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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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| Turbo-Compressor Package (TCP) 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 ) |  |
|  | Heptane (С7Н16 ) |  |
|  | Octane (С8Н18 ) |  |
|  | Nonan (С9Н20 ) |  |
|  | Decane (С10Н22 ) |  |
|  | Nitrogen (N2 ) |  |
|  | Carbon dioxide (CO2 ) |  |
|  | Helium (Не) |  |
|  | Hydrogen sulfide (Н2S) |  |
|  | Water (Н2O) |  |
| 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 | TCP volumetric capacity (nominal), MCMPD, minimum  (at t=20°С, Р=0,1013 МPа) |  |
| 3 | Compressor inlet gas temperature and limits of its variation, K (°С) |  |
| 4 | Compressor gas suction pressure, MPa (abs.) |  |
| 5 | Compressor gas discharge pressure, MPa (abs.) |  |
| 6 | Compression ratio (nominal) |  |
| 7 | Package Automatic Control System recommended type |  |
| 8 | Compressor drive type (gas turbine or electric drive) |  |
| 9 | Centrifugal compressor specification: |  |
| 9.1 | Type of seals (oil seals (OS)) or dry gas seals (DGS)) |  |
| 9.2 | Type of bearings (oil sliding bearings (OSB) or magnetic bearings (MB)) |  |
| 9.3 | Location of the compressor suction and discharge connections in the package (viewed from the drive end) |  |
| 10 | Maximum loads applied on the compressor flanges from gas pipelines: |  |
| 10.1 | – loads along the flange axis of symmetry, kgf, maximum |  |
| 10.2 | – loads along the vertical and horizontal axes in the plane of the flange face, kgf, maximum |  |
| 10.3 | – moment about vertical and horizontal axes, kgf⋅m, maximum |  |
| 11 | Gas pipelines diameter, wall thickness and material:  – suction pipeline, mm  – discharge pipeline, mm |  |
| 12 | 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 |  |
|  | − temperature of the coldest five days |  |
|  | − absolute maximum |  |
| 13 | Barometric pressure of atmospheric air at the compressor station, Pa (or the altitude of the compressor station site above sea level, m) |  |
| 14 | Design load:  – wind load, kPa  – snow load, kPa  – seismic load, magnitudes |  |
| 15 | Air cleaning unit type (ACU) |  |
| 16 | Waste heat recovery heat exchanger capacity, MW  (if required) |  |
| 17 | Exhaust stack height, m |  |
| 17.1 | NOx content in exhaust gases, mg/m3, at 15% О2 |  |
| 17.2 | СО2 content in exhaust gases, mg/m3, at 15% О2 |  |
| 17.3 | Emissions control system (stationary or portable) |  |
| 18 | Number of units at the compressor station (working + standby) |  |
| 19 | TCP units version (modular or in the building) |  |
| 20 | Washing system availability for GTE gas-air flow duct cleaning (stationary washing unit for each TCP or mobile washing unit for a number of TCPs) |  |
| 21 | Type of TCP modules heating system (hot air discharged from the engine, electric heaters, hot water, gas-air or other type) |  |
| 22 | Compressor anti-surge protection system type |  |
| 22.1 | The working medium used to control the antisurge valve (ASV) (dry air or cleaned gas from the pipeline) |  |
| 22.2 | Pressure of the working medium used to control the ASV (minimum and maximum), MPa |  |
| 22.3 | Anti-surge pipeline diameter and wall thickness, mm |  |
| 22.4 | Anti-surge pipe material |  |
| 23 | Fire and gas detection system availability |  |
| 24 | Vibration diagnostics availability |  |
| 25 | Buffer gas treatment (in case of dry gas seals in the compressor):  – station system;  – package system |  |
| 26 | Separation air supplied by:  – station system;  – package system |  |
| 27 | Сommissioning spare parts kit availability |  |
| 28 | 2-year operation spare parts kit availability |  |
| 29 | Additional requirements for TCP, its units and systems |  |

Prepared by:

Approved by: