**ANNEX 4 OF INVITATION TO TENDER**

**TECHNICAL SPECIFICATIONS**

**Procurement number:** 2023/584141-1

**Subject of procurement:** Device for measuring the torsional moment of a drive

The requirements defined by the Technical Specifications represent minimum technical characteristics that the offered goods must meet and must not be changed by the tenderer.

For all items listed in the technical specifications stating the brand, norm or standards, patent, type or an origin, tenderer can offer "equaly valuable" for all defined items.

Tenderer shall complete the column "Specifications offered", defining in detail the technical specifications of offered supplies (note: tenderer fills the exact specifications of offered supplies, where applicable, while avoiding filling the columns only with the words such as "compliant" and "equivalent" or "yes").

The offered goods must meet all the requirements from the Technical specifications.

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Characteristics** | **Specification required** | **Specifications offered** |
|  | **Device for measuring the torsional moment of a drive** |  |  |
| **1.** | **Input converters** |  |  |
|  | Torque | 4 resistance measuring tapes |  |
|  | Speed | Inductive sensor |  |
|  | Vibrations | Inductive or accelerated sensor |  |
| **2.** | **Accuracy** |  |  |
|  | Torque | 1%-2% FSR |  |
|  | Speed | 0,25% - 0,50% FSR |  |
|  | Power | 1% - 2% FSR |  |
|  | Energy | 1% - 2% FSR |  |
| **3.** | **Linearity** |  |  |
|  | Torque and power | <0,10% FSR |  |
| **4.** | **Ambient temperature** |  |  |
|  | Torque and power | Inc 0 @0,02% FSR / deg.C  Inc full scale @0,02% FSR / deg.C |  |
| **5.** | **Frequency range** | DC up to 100 Hz |  |
| **6.** | **Averaging time** | 1 or 10 seconds |  |
| **7.** | **Calibration** | Automatic/on demand-manualy |  |
| **8.** | **Communication** | RS 485, RS 232C, F.O. (option)  MODBUS RTU protocol  PROFIBUS DP protocol |  |
| **9.** | **Output values display, Version 1** |  |  |
|  | Torque | LCD numerical |  |
|  | Speed, power curve | LCD numerical and graphical |  |
|  | Energy, consumption | LCD numerical |  |
|  | Vibrations | LCD numerical and graphical |  |
| **10.** | **Output values display, Version 2** |  |  |
|  | Torque | LED 5 digits |  |
|  | Speed | LED 4 digits |  |
|  | Power | LED 5 digits |  |
|  | Energy, consumption | LED 5 digits |  |
| **11.** | **TMS – DPM display** |  |  |
|  | Speed | LED 4 digits |  |
|  | Power | LED 4 digits |  |
| **12.** | **Analog outputs** |  |  |
|  | Torque | -10V ÷ +10V |  |
|  | Power, speed | 0 ÷ +10V |  |
| **13.** | **Signalization** |  |  |
|  | On | LED green |  |
|  | System error | LCD display-LED red |  |
|  | Measuring units | LCD display-LED yellow |  |
|  | Shaft selection | LCD display-LED yellow |  |
| **14.** | **System power supply** |  |  |
|  | Alternating | 220V AC or 110V AC, 50 – 60 Hz |  |
|  | Direct | 24VDC ± 20% |  |
|  | Consumption | 100 VA per shaft, extra 30 VA per shaft added |  |
| **15.** | **Mechanical workmanship** |  |  |
|  | Type device | Moving block  Stationary block  Junction box  Processor unit  Digital panel meter |  |

In , 2023 . g.

ON BEHALF OF THE TENDERER:

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(Name, surname and signature of the

authorised representative under the law)