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| http://frunze.com.ua/wp-content/uploads/2021/02/log6.jpg | JSC «SMNPO – Engineering» | Ukraine, 40009, Sumy,  58, Gorkogo Str.,  frunze.com.ua |
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| Electrically Driven Compressor Package (EDCP) Data Sheet  for Compressor Station \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |

| No. | Parameter | Value |
| --- | --- | --- |
| 1 | Transmitted gas properties: |  |
| 1.1 | Gas composition, molar (volume)% |  |
|  | Methane (CH4 ) |  |
|  | Ethane (С2Н6 ) |  |
|  | Propane (С3Н8 ) |  |
|  | I-Bhutan (і С4Н10 ) |  |
|  | N-Bhutan (n С4Н10 ) |  |
|  | I-Pentane (і С5Н12 ) |  |
|  | N-Pentane (n С5Н12 ) |  |
|  | Hexane (С6Н14 ) |  |
|  | Nitrogen (N2 ) |  |
|  | Carbon dioxide (CO2 ) |  |
|  | Helium (Не) |  |
|  | Hydrogen sulfide (Н2S) |  |
|  | Water (Н2O) |  |
|  | Methanol |  |
| 1.2 | Content of reagents causing metal corrosion, mg/m3 |  |
| 1.3 | Gas density, kg/m3 (at t=20°С, Р=0.1013 MPa) |  |
| 1.4 | Gas calorific value, kcal/m3 (at t=20°С, Р=0.1013 MPa) |  |
| 1.5 | Gas constant, kJ/kg⋅K |  |
| 1.6 | Maximum dust content, mg/m3 (at t=20°С, Р=0,1013 МPа) |  |
| 1.7 | Dust particles maximum size, μm |  |
| 1.8 | Maximum humidity at suction conditions |  |
| 2 | Environmental conditions: |  |
| 2.1 | Ambient air temperature at the compressor station site, °С |  |
|  | – average monthly temperature: |  |
|  | January |  |
|  | February |  |
|  | March |  |
|  | April |  |
|  | May |  |
|  | June |  |
|  | July |  |
|  | August |  |
|  | September |  |
|  | October |  |
|  | November |  |
|  | December |  |
|  | − absolute minimum |  |
|  | – absolute maximum |  |
| 2.2 | Barometric pressure of atmospheric air at the compressor station, Pa |  |
| 2.3 | Design load:  – wind load, kPa  – snow load, kPa  – seismic load, magnitudes |  |
| 3 | EDCP Specification: |  |
| 3.1 | EDCP volumetric capacity (nominal), MCMPD, minimum  (at t=20°С, Р=0,1013 МPа) |  |
| 3.2 | Compressor inlet gas temperature and limits of its variation, К (°С) |  |
| 3.3 | Compressor gas suction pressure, MPa (abs.) |  |
| 3.4 | Compressor gas discharge pressure, MPa (abs.) |  |
| 3.5 | Compression ratio (nominal) |  |
| 4 | Electric motor specification: |  |
| 4.1 | Type (asynchronous/ synchronous) |  |
| 4.2 | Version (explosion-proof/standard) |  |
| 4.3 | Rated power, MW |  |
| 4.4 | Supply voltage (input), V (kV) |  |
| 4.5 | Rated speed, rpm |  |
| 4.6 | Speed range min./max., rpm |  |
| 4.7 | Cooling (open cycle/closed cycle) |  |
| 4.8 | Cooling method (air, liquid, combined) |  |
| 4.9 | Ingress protection rating, IPXX |  |
| 4.10 | Explosion proof rating, ЕЕх |  |
| 4.11 | Working temperature range, –/+ °С |  |
| 4.12 | Requirements for number of cold and hot starts and start-up rate |  |
| 5 | Mains power system specification: |  |
| 5.1 | Rated voltage, V (kV) |  |
| 5.2 | Voltage tolerances, +/– % |  |
| 5.3 | Frequency tolerances, +/– % |  |
| 5.4 | Rated frequency, Hz | 50 |
| 6 | **Matching transformer specification:** |  |
| 6.1 | Version/type of cooling (dry, oil) |  |
| 6.2 | Ingress protection rating, IPXX |  |
| 6.3 | Working temperature range, –/+ °С |  |
| 6.4 | Installation (in the main building of the control room, or in the container) |  |
| 7 | **Frequency converter requirements:** |  |
| 7.1 | Frequency converter type |  |
| 7.2 | Motor electric braking required or not |  |
| 7.3 | Braking power and time, MW/s |  |
| 7.4 | Cooling method (air, liquid) |  |
| 7.5 | Ingress protection rating, IPХХ |  |
| 7.6 | Working temperature range, –/+ °С |  |
| 7.7 | Installation (in the main building of the control room, or in the container) |  |
| 8 | Centrifugal compressor specification: |  |
| 8.1 | Type of seals (oil seals (OS)) or dry gas seals (DGS)) |  |
| 8.2 | Type of bearings (oil sliding bearings (OSB) or magnetic bearings (MB)) |  |
| 8.3 | Location of the compressor suction and discharge connections in the package (viewed from the drive end) |  |
| 9 | Maximum loads applied on the compressor flanges from gas pipelines: |  |
| 9.1 | − loads along the flange axis of symmetry, kgf, maximum; |  |
| 9.2 | − loads along the vertical and horizontal axes in the plane of the flange face, kgf, maximum |  |
| 9.3 | − moment about vertical and horizontal axes, kgf⋅m, maximum |  |
| 10 | Gas pipelines diameter, wall thickness and material:  − suction pipeline, mm  – discharge pipeline, mm |  |
| 11 | EDCP version: |  |
| 11.1 | EDCP units version (modular or in the building) |  |
| 11.1 | Modules type and parameters |  |
| 11.2 | Building type and parameters:  – location of the electric drive in the same room as the centrifugal compressor (without a dividing wall) or;  – location of the electric drive in different rooms with a centrifugal compressor (with a dividing wall); |  |
| 11.3 | Type of EDCP modules (or building) heating system:  – electric heaters;  – hot water;  – gas-air;  – other type |  |
| 11.4 | Package Automatic Control System recommended type |  |
| 11.4.1 | Requirements for the Automatic Control System: |  |
| 12 | Compressor anti-surge protection system type |  |
| 12.1 | The working medium used to control the anti-surge valve (ASV) (dry air or cleaned gas from the pipeline) |  |
| 12.2 | Pressure of the working medium used to control the ASV (minimum and maximum), MPa |  |
| 12.3 | Anti-surge pipeline diameter and wall thickness, mm |  |
| 12.4 | Anti-surge pipe material |  |
| 13 | ASV supply (as part of a package or as part of the compressor station) |  |
| 14 | Fire and gas detection system availability |  |
| 15 | Vibration diagnostics availability |  |
| 16 | Buffer gas treatment (in case of dry gas seals in the compressor):  – station system;  – package system |  |
| 17 | Separation air supplied by:  – station system;  – package system |  |
| 18 | Сommissioning spare parts kit availability |  |
| 19 | 2-year operation spare parts kit availability |  |
| 20 | Number of units at the compressor station (working + standby) |  |
| 21 | Additional requirements for EDCP, its units and systems |  |

Prepared by:

Approved by: