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Projekt/zadanie:

Tytuł opracowania:

Technical specification

Tytuł dokumentu:

Compressor for ammonia synthesis laboratory set.

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Rewizja

Data

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	Tytuł dokumentu: Compressor for ammonia synthesis laboratory set.	Strona 2	Stron 4	Rev. 0

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1. Object of the order

The subject of the purchase order is the supply of a brand new gas compressor for the NH₃ synthesis laboratory installation set.

2. Assumptions

The device is designed to be installed in a laboratory set and used to determine the activity of ammonia synthesis catalysts under real operating conditions. The device will be used to compress the syngas (synthesis mixture with the H₂/N₂ ratio = 3:1) to a maximum pressure of 20 MPa that shall be further used to supply the reactor with an ammonia synthesis catalyst.

3. Technical requirements of the subject of the purchase order


- power 3x400VAC,
- dimensions (max. length up to 3 m, max. width up to 2 m, max. height up to 2 m),
- inlet pressure - up to 0.2 MPa,
- outlet pressure – minimum 20 MPa,
- maximal efficiency of the compressor 2 Nm³/h with a possibility of continuous adjustment in the variable range of 0.5 to 2 Nm³/h,
- possibility of compression of hydrogen or a synthesis mixture with the H₂/N₂ ratio = 3:1
- compressor type - oil-free compressor (compressed gas has no contact with oil),
- need to maintain a constant pressure - not less than 120 h,
- equipped in an outlet pressure regulator made of stainless steel: the regulator with a minimum inlet pressure of 0,2 MPa and an outlet pressure of 5 to 20 MPa, made of stainless steel,
- automatic control,
- made of stainless steel,
- equipped with an electric panel suitable for work with PLC systems,
- equipped with an oil heating system enabling oil heating prior to switching on the compressor to a temperature of at least 60°C.

4. Technical requirements, regulations and standards

- motor IP55,
- suitable for use in explosion risk areas EEx e II T1/T2
- protection in the event of an uncontrolled increase of pressure,
- all elements of the device adapted for use in explosion risk areas,
- standards for noise, no more than 80 dB (A) at a distance of 1 m,
- subject of the purchase order shall comply with the existing legislation in the EU, especially concerning work safety and environmental protection.

5. Scope of supply

- the compressor with the functions and configuration described in Section 3 of this specification - one (1) set,
- a set of wear parts (at least 8 pieces each part),
- manual and the operation, maintenance and technical (with a scheme) documentation of the device in English language and preferably in Polish language in a single copy in both paper and electronic version,
- delivery of the device to the location given by the ordering party,
- assembly and launching of the device,

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- the supplier shall ensure a comprehensive training for users in so far as the operation and servicing of the device in English language and preferably in Polish language in the premises of the ordering party for 16 hours,
- declaration of conformity,
- certificate of safety / CE marking.

6. Scope of technical offer

- confirmation of the scope of delivery and meeting technical parameters and requirements of this specification,
- data sheets in an electronic version with a detailed technical specification of the device offered,
- information regarding the required electrical power and the media necessary for the device operation,
- information concerning the requirements for preparation of the installation site to ensure its proper and safe operation.