>12</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>12</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>13</td><td></td><td></td><td></td><td></td><td></td></tr> </table>	1						Normal						100						223						173						Vavles						NA						Plug						45						8 (Min.:7, Max:8.5)						21,5						164						180						/75	/	/	/	/	/	17,5						17,5						13,13						12,6						195						12						12						13					
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\* SHOW OPERATION WITH THE FOLLOWING SYMBOLS:

HEAD END = HE OR CRANK END = CE	} PLUS	} SUCTION VALVE(S) UNLOADED = S	OR	} FIXED POCKET OPEN = F	OR	} VARIABLE POCKET OPEN = V
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\*\* C = COMPRESSION      T = TENSION      \*\*\* X - HD = CROSSHEAD  
 MINIMUM PRESSURE REQUIRED TO OPERATE CYLINDER UNLOADING DEVICES, 6 \_\_\_\_\_ (BARG)  
 CYLINDER UNLOADING MEDIUM:  AIR  NITROGEN  OTHER \_\_\_\_\_  
 PRESSURE AVAILABLE FOR CYLINDER UNLOADING DEVICES, MAX/MIN 6,0 / 8,0 (BARG)

**SPECIAL REMARK:**

<b>OWNER:</b>  شریکت پتروکیمی نوشهر	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>	<b>CONTRACTOR:</b>  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT
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<b>MC:</b> 	<b>MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)</b>
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<b>Project</b>	Area	Phase	Unit	Dis.	Doc.	Seq.	<b>Contract No : 52-98/445</b>
BU	20	VD	303	ME	DSH	75	Rev : 01    Page: 6 OF 20

**● SCOPE OF BASIC SUPPLY**

PURCHASER TO FILL IN (    ) AFTER COMMODITY TO INDICATE:  BY COMPR. MFR.     BY PURCH.     BY OTHERS

DRIVER (    ):    VARIABLE SPEED    SPEED RANGE    NOT APPLICABLE    RPM TO    NOT APPLICABLE RPM  
 INDUCTION MOTOR     SYNCHRONOUS MOTOR     STEAM TURBINE     ENGINE     OTHER \_\_\_\_\_  
 API-541     API-546     API-611     API-612  
 OUTBOARD BEARING     PROVISION FOR DRY AIR PURGE FOR OUTBOARD BEARING.  
 SLIDE BASE FOR DRIVER (    )    SOLE PLATE FOR DRIVER (    )  
 MOTOR STARTING EQUIPMENT (    ); DEFINE \_\_\_\_\_ Local power distribution board  
 GEAR (    ):     BASEPLATE FOR GEAR     API-613     API-677  
 COUPLING(S) (    ):     LOW SPD.     HI-SPD.     QUILL SHAFT     KEY-LESS DRV.     KEY'D DRV.     OTHER #1  
 API 671  
 V-BELT DRIVE (    ):     SHEAVES & V-BELTS (    )     STATIC CONDUCTING V-BELTS     BANDED V-BELTS  
 DRIVE GUARD(S) (    ):     MANUFACTURER'S STD.     NON-SPARKING     CALIF CODE     API-671 APPENDIX C  
 OTHER \_\_\_\_\_

PULSATION SUPPRESSORS WITH INTERNALS (    ):     INITIAL INLET & FINAL DISCHARGE     SUPPORTS (    )  
 INTERSTAGE     SUPPORTS (    )  
 PULSATION SUPPRESSORS WITHOUT INTRNL (    ):     INITIAL INLET & FINAL DISCHARGE     SUPPORTS (    )  
 INTERSTAGE     SUPPORTS (    )  
 SUPPRESSOR(S) TO HAVE MOISTURE REMOVAL SECTION:     INITIAL INLET ONLY     ALL INLET SUPPRESSORS  
 ACOUSTICAL SIMUL. STUDY (    ):    DESIGN APPROACH     1, EMPRICAL PULSATION SUPPRESSION DEVICE SIZING  
 DIGITAL     ANALOG     2, ACOUSTIC SIMULATION AND PIPING RESTRAINT ANALYSIS  
 3, ACOUSTIC SIMULATION AND PIPING RESTRAINT ANALYSIS PLUS MECHANICAL ANALYSIS  
 STUDY TO CONSIDER:    ALL SPECIFIED LOAD COND., INCL.     SINGLE ACT., PLUS  
 COMP. OPER. IN PARALLEL     ALTERNATE GASES  
 WITH EXISTING COMP. AND PIPING SYSTEMS  
 COMPRESSOR VALVE DYNAMIC RESPONSE  
 PULSATION SUPPRESSEN DEVICE LOW CYCLE FATIGUE ANALYSIS  
 PIPING SYSTEM FLEXIBILITY  
 STUDY TO BE WITNESSED  
 VENDOR REVIEW OF PURCHASER'S PIPING ARRANGEMENT

NOTE: SEE APPENDIX N FOR INFORMATION REQUIRED FOR STUDY

PACKAGED:     NO     YES (    )    DEFINE BASIC SCOPE OF PACKAGING IN REMARKS SECTION  
 SKID     SOLEPLT.     BASEPLT.     BOLTS OR STUDS FOR SOLEPLT. TO FRAME     RAILS     CHOKE BLOCKS     SHIMS  
 SUITABLE FOR COLUMN MOUNTING (UNDER SKID AND/OR BASEPLATE)  
 LEVELING SCREWS     NON-SKID DECKING     SUB SOLEPLATES  
 DIRECT GROUTED     CEMENTED/MORTAR GROUT     EPOXY GROUT; MFG/TYPE \_\_\_\_\_ / \_\_\_\_\_  
 INTERCOOLER(S) (    )     SEPARATOR(S) (    )     AFTERCOOLER(S) (    )

**INTERCOOLERS:**  
 INTERSTAGE PIPE (    )     PIPING MATCHMARKED     SHOP FITTED     MACHINE MTD.  
 CONDENSATE SEPARATION & COLLECTION FACILITY SYSTEM PER 3.8.12     OFF MOUNTED  
 INLET STRAINER(S) (    ):     INITIAL INLET     SIDESTREAM INLET     SPOOL PIECE FOR INLET STRAINERS  
 MANIFOLD PIPING;     DRAINS     VENTS     RELIEF VALVES     AIR/GAS SUPPLY     FLANGE FINISH  
 RELIEF VALVE(S) (    ):     INITIAL INLET     INTERSTAGE     FINAL DISCHARGE     API-618 FLANGE FINISH  
 RUPTURE DISC(S) (    )     THRU STUDS IN PIPING FLANGES  
 CRANKCASE RAPID PRESSURE RELIEF DEVICE(S) (    )     FLANGE FINISH PER ANSI 16.5  
 SPECIAL PIPING REQUIREMENTS     SPECIAL FINISH

INITIAL INLET,     INTERSTAGE SUCTION PIPING ARR'D FOR:    INSULATION (PP) (    )    HEAT TRACING (    )  
 FOR ATMOSPHERIC INLET AIR COMPR. ONLY:     INLET AIR FILTER (    )     INLET FILTER -SILENCER (    )  
 PREFERRED TYPE OF CYLINDER COOLING (    ):     FORCED     THERMOSYPHON    \_\_\_\_\_    STAGE CYL(S)  
 STATIC (STAND-PIPE)    \_\_\_\_\_    STAGE CYL(S)  
 CYL. COOLING WATER PIPING (    )     MATCH M'RKED  
 SINGLE INLET/OUTLET MANIFOLD & VALVES     SIGHT GL'S(S)  
 INDIVIDUAL INLET/ OUTLET PER CYL.     VALVE(S)  
 CLOSED SYS. WITH WATER PUMP, COOLER, SURGE TANK, & PIPING  
 SHOP RUN     ARR'D FOR HEATING JACKET AS WELL AS COOLING

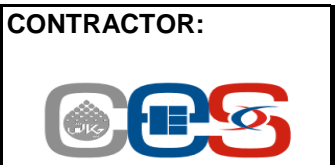
#1: Flexible/ all-metal/spacer type/non-sparking couplings.







