STATE FARM MACHINERY TRAINING CUM TESTING INSTITUTE
FACULTY OF AGRICULTURAL ENGINEERING
BCKV, MOHANPUR, NADIA
WEST BENGAL-741252

From:
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16.08.2016

TENDER NOTICE

Principal Investigator, FMTTI under RKVY is inviting tenders from competent and bonafide vendors/ parties/ distributors/ dealers/agents/ manufacturers having registration of VAT for supply of following items to FARM MACHINERY TRAINING CUM TESTING INSTITUTE, Faculty of Agricultural Engg., BCKV, Mohanpur campus on or before 26th Aug, 2016, 4 P.M. as per specifications appended bellow. Quotation of equipment must include essential accessories also, like, gas cylinder, regulator, exhaust hood, computer, voltage stabilizer, UPS from branded company, in Indian Rupees only, even if the main equipment is quoted in foreign currency. Without essential accessories tender will be considered as incomplete. Quoted rates of all the equipment and items, including imported ones are must be FOR DESTINATION (up to delivery at the laboratory) and satisfactory installation and demonstration. Vendors are requested to include the cost involved in transportation from airport to laboratory, airport tax, custom duty (if applicable), etc in their quotation. However, University will provide valid DSIR and authorization certificate to the clearing agent, if required. The authority reserves the right to accept or reject any tender without showing reason. Payment will be made after satisfactory and making all complete. For any clarification the undersigned may be discussed on all working days of this Viswavidyalaya. The quotation reference No and subject must be mentioned on the top of the envelope. The quotation completed in all respect with all supporting documents should reach to the Principal Investigator, FMTTI, Faculty of Agricultural Engineering, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur-741252, Nadia, West Bengal. The quotation should reach the office of the undersigned within 26th Aug, 2016.

Dr. D.Saha
Principal Investigator, FMTTI

Copy forwarded for wide circulation to:
1. Registrar, BCKV, Mohanpur, Nadia
2. Director of Research, BCKV, Kalyani, Nadia
3. Notice Board, Dean, Faculty of Horticulture,/ Dean, Faculty of Agriculture, /Dean, Faculty of Agril. Engineering,
6. Comptroller, BCKV, Mohanpur, Nadia
7. In-charge, University Website committee, is requested to upload BCKV website
8. Office copy
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<th>Sl. No</th>
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| 1     | Torque Transducer with attachment for Draft Shaft (Rotary type Torque Sensor) | Hardenable Stainless Steel 17-4 PH construction for resistance against shock and overload. Excitation Voltage: 10 VDC- Maximum 15 VDC ;Nominal Output: 2.0 mV/ V ; Non – Linearity: < ±0.15% FSO ;Hysteresis: < ±0.1% FSO ;Input Resistance: 390 Ohms ; Output Resistance: 350 Ohms ;Insulation Resistance (50 VDC): > 1000 Mega Ohms; Cable Length (4 Core Screened) 5 Mtrs ;Non-Repeatability: < ±0.1% FSO ;Creep (30 minutes): < ±0.3% FSO ;Safe Overload: 150% OF RC ;Ultimate Overload: 200% OF RC Temp. Compensated Range: 0 to 60 Deg C Environmental Protection Class: IP65 – Gage area ;Maximum RPM / Minimum Rotational Life 2000 / 50 Million Rotations ;With all mechanical arrangement as required;Torque indicator with 0 to 10VDC / 4 – 20 mA O/P .Input : mV/V ;Ambient: 10 to 50°C.Power Supply: 230VAC, 50Hz.Power Consumption 10VA.Size: 92mm (width) x 92mm (height) panel cut out with 135mm depth. Bazel size 96mm (w) x 96mm (h) of metal box. Sensor should support below system  
**PC based Universal Measurement device for recording the various parameters**  
It will be used for measuring the various parameters when connected with the appropriate sensors like draft and pull force for tractors, paddle force, torque of various shaft and wheel location, generalized vibration, strain, displacement, temp by Thermo couple/RTD/Thermistor, Fuel consumption, Frequency/RPM, Current and voltage etc. Features :  
**Analog Channels:**  
5 analog input channels ( expandable to 100 ) ;Each channel is independent and supports : one isolated;  
3 wire or 4 wire input , or two isolated 2 – wire inputs , or Three common referenced 2 – wire inputs ;  
Two wire with common reference terminal : 15 ( expandable to 300 ) ;Two wire isolated: 10 ( expandable to 200 ) ;Three and four wire isolated: 5 ( expandable to 100) ;  
**Analog Sensors:**  
RTDs: Materials supported: Pt, Ni, Cu and Resistance range: 10 Ohm to 10K Ohm  
Thermistors: Types: YSI 400xx Series, other types and Resistance range: <10K Ohm |
Load Cell, Strain Gauge (¼, ½ & Full Bridge),
Frequency, Current & Voltage;