**BUSHEHR PETROCHEMICAL COMPANY  
MEG PLANT**



**MECHANICAL DATA SHEET FOR EMERGENCY  
INSTRUMENT AIR COMPRESSOR (20-C-7080)**

Chagalesh-Enerchimi-Steam  
Joint Venture  
BUPC-MEG PLANT PROJECT

<b>Project</b>	<b>Area</b>	<b>Phase</b>	<b>Unit</b>	<b>Dis.</b>	<b>Doc.</b>	<b>Seq.</b>	<b>Contract No : 52-98/445</b>
BU	20	VD	303	ME	DSH	75	Rev : 01   Page: 9 OF 20

**Owner Document Number**

<input checked="" type="checkbox"/> <b>CYLINDER DATA AT FULL LOAD CONDITION</b>							
1							
2	SERVICE/ITEM NO.	Air					
3	STAGE	1					
4	INLET PRESSURE, (BARA)	8,0					
5	DISCHARGE PRESSURE, (BARA)	21,0					
6	CYLINDERS PER STAGE	2					
7	SINGLE OR DOUBLE ACTING (SA OR DA)	SA					
8	BORE, mm	170					
9	STROKE, mm	140					
10	RPM:	RATED / MAX ALLOW		400/690			
11	PISTON SPEED, m/s:	RATED / MAX ALLOW					
12	CYLINDER LINER, YES/NO	yes					
13	LINER NOMINAL THICKNESS, mm						
14	PISTON DISPLACEMENT, m³/h	36,9					
15	CYLINDER DESIGN CLEARANCE, % AVERAGE						
16	VOLUMETRIC EFFICIENCY, % AVERAGE	73					
17	VALVES, INLET/DISCHARGE, QTY PER CYL.	1/1		/	/	/	/
18	TYPE OF VALVES	plate					
19	VALVE LIFT, INLET/DISCHARGE, mm	/		/	/	/	/
20	VALVE VELOCITY, API 4TH EDITION, m/s						
21	SUCTION VALVE(S)	16,65					
22	DISCHARGE VALVE(S)	16,65					
23	ROD DIAMETER, (mm)	30					
24	MAX ALLOW. COMBINED ROD LOADING, kN, C *	17,5					
25	MAX ALLOW. COMBINED ROD LOADING, kN, T *	17,5					
26	CALCULATED GAS ROD LOAD, kN, C *	11,06					
27	CALCULATED GAS ROD LOAD, kN, T *	0,36					
28	COMBINED ROD LOAD (GAS + INERTIA), kN, C *	10,83					
29	COMBINED ROD LOAD (GAS + INERTIA), kN, T *	0,20					
30	ROD REV., DEGREES MIN @ X-HD PIN**	195,00					
31	RECIP WT. (PISTON, ROD, X-HD & NUTS), kg**	10,74					
32	MAX ALLOW. WORKING PRESSURE, (BARG)	24					
33	MAX ALLOW. WORKING TEMPERATURE, °C	230					
34	HYDROSTATIC TEST PRESSURE, (BARG)	36					
35	HELIUM TEST PRESSURE, (BARG)	3					
36	INLET FLANGE SIZE/RATING at CYLINDER	/		/	/	/	/
37	FACING at CYLINDER						
38	DISCHARGE FLANGE SIZE/RATING at CYLINDER	/		/	/	/	/
39	FACING at CYLINDER						
40	<b>DISCHARGE RELIEF VALVE SETTING DATA AT INLET PRESSURES GIVEN ABOVE:</b>						
41	RECOMMENDED SETTING, (BARG)	-25					
42	GAS ROD LOAD, kN, C *	17,5					
43	GAS ROD LOAD, kN, T *	17,5					
44	COMBINED ROD LOAD, kN, C *	13,13					
45	COMBINED ROD LOAD, kN, T *	12,6					
46	ROD REVERSAL, °MIN @ X-HD PIN**	195					
47	NOTE: CALCULATED AT INLET PRESSURES						
48	GIVEN ABOVE & RECOMMENDED SETTING.						
49	<input type="checkbox"/> SETTLE-OUT GAS PRESSURE						
50	(DATA REQUIRED FOR STARTING)						
51	* C = COMPRESSION		* T = TENSION		**X-HD = CROSSHEAD		
52	<b>NOTES/REMARKS:</b>						
53							



**BUSHEHR PETROCHEMICAL COMPANY  
MEG PLANT**



**MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR  
COMPRESSOR (20-C-7080)**

Contract No : 52-98/445

Owner Document Number :

Project	Area	Phase	Unit	Dis.	Doc.	Seq.
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<input type="checkbox"/> CONSTRUCTION FEATURES						
1						
2	SERVICE ITEM NO.					
3	STAGE					
4	CYLINDER SIZE (BORE DIA), mm					
5	ROD RUN-OUT: NORMAL COLD VERTICAL					
6	(per appendix C)					

<b>MATERIALS OF CONSTRUCTION</b>	
8	CYLINDER(S) DUCTILE CAST IRON
9	CYLINDER LINER(S) EN-GJL-250 (SLG)
10	PISTON(S) AlCu4PbMgMn T3
11	PISTON RINGS PTFE compaund
12	WEAR BANDS <input type="radio"/> REQUIRED
13	PISTON ROD(S): MATERIAL/YIELD, N/mm <sup>2</sup>
14	THREAD ROOT STRESS @ MACRL * @ X-HD END
15	PISTON ROD HARDNESS, BASE MATERIAL, Rc
16	PISTON ROD COATING <input type="radio"/> REQUIRED
17	COATING HARDNESS, Rc
18	VALVE SEATS / SEAT PLATE
19	VALVE SEAT MIN HARDNESS, Rc
20	VALVE GUARDS (STOPS) 79RL
21	VALVE DISCS 79RL
22	VALVE SPRINGS 79RLX
23	ROD PRESSURE PACKING RINGS NBR, 70-ShA
24	ROD PRESSURE PACKING CASE Niro (1.4305)
25	ROD PRESSURE PACKING SPRINGS -
26	SEAL / BUFFER PACKING, DISTANCE PIECE SK703 E
27	SEAL / BUFFER PACKING, INTERMEDIATE SK703 E
28	WIPER PACKING RINGS SK703 E
29	MAIN JOURNAL BEARINGS, CRANKSHAFT -
30	CONNECTING ROD BEARING, CRANKPIN -
31	CONNECTING ROD BUSHING, X-HD END G-Cu Sn 12
32	CROSSHEAD (X-HD) PIN BUSHING -
33	CROSSHEAD PIN 17Cr3 (1.7016)
34	CROSSHEAD EN-GJS-400-15
35	CROSSHEAD SHOES EN-GJS-400-15
36	CYLINDER INDICATOR VALVES (X)
37	INDICATOR CONNECTIONS ABOVE 5000 PSI
38	FLUOROCARBON SPRAYED CYLINDER (X)
39	INSTRUMENTATION IN (X) COLD SIDE
40	CONTACT W/PROCESS GAS (X) HOT SIDE
41	* MAXIMUM ALLOWABLE COMBINED ROD LOAD

USE (X) IN APPROPRIATE COLUMN WHERE APPLICABLE

COMPRESSOR CYLINDER ROD PACKING

FULL FLOATING PACKING

VENTED TO:  FLARE @ \_\_\_\_\_  ATM

SUCTION PRESSURE @ \_\_\_\_\_ (BARG)

FORCED LUBRICATED  NON-LUBE  TFE

WATER COOLED, \_\_\_\_\_ STAGE(S), \_\_\_\_\_ m<sup>3</sup>/h REQ'D

OIL COOLED, \_\_\_\_\_ STAGE(S), \_\_\_\_\_ m<sup>3</sup>/h REQ'D

WATER FILTER \_\_\_\_\_ PROV.FUTURE WATER/OIL COOLING

VENT/BUFFER GAS SEAL PACKING ARR. \_\_\_\_\_ (Ref: Appndx I FIG I-1)

CONSTANT OR  VARIABLE DISPOSAL SYSTEM

BUFFER GAS PRESSURE, \_\_\_\_\_ (BARG)

SPLASH GUARDS FOR WIPER PACKING

DISTANCE PIECE(S):  TYPE A  TYPE B  TYPE C  TYPE D

Ref: Appendix G, Fig. G-3

COVERS:  SOLID METAL  SCREEN  LOUVERED

CYLINDER COMPARTMENT:  VENTED TO amb \_\_\_\_\_ (BARG)

(Outboard Distance Piece)  PURGED AT \_\_\_\_\_ (BARG)

PRESSURIZED TO \_\_\_\_\_ (BARG)

WITH RELIEF VALVE

FRAME COMPARTMENT:  VENTED TO \_\_\_\_\_ (BARG)


(Inboard Distance Piece)  PURGED AT \_\_\_\_\_ (BARG)

PRESSURIZED TO \_\_\_\_\_ (BARG)

WITH RELIEF VALVE

DISTANCE PIECE MAWP \_\_\_\_\_ 0 \_\_\_\_\_ (BARG)

<b>OWNER:</b>  شرکت پتروشیمی بوشهر	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>	<b>CONTRACTOR:</b>  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT
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<b>MC:</b> 	<b>MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)</b>							<b>Contract No : 52-98/445</b>
<b>Project</b>	<b>Area</b>	<b>Phase</b>	<b>Unit</b>	<b>Dis.</b>	<b>Doc.</b>	<b>Seq.</b>		
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1	<input type="checkbox"/> <b>CONSTRUCTION FEATURES (CONTINUED)</b>			
2	<input type="checkbox"/> FABRICATED CYLINDER, HEADS, & CONNECTION SKETCHES FOR DESIGN REVIEW BY PURCHASER.	<input type="checkbox"/> BUFFER GAS PACKING ARR. <span style="float: right;">Ref: Appendix I</span> <input type="checkbox"/> OIL WIPER PACKING PURGE <span style="float: right;">Figures I-1, I-2 &amp; I-3</span> <input type="checkbox"/> INTERMEDIATE PARTITION PURGE INERT BUFFER PURGE GAS:      ● N <sub>2</sub> ○ OTHER _____ <input checked="" type="checkbox"/> VENT, DRAIN, PURGE PIPING BY MFG'R      ○ NO    ● YES		
7	<input checked="" type="checkbox"/> <b>COUPLING(S)</b> ○ LOW-SPEED      ○ HI-SPEED Between Compressor & Driver or Gear      Between Driver & Gear BY MANUFACTURER _____ MODEL _____ TYPE _____ API-671 APPLIES    ● YES    ○ NO	<input checked="" type="checkbox"/> <b>V-BELT DRIVE</b> DRIVEN SHEAVE      DRIVE SHEAVE (Compressor Shaft)      (Driver Shaft) RPM (EXPECTED)      400      1475 PITCH DIA. (Inches)      _____ <input checked="" type="checkbox"/> QTY & GROOVE X-SEC.      4      _____ POWER TRANSMITT'D      13      15 <span style="float: right;">Incl. Belt Losses</span> DRIVER NAMEPLATE HP RATING _____ <input type="checkbox"/> CENTER DISTANCE (INCHES) _____ <input type="checkbox"/> QTY, TYPE, X-SEC., & LENGTH BELTS _____ <input type="checkbox"/> BELT SERVICE FACTOR (RELATIVE TO DRIVER NAMEPLATE HP RATING) _____		
15	<input type="checkbox"/> <b>INSPECTION AND SHOP TESTS</b>			
16		REQ'D	WITN.	OBSER.
17	*SHOP INSPECTION	●	○	○
18	ACTUAL RUNNING CLEARANCES AND RECORDS	○	○	○
20	MFG STANDARD SHOP TESTS	●	○	○
21	CYLINDER HYDROSTATIC TEST	○	○	○
22	CYLINDER PNEUMATIC TEST	○	○	○
23	CYLINDER HELIUM LEAK TEST	○	○	○
24	CYL. JACKET WATER HYDRO TEST	○	○	○
25	*MECHANICAL RUN TEST (4 HR)	●	○	●
26	BAR-OVER TO CHECK ROD RUNOUT	○	○	○
27	*LUBE OIL CONSOLE RUN/TEST (4 HR)	●	○	●
28	*COOLING H <sub>2</sub> O CONSOLE RUN/TEST	●	○	●
29	RADIOGRAPHY BUTT WELDS	○	○	○
30	○ GAS    ○ OIL    ○ FAB CYLS.			
31	MAG PARTICLE/LIQUID	○	○	○
32	PENETRANT OF WELDS			
33	SPECIFY ADDITIONAL			
34	REQUIREMENTS (4.2.1.3)			
35	_____	○	○	○
36	QC OF INACCESSIBLE WELDS (2.14.5.2.4)	○		
37	SHOP FIT-UP OF PULSATION SUPPL. DEVICES & ALL ASSOCIATED GAS PIPING	○	○	○
41	*CLEANLINESS OF EQUIP., PIPING, & APPURTENANCES	●	○	○
43	*HARDNESS OF PARTS, WELDS & HEAT AFFECTED ZONES	○	○	○
45	*NOTIFICATION TO PURCHASER OF ANY REPAIRS TO MAJOR COMPONENTS	●	●	
48	SOUND LEVEL TEST	●	○	○
49	DISMANTLING INSPECTION	○	○	○
50	*SPECIFIC REQUIREMENTS TO BE DEFINED, FOR EXAMPLE, DISMANTLING, AUX EQUIPMENT OPERATIONAL & RUN TESTS.			
53	APPENDIX K COMPLIANCE:      ○ VENDOR    ○ PURCHASER			
54	NOTE: - INSPECTION AND TESTING SHALL BE AS PER SCOPE OF INSPECTION SHEETS ATTACHED TO MATERIAL REQUISITION.			
55				

15	<input checked="" type="checkbox"/> <b>CYLINDER LUBRICATION</b>			
16	<input checked="" type="checkbox"/> NON-LUBE      _____      STAGE(S)/SERVICE <input type="checkbox"/> LUBRICATED      _____      STAGE(S)/SERVICE TYPE OF LUBE OIL:      ○ SYNTHETIC _____ ○ HYDROCARBON _____ LUBRICATOR      □ COMP. CRANKSHAFT, DIRECT DRIVE BY:      □ CHAIN, FROM CRANKSHAFT □ ELECTRIC MOTOR □ OTHER _____ <input type="checkbox"/> LUBRICATOR MFR      _____ <input type="checkbox"/> MODEL      _____ TYPE LUBRICATOR:      ○ SINGLE PLUNGER PER POINT (2.13)      ○ DIVIDER BLOCKS _____ <input type="checkbox"/> COMPART'MT, TOTAL QTY. _____ <input type="checkbox"/> PLUNGERS (PUMPS), TOTAL QTY. _____ <input type="checkbox"/> SPARE PLUNGERS, QTY. _____ <input type="checkbox"/> SPARE COMPART'MT W/OUT PLUNGERS _____ <input type="checkbox"/> HEATERS:      ○ ELECTRIC W/THERM.(S)      ○ STEAM			

15	<input checked="" type="checkbox"/> <b>ESTIMATED WEIGHTS AND NOMINAL DIMENSIONS</b>			
16	<input type="checkbox"/> TOTAL COMPR. WT, LESS DRIVER & GEAR _____ kg <input checked="" type="checkbox"/> WT, OF COMPLETE UNIT, (LESS CONSOLES)      3000      kg <input type="checkbox"/> MAXIMUM ERECTION WEIGHT _____ kg <input checked="" type="checkbox"/> MAXIMUM MAINTENANCE WEIGHT      211      kg <input checked="" type="checkbox"/> DRIVER WEIGHT/GEAR WEIGHT      /      211      kg <input type="checkbox"/> LUBE OIL/COOLING H <sub>2</sub> O CONS.      /      _____      kg <input type="checkbox"/> FREE STANDING PANEL _____ SPACE REQUIREMENTS-mm:      LENGTH      WIDTH      HEIGHT <input type="checkbox"/> COMPLETE UNIT      _____ <input type="checkbox"/> LUBE OIL CONSOLE      _____ <input type="checkbox"/> COOLING H <sub>2</sub> O CONSOLE      _____ <input type="checkbox"/> FREE STANDING PANEL      _____ <input type="checkbox"/> PISTON ROD REMOVAL DIST.      _____ OTHER EQUIPMENT SHIPPED LOOSE (DEFINE) <input type="checkbox"/> PULSATION SUPP., WEIGHT      _____      70      kg <input type="checkbox"/> PIPING      _____      50      kg <input type="checkbox"/> INTERSTAGE EQUIPMENT      _____      _____      kg			