**Digital Channels:**
Digital Input/Outputs
8 bi-directional channels
Input Type: 8 logic level (max 20/30V)
Output Type: 4 with open drain FET (max: 30V, 100mA), 4 with logic output
Relay Output 1 latching relay, contacts (max: 30Vdc, 1A)

2. Measuring setup for draft and pull force for various implements.

- **Capacity: 10000 lb**
- Operating Temperature: -54 Deg C to 121 Deg C
- Accuracy: +/-0.1%
- Double Diaphragm Design;
- Non Linearity: +/- 0.1% full scale;
- Hysteresis: +/- 0.8% full scale;
- Non-repeatability: +/- 0.03% full scale;
- Resolution: Infinite;
- Standard Calibration: 5 Point calibration: 0%, 50%, and 100% of full scale in tension only;
- Maximum allowable load: 150% FS;
- Material: 17–4PH stainless steel;
- Temperature compensated: 15 Deg C to 71 Deg C;
- Strain Gauge Type: Bonded Foil;
- Bridge resistance: 350 Ohm;
- Shunt Calibration: Included;
- Zero balance (tolerance): +/- 1% full scale;
- Output: 0 to 10 VDC;
- Necessary power supply connectors for field operation
- Signal conditioner (internal)
- Input: 12Vdc
- Attachments for mounting various sensors to implements

- **Capacity: 2000 lb**
- Operating Temperature: -54 Deg C to 121 Deg C
- Accuracy: 0.1%
| PORTABLE DEVICE FOR EVALUATION OF NOISE EXPOSURE TO HUMAN BEING | Features:  
- Integrating sound level meter class 2 according to IEC & ANSI  
- Mass storage of data in memory: 64 Mbytes  
- Operating keys: 3 nos  
- Measurement parameter: Equivalent sound pressure level  
- Frequency Weighting: A, C & Z Complies with the EN 61672 Class 2  
- Range: Up to 140dB  
- Time weighting: Fast, Slow  
- Microphone with Pre-Amplifier  
- Resolution: 0.1dB  
- Battery operated  
Peak detector: Onset time constant < 75 micro second  
Electrical noise: Maximum:  
A 12.0; C 12.1; Z 23.1;  
AC Output: Frequency weighting: Linear;  
Sensitivity to 137 dB, and 1 Khz: 38 mV rms;  

- Double Diaphragm Design;  
- Non Linearity: +/- 0.1% full scale;  
- Hysteresis: +/- 0.8% full scale;  
- Non-repeatability: +/- 0.03% full scale;  
- Resolution: Infinite;  
- Standard Calibration: 5 Point calibration: 0%, 50%, and 100% of full scale in tension only;  
- Maximum allowable load: 150% FS;  
- Material: 17–4PH stainless steel;  
- Temperature compensated: 15 Deg C to 71 Deg C;  
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  - signal conditioner (internal)  
- Input: 12Vdc  
- Attachments for mounting various sensors to implements
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<th><strong>PC based Universal Measurement device for recoding the various parameters</strong></th>
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<td>Upper limit : 7 Vpeak, Output Impedance : 100 Ohm; Gain : 0 and 40 +/- 0,2 dB;</td>
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<td>Complies with following standard: EN 61672 class 2, EN 61260 : 95 ( A1 : 01 ) Class 2; IEC 61672 class 2, IEC 61260 : 95 ( A1 : 01 ) Class 2; <strong>Dosimetric Measurement Module Software with Sound Analysis Features. Along with Sound Calibrator</strong></td>
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<td>It will be used for measuring the various parameters when connected with the appropriate sensors like draft and pull force for tractors, paddle force, torque of various shaft and wheel location, generalized vibration, strain, displacement, temp by Thermcpuple/RTD/Thermistor, Fuel consumption, Frequency/RPM, Current and voltage etc.</td>
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<td><strong>Features :</strong> - <strong>Analog Channels :</strong> 5 analog input channels ( expandable to 100); Each channel is independent and supports: one isolated; 3 wire or 4 wire input, or two isolated 2 – wire inputs, or Three common referenced 2 – wire inputs Two wire with common reference terminal: 15 ( expandable to 300 ); Two wire isolated: 10 ( expandable to 200 ); Three and four wire isolated: 5 ( expandable to 100 ); <strong>Analog Sensors :</strong> Thermocouple: Types : B, C, D, E, G, J, K, N, R, S, T and Calibration standard: ITS-90 RTDs: Materials supported: Pt, Ni, Cu and Resistance range: 10 Ohm to 10K Ohm Thermistors: Types: YSI 400xx Series, other types and Resistance range: &lt;10K Ohm Load Cell, Strain Gauge ( ¼ , ½ &amp; Full Bridge ), Frequency, Current &amp; Voltage; <strong>Digital Channels :</strong> Digital Input/Outputs 8 bi-directional channels Input Type: 8 logic level ( max 20/30V ) Output Type: 4 with open drain FET ( max: 30V, 100mA ), 4 with logic output</td>
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Relay Output
1 latching relay, contacts (max: 30Vdc, 1A)