**OWNER:**



شرکت پتروشیمی بوشهر  
BUPC

**BUSHEHR PETROCHEMICAL COMPANY  
MEG PLANT**

**CONTRACTOR:**



Chagalesh-Enerchimi-Steam  
Joint Venture  
BUPC-MEG PLANT PROJECT

**MC:**



شرکت سست و مهندسی پتروشیمی  
SSTI

**MECHANICAL DATA SHEET FOR EMERGENCY  
INSTRUMENT AIR COMPRESSOR (20-C-7080)**

**Contract No : 52-98/445**

**Owner Document Number :**

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**UTILITY CONSUMPTION**

**ELECTRIC MOTORS**

	NAMEPLATE HP (kW)	LOCKED ROTOR AMPS	FULL LOAD AMPS
◆ MAIN DRIVER	15	239	28,5
◇ MAIN LUBE OIL PUMP			
◇ AUX LUBE OIL PUMP			
◇ MAIN COOLING WATER PUMP			
◇ AUX COOLING WATER PUMP			
◇ ROD PACKING COOLING PUMP			
◇ CYLINDER LUBRICATOR			

**ELECTRIC HEATERS**

	WATTS	VOLTS	HERTZ
◆ FRAME OIL HEATER(S)	TBC	110	50
◇ COOLING WATER HEATER(S)			
◇ CYL. LUBRICATOR HEATER(S)			
◇ MAIN DRIVER SPACE HEATER(S)			

**STEAM-NOT APPLICABLE**

	FLOW	PRESSURE	TEMPERATURE	BACK PRESSURE
◇ MAIN DRIVER	kg/h @	(BARG) (kPa)	°CTT TO	(BARG) (kPa)
◇ FRAME OIL HEATER(S)	kg/h @	(BARG) (kPa)	°CTT TO	(BARG) (kPa)
◇ CYL. LUB. HEATER(S)	kg/h @	(BARG) (kPa)	°CTT TO	(BARG) (kPa)
	kg/h @	(BARG) (kPa)	°CTT TO	(BARG) (kPa)
	kg/h @	(BARG) (kPa)	°CTT TO	(BARG) (kPa)

**COOLING WATER REQUIREMENTS-(NOTE 9)**

	FLOW m³/h	INLET TEMP °C	OUTLET TEMP °C	INLET PRESS (BARG)	OUTLET PRESS (BARG)	MAX PRESS (BARG)
□ CYLINDER JACKETS						
◆ INTERCOOLER(S)	1,7	35	45	4,5	3,5	6
◇ AFTERCOOLER						
◇ FRAME LUBE OIL COOLER						
◇ ROD PRESSURE PACKING*						
◆ CYLINDER COOLANT CONSOLE	0,90	35	45	4,5	3,5	6
◆ TOTAL QUANTITY, m³/h	2,6					

49  
50  
51



**BUSHEHR PETROCHEMICAL COMPANY  
MEG PLANT**



**MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT  
AIR COMPRESSOR (20-C-7080)**

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FRAME LUBE OIL SYSTEM

**BASIC LUBE OIL SYSTEM FOR FRAME:**

REF: TYPE MAIN BEARINGS:  SPLASH (TBA)  PRESSURE (FORCED)  HEATERS REQUIRED:

**PRESSURE SYSTEM:**  MAIN OIL PUMP DRIVEN BY:  COMP. CRANKSHAFT  ELEC. W/THERMOSTAT(S)  STEAM

AUX OIL PUMP DRIVEN BY:  ELEC. MOTOR  OTHER \_\_\_\_\_

HAND OPERATED PRE-LUBE PUMP FOR STARTING  OPERATIONAL TEST & 4 HOUR MECH RUN TEST

API-614 LUBE SYSTEM:  NO  YES  CHECK VALVE ON MAIN PUMP

CONTINUOUS FLOW THROUGH OIL (7.7.2.5)

**SEP. CONSOLE FOR PRESS. LUBE SYS:**  ONE CONSOLE FOR EA. COMP.  ONE CONSOLE FOR \_\_\_\_\_ COMPRESSORS

CONSOLE TO BE OF DECK PLATE TYPE CONSTRUCTION SUITABLE FOR MULTI-POINT SUPPORT AND GROUTING WITH GROUT & VENT HOLES.

ELECTRICAL CLASSIFICATION : ZONE 2 , GROUP IIB CLASS \_\_\_\_\_ T3  NON-HAZARDOUS

**BASIC SYS. REQ'MTS (NORM. OIL FLOWS & VOLUMES)**

LUBE OIL	FLOW m <sup>3</sup> /h	PRESSURE (BARG)	VISCOSITY cst @ 40°C	SUMP VOLUME m <sup>3</sup>
<input type="checkbox"/> COMPRESSOR FRAME	_____	_____	_____	_____
<input type="checkbox"/> DRIVER	_____	_____	_____	_____
<input type="checkbox"/> GEAR	_____	_____	_____	_____
<input type="checkbox"/> SYSTEM PRESSURES:				
<input type="checkbox"/> DESIGN _____ (BARG)		<input type="checkbox"/> HYDROTEST _____ (BARG)		
<input type="checkbox"/> PRESSURE CONTROL VALVE SETTING _____ VTS (BARG)		<input type="checkbox"/> PUMP RELIEF VALVE(S) SET _____ (BARG)		

**PIPING MATERIALS:**

	CARBON STEEL	STAINLESS STEEL WITH SS FLANGES	STAINLESS STEEL WITH CARBON STEEL FLANGES
<input checked="" type="radio"/> UPSTREAM OF PUMPS & FILTERS	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input checked="" type="radio"/> DOWNSTREAM OF FILTERS	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**PUMPS**

	RATED FLOW	PRESSURE (BARG)	COLD START REQ'D KW	DRIVER KW	SPEED RPM	COUPLING REQ'D	MECH. SEAL REQ'D
MAIN	NA	2,0	NA	SHAFT DRIVEN	NA	<input type="radio"/>	<input type="radio"/>
AUXILIARY	_____	_____	_____	_____	_____	<input type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> <b>PUMP CASING MATERIAL</b>							
<input type="radio"/> GUARD(S) REQ. FOR COUPLING(S):	<input type="radio"/> MAIN PUMP	<input type="radio"/> AUX PUMP	<input type="radio"/> GUARD TYPE OR CODE				
<input type="radio"/> AUXILIARY PUMP CONTROL:	<input type="radio"/> MANUAL	<input type="radio"/> AUTOMATIC	<input type="radio"/> ON-OFF-AUTO SEL. SWITCH:	<input type="radio"/> BY PURCH.	<input type="radio"/> BY MFR.		
			<input type="radio"/> WIRING TO TERMINAL BOX:	<input type="radio"/> BY PURCH.	<input type="radio"/> BY MFR.		
			<input type="radio"/> SWITCHES	<input type="radio"/> RTD'S/THERMOCOUPLES			

**COOLERS:**

SHELL & TUBE  SINGLE  DUAL W/TRANSFER VALVE  MFG'S STD.  TEMA C  TEMA R

REMOVABLE BUNDLE  WATER COOLED  AIR COOLED W/AUTO TEMP CONTROL

W/BYPASS & TEMP CONTROL VALVE:  MANUAL  AUTO  SEE SEPARATE HEAT EXCHANGER DATA SHTEET

**FILTER(S)**

SINGLE  DUAL W/TRANSFER VALVE  ASME CODE DESIGN  ASME CODE STAMPED

DESIGN PRESSURE, \_\_\_\_\_ (BARG)  Δ P CLEAN, \_\_\_\_\_ (BARG)  Δ P COLLAPSE, \_\_\_\_\_ (BARG)


MICRON RATING, \_\_\_\_\_  CARTRIDGE MATERIAL, \_\_\_\_\_  CARTRIDGE P/N \_\_\_\_\_

BONNET MATERIAL, \_\_\_\_\_  CASING MATERIAL, \_\_\_\_\_  FURN.SPARE CARTR.,QTY \_\_\_\_\_

**SYS. COMPONENT SUPP.**

	MANUFACTURER	MODEL	MANUFACTURER	MODEL
<input checked="" type="checkbox"/> MAIN PUMP	Airpack	_____	<input type="checkbox"/> OIL COOLER(S)	_____
<input type="checkbox"/> AUXILIARY PUMP	_____	_____	<input type="checkbox"/> TRANSFER VALVE(S)	_____
<input checked="" type="checkbox"/> MECHANICAL SEALS	Airpack	_____	<input type="checkbox"/> PUMP COUPLING(S)	_____
<input checked="" type="checkbox"/> ELECTRIC MOTORS	WEG	_____	<input checked="" type="checkbox"/> SUCTION STRAINER(S)	TBC
<input type="checkbox"/> STEAM TURBINES	_____	_____	<input checked="" type="checkbox"/> CHECK VALVE(S)	TBC
<input checked="" type="checkbox"/> OIL FILTER(S)	Airpack	_____	<input type="checkbox"/> _____	_____


**OWNER:**



شركت پتروشیمی بوشهر  
BUPC

**BUSHEHR PETROCHEMICAL COMPANY  
MEG PLANT**

**CONTRACTOR:**



Chagalesh-Enerchimi-Steam  
Joint Venture  
BUPC-MEG PLANT PROJECT

**MC:**



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**MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT  
AIR COMPRESSOR (20-C-7080)**

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**COOLING WATER SYSTEM**

**BASIC COOLING SYS. FOR:**      ● COMPRESSOR CYL.(S)    ○ INTERCOOLER(S)      ● AFTERCOOLER      ○ OIL COOLER(S)  
    ○ HEATERS REQ'D FOR PRE-HEATING:      ● ELEC.,W/ THERMOSTAT(S)      ○ STEAM

**PRESSURE FORCED CIRCULATING SYS:**      ● OPEN, PIPING BY:    ○ PURCH      ● MFR    ○ CLOSED, PIPING BY MFR.  
 MAIN WATER PUMP DRIVEN BY:      ○ ELEC. MOTOR      ○ STEAM TURBINE      ○ OTHER  
 AUX WATER PUMP DRIVEN BY:      ○ ELEC. MOTOR      ○ STEAM TURBINE      ○ OTHER

**SEP. CONSOLE FOR COOLING WATER SYS.:**      ○ ONE CONSOLE FOR EA. COMP.      ○ ONE CONSOLE FOR \_\_\_\_\_ COMP'RS  
    ○ CONSOLE TO BE OF DECK PLATE TYPE CONSTRUCTION SUITABLE FOR  
    MULTI-POINT SUPPORT AND GROUTING WITH GROUT & VENT HOLES.

ELECTRICAL CLASSIFICATION      ZONE 2    IIB    T3       NON-HAZARDOUS

**BASIC SYS. REQ'MTS (NORM. COOLING WATER FLOW DATA)**      ○ COOL'G WATER TO BE \_\_\_\_\_ % ETHYL'NE GLYCL    SITE

	FORCED COOL'G	THERMO SYPHON	STAND PIPE	FLOW m³/h	PRESSURE (BARG)	INLET TEMP °C	OUTLET TEMP °C	FLOW IND'TR
CYLINDER(S), _____ STAGE	●	○	○	0,9	4,5	35	45	●
CYLINDER(S), _____ STAGE	○	○	○					○
CYLINDER(S), _____ STAGE	○	○	○					○
CYLINDER(S), _____ STAGE	○	○	○					○
CYLINDER(S), _____ STAGE	○	○	○					○
CYLINDER(S), _____ STAGE	○	○	○					○
PISTON ROD PACK'G TOTAL	○							○
INTERCOOLER(S) TOTAL	○							○
AFTERCOOLER	○							○
OIL COOLER(S)	○							○
JACKET COOLER	○							○
TOTAL FLOW								

**SYS. PRESSURES:**     DESIGN, \_\_\_\_\_ (BARG) (kPa)     HYDROTEST, \_\_\_\_\_ (BARG) (kPa)     RELIEF VALVE(S), SETTING \_\_\_\_\_ PSIG

**WATER RESERVOIR:**    ◇ SIZE, \_\_\_\_\_ mm DIA X \_\_\_\_\_ mm HT.    ◇ CAPACITY \_\_\_\_\_ m    @ Normal Operating Level

◇ RESERVOIR MATERI/c.s      ◇ INTERNAL COATING, TYPE \_\_\_\_\_

○ LEVEL GAUGE    ○ LEVEL SWITCH    ○ DRAIN VALVE    ○ INSPECTION & CLEAN-OUT OPENINGS

**PUMPS: (Centrifugal Only)**    ◇ RAT'D FL'W \_\_\_\_\_ m³/h    ◇ PRESS. (BARG) \_\_\_\_\_    ◇ REQ'D kW \_\_\_\_\_    ◇ DRIVER kW \_\_\_\_\_    ◇ SPEED RPM \_\_\_\_\_    ◇ COUPLING MECH. SEAL REQ'D \_\_\_\_\_    ◇ MECH. SEAL REQ'D \_\_\_\_\_

MAIN \_\_\_\_\_    AUXILIARY \_\_\_\_\_

PUMP CASING MATERIAL (Ref 6.14.2.1.5):    MAIN PUMP \_\_\_\_\_    AUX PUMP \_\_\_\_\_

○ GUARD(S) REQ'D FOR COUP'G(S)    ○ MAIN PUMP \_\_\_\_\_    ○ AUX PUMP \_\_\_\_\_    ○ GUARD TYPE OR CODE \_\_\_\_\_

○ AUX.PUMP CONTROL:    ○ MANUAL    ○ AUTO    ○ ON-OFF-AUTO SEL. SWITCH:    ○ BY PURCH.    ○ BY MANUFACTURER  
    ○ WIRING TO TERMINAL BOX:    ○ BY PURCH.    ○ BY MANUFACTURER

**COOLING WATER HEAT EXCH.:**    ○ SHELL & TUBE    ○ SINGLE    ○ DUAL W/TRANSFER VALVE    ○ TEMA C    ○ TEMA R(API-660)

○ AIR COOLED EXCHANGER W/AUTO TEMP CONTROL (API-661 Data Sheets Attached)

○ W/BYPASS & TEM. CONTROL VALVE    ○ MANUAL    ○ AUTO    ○ LOUVERS FOR AIR EXCH.

○ SEE SEPARATE COOLER DATA SHEET FOR DETAILS; SPECIFY % GLYCOL ON BOTH SIDES OF SHELL & TUBE

SYS. COMPONENT SUPP.	MANUFACTURER	MODEL	MANUFACTURER	MODEL
◇ MAIN PUMP			◇ TEMP CONTROL VALVE(S)	
◇ AUXILIARY PUMP			◇ TRANSFER VALVE(S)	
◇ MECHANICAL SEALS			◇ PUMP COUPLING(S)	
◇ ELECTRIC MOTORS				
◇ STEAM TURBINES				

<b>OWNER:</b> 	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>	<b>CONTRACTOR:</b>  <small>Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT</small>
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<b>MC:</b> 	<b>MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)</b>
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<b>Project</b>	Area	Phase	Unit	Dis.	Doc.	Seq.	<b>Contract No : 52-98/445</b>
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**PULSATION SUPPRESSION DEVICES FOR RECIPROCATING COMPRESSORS**  
 THESE SHEETS TO BE FILLED OUT FOR EACH SERVICE AND/OR STAGE OF COMPRESSION