Alarms:
Condition: high, low, within range and outside range
Delay: optional time period for alarm response
Actions: set digital outputs, transmit message

Data Storage:
Internal Store
Capacity: approx 10,000,000 data points
Larger storage available refer to technical support
Removable USB store device (optional accessory)
Types: compatible with USB 1.1 or USB 2.0 drives, e.g. Flash drive.

Web Based Software:
Runs directly from Web Browser;
Access current data and status from any web browser.

FTP Server: Access logged data from any FTP client or web browser;
FTP Client: Automatically upload logged data direct to an FTP server;
Real-time and historical data for analysis, charts, mimics and tables, Custom pages can be defined, Download data in CSV format
An extensive range of Arithmetic, Trigonometric, Relational, Logical and Statistical functions should available.
Software capable of monitoring field data.

Measurement of force measurement of Paddy Thresher

Transducer with nominal load: 0 to 1500 N, Sensor with built-in amplifier having O/p of 0-10Vdc.
Protection: IP 65, Cable Length: 5 mtr, Accuracy class: 0.5% FS, Supply voltage: 10 to 30 VDC
Operating Temp: -10 Deg C to 50 Deg C, Dimensions (W x L x H): 50 x 70 x 27 mm

Sensor should support the system: PC based Universal Measurement device for recording the various parameters:
It will be used for measuring the various parameters when connected with the appropriate sensors like draft and pull force for tractors, paddle force, torque of various shaft and wheel location, generalized vibration, strain, displacement, temp by Thermocouple/RTD/Thermistor, Fuel consumption, Frequency/RPM, Current and voltage etc.

Features:
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- Wire inputs: Two wire with common reference terminal: 15 (expandable to 300); Two wire isolated: 10 (expandable to 200); Three and four wire isolated: 5 (expandable to 100);


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Thermistors: Types: YSI 400xx Series, other types and Resistance range: <10K Ohm

Load Cell, Strain Gauge (¼, ½ & Full Bridge), Frequency, Current & Voltage;

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<td>5</td>
<td><strong>Platform type jack</strong></td>
<td>500kg capacity</td>
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<td>6</td>
<td><strong>Hardness testing machine</strong></td>
<td>Brinell and Rockwell type For Non-conducting metals</td>
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<td>7</td>
<td><strong>Speedy soil moisture meter</strong></td>
<td>Digital</td>
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<td>8</td>
<td><strong>Grain moisture meter (0-50%)</strong></td>
<td>Digital</td>
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<tr>
<td>9</td>
<td><strong>EPSON- Ebx31, LCD projector with remote</strong></td>
<td>Brightness: 3200 Lumen and above</td>
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<td>10</td>
<td><strong>Printer cum scanner:</strong></td>
<td>HP LaserJet Pro 100 MFP M128fn All in One Laser Printer Scan Copier</td>
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<td>11</td>
<td><strong>Desktop Computer:</strong></td>
<td>iMac 21.5-inch, Core i5, 1.6GHz/8GB/1TB/Intel HD Graphics 6000 - MK142HN/A</td>
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</table>