3 APPLICABLE TO:     PROPOSALS     PURCHASE     AS BUILT  
 4 FOR/USER    BUSHEHR PETROCHEMICAL COMPANY (BUPC)  
 5 SITE/LOCATION    ASSALUYE    AMBIENT TEMPERATURE MIN/MAX    5 / 55 °C  
 6 COMPRESSOR SERVICE    EMERGENCY INSTRUMENT AIR COMP    NUMBER OF COMPRESSORS    1 SET  
 7 COMPRESSOR MFG.    MODEL/TYPE  
 8 SUPPRESSOR MFG.  
 9 NOTE:     Ind.Data Comp.'d Purch.     By Compr/Supp.Mfg.w/Proposal     By Mfg(s) after order     By Mfg(s)/Purchaser as Applicable

**GENERAL INFORMATION APPLICABLE TO ALL SUPPRESSORS**

11 TOTAL NUMBER OF SERVICES AND/OR STAGES  
 12 TOTAL NUMBER OF COMPRESSOR CYL.    2    TOTAL NUMBER OF CRANKTHROWS    1    STROKE    mm RPM  
 13  ASME CODE DESIGN     GOVERNMENTAL CODES OF    CODE REGULATIONS APPLY  
 14  OTHER APPLICABLE PRESSURE VESSEL SPEC. OR CODE  
 15  LUBE SERVICE     NON-LUBE SERV.     NO OIL ALLOWED INTERNALLY    DRY TYPE INTER.CORR.COATING     YES     NO  
 16  RADIOGRAPHY (X-RAY OF WELDS):     NONE     SPOT     100%     IMPACT TEST     SPECIAL WELDING REQUIREMENTS  
 17  SHOP INSPECTION     WITNESS HYDROTEST     OUTDOOR STORAGE OVER 12 MONTHS     SPECIAL PAINT SPEC: BU-20-D-000-PI-SPC-409  
 18  WITNESSED     OBSERVED

**CYLINDER, GAS, OPERATING, AND SUPPRESSOR DESIGN DATA**

	SERVICE    EMERGENCY INSTRUMENT AIR COMP    STAGE NO.    2																				
<input type="checkbox"/> COMPRESSOR MANUFACTURER'S RATED CAPACITY	LBS/HR    SCFM    MMSCFD																				
<input type="checkbox"/> LINE SIDE OPERATING PRESSURE	INLET,    (BARA)    DISCHARGE,    (BARA)																				
<input type="checkbox"/> OPERATING TEMP. WITHIN SUPPRESSORS	INLET,    °C    DISCHARGE,    °C																				
<input type="checkbox"/> ALLOWABLE PRESSURE DROP THROUGH SUPPRESSORS	Δ P    (BAR) /    %    Δ P    (BAR) /    %																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:50%; color: blue;">INLET SUPPRESSOR</th> <th style="width:50%; color: blue;">DISCHARGE SUPPRESSOR</th> </tr> <tr> <td style="text-align: center;">20-DC-7080-1</td> <td style="text-align: center;">20-DC-7080-2</td> </tr> <tr> <td style="text-align: center;"> <input type="radio"/> YES <input checked="" type="radio"/> NO    /    <input type="radio"/> YES <input checked="" type="radio"/> NO         </td> <td style="text-align: center;"> <input type="radio"/> YES <input checked="" type="radio"/> NO    /    <input type="radio"/> YES <input checked="" type="radio"/> NO         </td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">(BAR) / %</td> <td style="text-align: center;">(BAR) / %</td> </tr> <tr> <td style="text-align: center;">(BAR) / %</td> <td style="text-align: center;">(BAR) / %</td> </tr> <tr> <td style="text-align: center;"> <input type="radio"/> YES    <input checked="" type="radio"/> NO         </td> <td style="text-align: center;"> <input type="radio"/> YES    <input checked="" type="radio"/> NO         </td> </tr> <tr> <td style="text-align: center;">(BAR) 13,5 @ 80 °C</td> <td style="text-align: center;">(BAR) 25 @ 210 °C</td> </tr> <tr> <td style="text-align: center;">0,3 m³</td> <td style="text-align: center;">0,3 m³</td> </tr> <tr> <td style="text-align: center;">m³</td> <td style="text-align: center;">m³</td> </tr> </table>	INLET SUPPRESSOR	DISCHARGE SUPPRESSOR	20-DC-7080-1	20-DC-7080-2	<input type="radio"/> YES <input checked="" type="radio"/> NO    / <input type="radio"/> YES <input checked="" type="radio"/> NO	<input type="radio"/> YES <input checked="" type="radio"/> NO    / <input type="radio"/> YES <input checked="" type="radio"/> NO	1	1	(BAR) / %	(BAR) / %	(BAR) / %	(BAR) / %	<input type="radio"/> YES <input checked="" type="radio"/> NO	<input type="radio"/> YES <input checked="" type="radio"/> NO	(BAR) 13,5 @ 80 °C	(BAR) 25 @ 210 °C	0,3 m³	0,3 m³	m³	m³
INLET SUPPRESSOR	DISCHARGE SUPPRESSOR																				
20-DC-7080-1	20-DC-7080-2																				
<input type="radio"/> YES <input checked="" type="radio"/> NO    / <input type="radio"/> YES <input checked="" type="radio"/> NO	<input type="radio"/> YES <input checked="" type="radio"/> NO    / <input type="radio"/> YES <input checked="" type="radio"/> NO																				
1	1																				
(BAR) / %	(BAR) / %																				
(BAR) / %	(BAR) / %																				
<input type="radio"/> YES <input checked="" type="radio"/> NO	<input type="radio"/> YES <input checked="" type="radio"/> NO																				
(BAR) 13,5 @ 80 °C	(BAR) 25 @ 210 °C																				
0,3 m³	0,3 m³																				
m³	m³																				
<input checked="" type="radio"/> SUPPRESSOR TAG NUMBER <input checked="" type="radio"/> COMBINATION INLET SUPP SEPARATOR/INTERNAL <input checked="" type="checkbox"/> NO. (QTY) OF INLET & DISCH. SUPP. PER STAGE <input type="radio"/> ALLOWABLE PEAK-PEAK PULSE @ LINE SIDE NOZZLE <input type="radio"/> ALLOWABLE PEAK-PEAK PULSE @ CYL FLANGE NOZZLE <input checked="" type="radio"/> DESIGN FOR FULL VACUUM CAPABILITY <input checked="" type="radio"/> MIN. REQ'D WORKING PRESSURE & TEMPERATURE NOTE: AFTER DESIGN, THE ACTUAL MAWP & TEMP ARE TO BE DETERMINED BASED ON THE WEAKEST COMPONENT AND STAMPED ON THE VESSEL, THE ACTUAL MAWP IS TO BE SHOWN ON PG. 14 LINE 12 AND ON THE U1A FORMS <input checked="" type="radio"/> INITIAL SIZING VOL. PER FORMULA OF 7.9.3.2 NOTE: This is a Reference <input checked="" type="checkbox"/> AS BUILT VOLUME (m³)																					

42 #2 : PULSATION DAMPING FOR INLET AND OUTLET OF EACH CYLINDER, BY VOLUME BOTTLES.  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52



**OWNER:**



شرکت پتروشیمی بوشهر

**BUSHEHR PETROCHEMICAL COMPANY  
MEG PLANT**

**CONTRACTOR:**



Chagalesh-Enerchimi-Steam  
Joint Venture  
BUPC-MEG PLANT PROJECT

**MC:**



**MECHANICAL DATA SHEET FOR EMERGENCY  
INSTRUMENT AIR COMPRESSOR (20-C-7080)**

<b>Owner Document Number :</b>	<b>Project</b>	<b>Area</b>	<b>Phase</b>	<b>Unit</b>	<b>Dis.</b>	<b>Doc.</b>	<b>Seq.</b>	<b>Contract No : 52-98/445</b>
	BU	20	VD	303	ME	DSH	75	Rev : 01 Page: 17 OF 20

INSTRUMENTATION

**PURCHASER TO FILL IN** (   ) **AFTER COMMODITY TO INDICATE:**  BY COMP. MFR.  BY PURCH.  BY OTHERS

**INSTRUMENT & CONTROL PANEL** (    ):

ONE FOR EA. UNIT  ONE COMMON TO ALL UNITS

MACHINE M'TED  FREE STANDING (OFF UNIT) /  LOCAL  REMOTE  INDOORS

PNEUMATIC  ELEC.  ELECTRONIC  HYDRAULIC  PROGRAMMABLE CONTR'L R

NEMA 7, CLASS \_\_\_\_\_, GROUP IIB \_\_\_\_\_, DIVISION \_\_\_\_\_  INTRINSICALLY SAFE (Exi)

I/S BARRIERS (    )

NEMA 4, WATERTIGHT & DUSTTIGHT  PURGED TO NFPA 496 TYPE  X  Y  Z

OTHER NEMA IP42 \_\_\_\_\_ LOW PURGE PRESS.  ALARM  SHUTDOWN

VIB. ISOLATORS  STRIP HEATERS  PURGE CONN.  EXTRA CUTOUTS

ANNUNCIATOR W/FIRST-OUT INDICATION LOCATED ON CONTROL PANEL

PURCHASER'S CONN. BROUGHT OUT TO TERMINAL BOX BY VENDOR

IP PROTECTION : IP 55 FOR LOCAL PANEL , IP 42 FOR CONTROL INDOOR PANEL.

**BUFFER GAS CONTROL PANE**  ONE FOR EA. UNIT  ONE COMMON TO ALL UNITS

INSTRUMENTATION SUITABLE FOR:  INDOORS  OUTDOORS  IP PROTECTION: IP-65  OTHER



PREFERRED INSTRUMENT SUPPLIERS, (TO BE COMPLETED BY PURCHASER), OTHERWISE MFR'S STANDARD APPLIES


PRESSURE GAUGES	MFR	as per instrument data sheets	SIZE & TYPE	as per instrument data sheets	MTL
TEMPERATURE GAUGES	MFR	as per instrument data sheets	SIZE & TYPE	as per instrument data sheets	MTL
LIQUID LEVEL GAUGES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
DIFF. PRESSURE GAUGES	MFR	as per instrument data sheets	SIZE & TYPE	as per instrument data sheets	MTL
PRESS. TRANSMITTERS	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
LIQUID LEV. TRANSMITTER	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
PRESSURE SWITCHES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
TEMPERATURE SWITCHES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
LIQUID LEVEL SWITCHES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
DIFF. PRESSURE SWITCHES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
CONTROL VALVES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
PRESSURE SAFETY VALVES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
SIGHT FLOW INDICATORS	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
VIBRATION MONITORS & EQUIP.	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
THERMOCOUPLES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
RTD'S	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
SOLENOID VALVES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
ANNUNCIATOR	MFR		MODEL & (QTY SPARE POINTS)		( )
PROGRAMMABLE CONTROLLER	MFR		TYPE		MTL
	MFR		TYPE		MTL
	MFR		TYPE		MTL

**PRESSURE GAUGE REQUIREMENTS**  LIQUID FILLED PRESSURE GAUGES:  YES  NO

FUNCTION	LOCALLY MOUNTED		PANEL MOUNTED		PROCESS GAS: INLET PRESS.	LOCALLY MOUNTED		PANEL MOUNTED	
	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )		( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )
LUBE OIL MAIN PUMP DISCHAR.	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	DISCH. PRESS. @ EA. STAGE	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )
LUBE OIL AUX. PUMP DISCHARG.	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )
LUBE OIL PRESS. AT FRAME HEADER (	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )
LUBE OIL FILTER Δ P	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )
COOLING H <sub>2</sub> O INLET HEADER	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )

**REMARKS:** \_\_\_\_\_

<b>OWNER:</b>  شرکت پتروشیمی بوشهر	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>	<b>CONTRACTOR:</b>  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT
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<b>MC:</b> 	<b>MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)</b>	<b>Contract No : 52-98/445</b>
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<b>Owner Document Number</b>	BU	20	VD	303	ME	DSH	75	Rev : 01	Page: 18 OF 20
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**INSTRUMENTATION (CONT'D)**

2	TEMPERATURE MEASUREMENT REQUIREMENTS	LOCALLY MOUNTED	PANEL MOUNTED	GAUGE W/ CAPIL'RY	THERMO CPL SYS	RTD SYS	I/S SYS
3	<b>FUNCTION</b>						
4	LUBE OIL <input type="radio"/> INLET TO <input type="radio"/> OUT OF FRAME	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	LUBE OIL <input type="radio"/> INLET TO <input type="radio"/> OUT OF COOLER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	MAIN JRNL BEARINGS (THERMOCOUPLES OR RTD'S ONLY)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	MOTOR BEARING(S) (THERMOCOUPLES OR RTD'S ONLY)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	COOLING WATER HEADER: <input checked="" type="radio"/> INLET <input checked="" type="radio"/> OUTLET	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	CYL. COOLING WATER: <input type="radio"/> INLET <input checked="" type="radio"/> OUTLET <input checked="" type="radio"/> EA. CYL	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	PROCESS GAS: <input checked="" type="radio"/> INLET <input checked="" type="radio"/> DISCH. <input type="radio"/> EACH CYL	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	PROCESS GAS: <input type="radio"/> INLET <input type="radio"/> GAS <input type="radio"/> WATER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	INTERCOOLER(S) <input type="radio"/> INLET <input type="radio"/> GAS <input type="radio"/> WATER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="radio"/> INLET <input type="radio"/> GAS <input type="radio"/> WATER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	AFTERCOOLER: <input type="radio"/> INLET <input type="radio"/> GAS <input type="radio"/> WATER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<input type="radio"/> INLET <input type="radio"/> GAS <input type="radio"/> WATER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	COOLING WATER <input type="radio"/> INLET <input type="radio"/> OUTLET/COOLED PKG CASE(S)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	PRESS. PGK CASE, CYL PIST ROD (THRM/CPLS OR RTD'S ONLY)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	COMPRESSOR VALVES <input type="radio"/> SUCT. <input type="radio"/> DISCH. TC'S OR RTD'S ONLY	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**ALARM & SHUTDOWN SWITCH REQ'MTS** NOTE: ALARM & SHUTDOWN SWITCHES SHALL BE INDIVIDUALLY SEPARATE

21	ALARM DEVICES <input checked="" type="radio"/> TRANSMITTER	ANNUNCIATION POINTS				
		ALARM		SHUTDOWN		TOTAL NO. OF POINTS
		IN PNL BY MFR	IN CTL ROOM PANEL OTH'RS	IN PNL BY MFR	IN CTL ROOM PANEL OTH'RS	
22	SHUTDOWN DEVICES <input checked="" type="radio"/> TRANSMITTER					
23						
24						
25						
26	<b>FUNCTION</b>					
27	LOW LUBE OIL PRESS. @ BEARING HEADER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	1
28	HIGH LUBE OIL Δ P ACROSS FILTER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
29	LOW LUBE OIL LEVEL, FRAME	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
30	AUX LUBE OIL PUMP, FAIL TO START	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
31	CYL LUBE SYSTEM PROTECTION	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
32	COMPR. VIBRATION, SHUTDOWN ONLY		( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
33	VIBRATION, W/ CONTINUOUS MONITORING	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
34	ROD DROP DETECTOR, CONTACT TYPE(1/CYL)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
35	ROD DROP PROXIMITY PROBE (1/CYL)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
36	OIL TEMP OUT OF FRAME	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
37	HIGH GAS DISCH. TEMP EACH CYLINDER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
38	HIGH JACKET WATER TEMP., EA. CYL	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
39	LOW SUCTION PRESS., FIRST STG INLET	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
40	HI DISCH. PRESS. <input type="radio"/> FINAL <input checked="" type="radio"/> EA STG	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
41	HI CYL. GAS Δ P, EACH STAGE	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
42	HI LIQ. LEV., SEPARATOR	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
43	LOW PURGE GAS PRESS, DISTANCE PIECE(S)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
44	HI X-HD PIN TEMP	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
45	PRESS PKG CASE (PISTON ROD TEMP)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
46	LOW PRESSURE COOLING WATER INLET	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	<input type="checkbox"/>	<input type="checkbox"/>	
47						<b>TOTAL NUMBER OF ANNUNCIATION POINTS</b>

48 SWITCH CONTACT OPERATION NOTE: EACH SWITCH SHALL BE MINIMUM SPDT ARRANGEMENT

49 ALARM CONTACTS SHALL:  OPEN ( DE-ENER.) TO SOUND ALARM & BE ENERGIZED WHEN COMPR. IS IN OPERATION(NORMALLY CLOSE)

50  CLOSE (ENERGIZE) TO SOUND ALARM & BE DE-ENERGIZED WHEN COMPR. IS IN OPERATION(NORMALLY OPEN)

51 SHUTDOWN CONTACTS SHALL:  OPEN ( DE-ENERGIZED) TO SHUTDOWN & BE ENERGIZE WHEN COMPR. IS IN OPERATION(NORMALLY CLOSE)

52  CLOSE (ENERGIZE) TO SHUTDOWN & BE DE-ENERGIZE WHEN COMPR. IS IN OPERATION(NORMALLY OPEN)

**OWNER:**



شرکت پتروشیمی بوشهر  
BUPC

**BUSHEHR PETROCHEMICAL COMPANY  
MEG PLANT**

**CONTRACTOR:**



Chagalesh-Enerchimi-Steam  
Joint Venture  
BUPC-MEG PLANT PROJECT

**MC:**



شرکت مهندسی پتروشیمی بوشهر

**MECHANICAL DATA SHEET FOR EMERGENCY  
INSTRUMENT AIR COMPRESSOR (20-C-7080)**

Project	Area	Phase	Unit	Dis.	Doc.	Seq.
BU	20	VD	303	ME	DSH	75

Contract No : 52-98/445  
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Owner Document Number :

INSTRUMENTATION (CONT'D)

MISCELLANEOUS INSTRUMENTATION

2					<input type="checkbox"/> INTERCLR(S)	<input type="checkbox"/> AFTERCLR	<input type="checkbox"/> OIL CLR	<input type="checkbox"/> H <sub>2</sub> O CLR
3	SIGHT FLOW IND. (COOLING H <sub>2</sub> O ONLY)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	FOR:	<input type="checkbox"/> CYL JACKET WATER	<input type="checkbox"/> ROD PRESS. PKG CASES			
4	PNEUMATIC PRESSURE TRANSMITTERS	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	FOR:					
5	PRESSURE TRANSMITTERS (ELEC. OUTP.)	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	FOR:					
6	PNEUMATIC LEVEL TRANSMITTERS	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )						
7	ALARM HORN & ACKN'LMT TEST BUTTON	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )						
8	CONDUIT & WIRING W/JUNCT. BOXES	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )						
9	TEST VALVES	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	FOR:					
10	DRAIN VALVES	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	FOR:	Coolers				
11	GAUGE GLASS(ES)	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	FOR:	Recirculating Oil,				
12	TACHOMETER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )		SPEED RANGE _____ TO _____ RPM				
13	CRANKSHAFT KEY PHASER	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	FOR:					
14	AND TRANSDUCER							
15	LEVEL GAUGE ON SUCTION SUPPRESSOR	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )						
16	OIL LEVEL SWITCH ON CRAKCASE	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )						

SEPARATE LUBE OIL CONSOLE INSTRUMENTATION: PURCH. TO LIST REQ'MTS IN ADDITION TO ANY ABOVE REQ'MTS

17		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
18		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
19		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
20		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
21		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
22		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
23		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	

SEPARATE COOLING WATER CONSOLE INSTRUMENT: PURCH. TO LIST REQ'MTS IN ADDITION TO ANY ABOVE REQ'MTS





24		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
25		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
26		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
27		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
28		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
29		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	
30		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	

RELIEF VALVES

	LOCATION	BY	MANUFACTURER	TYPE	SIZE	SETTING
33	EACH STAGE DISCHARGE	( <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )	TBC		1" / 11/2"	26 barg
34	COOLING WATER OUTLET	( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )				
35		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )				
36		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )				
37		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )				
38		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )				
39		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )				
40		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )				
41		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )				
42		( <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> )				

NOTES:  
#1 SEE MOTOR DATA SHEET FOR ADDITIONAL MOTOR INSTRUMENTATION REQUIREMENTS

43  
44  
45  
46  
47  
48  
49  
50

<b>OWNER:</b>  شرکت پتروشیمی بوشهر	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>	<b>CONTRACTOR:</b>  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT						
<b>MC:</b>   شرکت پتروشیمی بوشهر	<b>MECHANICAL DATA SHEET FOR EMERGENCY INSTRUMENT AIR COMPRESSOR (20-C-7080)</b>							<b>Contract No : 52-98/445</b>
<b>Owner Document Number :</b>	<b>Project</b> BU	<b>Area</b> 20	<b>Phase</b> VD	<b>Unit</b> 303	<b>Dis.</b> ME	<b>Doc.</b> DSH	<b>Seq.</b> 75	<b>Rev : 01</b>   <b>Page: 20 OF 20</b>

**GENERAL NOTES**

(1) COMPRESSOR STARTS BY MEANS OF A LOW-PRESSURE SWITCH ON DELIVERY PIPE AND STOPS WHEN HIGH PRESSURE IS REACHED . THE REQUIRED LOW/HIGH PRESSURE SWITCHES TO MAINTAIN THE REQUIRED DELIVERY PRESSURE SHALL BE SUPPLIED BY VENDOR . THE OPERATION IS INTERMITTENT.

(2) DELETED, VENDOR SHALL PROVIDE AFTER-COOLER .AFTERCOOLER OUTLET GAS TEMPERATURE TO BE 40 DEG C.

(3) DELETED

(4) DELETED

(5) FOR UTILITIES SUPPLY CONDITION AND CLIMATE CONDITION REFER TO "AMBIENT ,SITE CONDITION & UTILITY DATA" , (1216-DE-00-PR-ESS-101)

(6) MINIMUM METAL TEMPRATURE = 0 DEG C

(7) DELETED

(8) DEW POINT AT INLET -170 DEG C, DEW POINT AT ATM. -194.6 DEG C

9) TYPE OF COMPRESSOR : VERTICAL

(10) VENDOR ALSO SHALL PROVIDE BELOW ITEMS:  
 SPARE PARTS  
 TEMPORARY STRAINER

(11)GENERAL NOTES :

A. PROVIDE CONTACTS OPEN FOR CUMULATIVE ALARM AND CUMULATIVE SHUTDOWN .

B. PROVIDE SAFETY VALVE ON COMPRESSOR DISCHARGE ,WITH LOCKED OPEN ISOLATING VALVE .

C. PROVIDE SEPARATE INSTRUMENT FOR ALARM AND SHUTDOWN.

D. THE VENDOR TOGETHER WITH THE INSTRUMENT DOCUMENTATION MUST SUPPLY. A COMPLETE LIST OF ALL THE ALARMS AND INTERLOCKS WITH ALL SET VALUES.

E. PROVIDE A VISUAL FLOWMETER ON COOLING WATER RETURN LINE.

F. NOISE PRESSURE LEVEL AT 1 M. SHALL BE LESS THAN 80 DB(A)

(12)VENDOR SHOULD FOLLOW DOC NO.: 1216-DE-00-IN-ESS-603 FOR SPECIFICATION OF APPLICABLE INSTRUMENT.

(13)PLC PACKAGE SYSTEM (UCP) WILL BE INSTALLED IN CONTROL/AUXILIARY ROOM.  
 LOCAL PANEL INCLUDING START/STOP PUSH BUTTONS ,LAMPS AND INDICATORS, TRIP RESET PUSH BUTTON ,AMMETER AND ETC (AS PER PROJECT REQUIREMENTS) WILL BE INSTALLED IN FIELD.  
 INSTRUMENT WILL BE INSTALLED ON MACHINE OR FREE STANDING.

(14) DELETED

(15) THE CAPACITY TO BE SUPPLIED CONSIDERING NO NEGATIVE TOLERANCE. THE REQUIRED CAPACITY (NNT ) IS 1.1\*50=55 KG/H.