

#### No. MME/INS/127/2018-19

Date: 29 August 2018

# **Corrigendum-1**

Ref No.: NIT No. MME/INS/127/2018-19, Dated: 02<sup>nd</sup> August 2018

**Subject**: Extension of date for submission of Bids for Supply and Installation of **Machine Protection** Scheme

1.	The date & time for submission of tenders	17.09.2018 at 1:00 P.M.
2.	Date and time of opening of tenders	17.09.2018 at 4.00 P.M.

All terms & conditions remain same.

Assistant Registrar



#### No. MME/INS/127/18-19

#### Date: 2 August 2018

## **NOTICE INVITING TENDER**

#### Subject: Supply & Installation of Machine Protection Scheme

Indian Institute of Technology (Indian School of Mines), Dhanbad invites quotations for the following to be supplied and delivered in MME Department.

S No	Full Description of items/ store	$\mathbf{Qty}$	Delivery			
1.	Supply & Installation of Machine Protection Scheme which					
	comprise of the following :-	01 Set				
i	Setup for the study of I.D.M.T. Over Current Relay.	01 No.				
	(Detailed Specification is given in Annexure – A)					
ii	Setup for the study Oven/Under Voltage Relay	01 No.				
	(Detailed Specification is given in Annexure – B)		At the Earliest /Ex-			
iii	Setup for the study of Thermal Relay & Fuse	01 No.	Stock			
	Characteristics					
	(Detailed Specification is given in Annexure – C)					
iv	Setup for the study of Single Line to Ground Fault (Earth	01 No.				
	Fault Relay)					
	(Detailed Specification is given in Annexure – D)					

#### **Tender Schedule**

Particulars	Date & Time
Tender Cost	Rs. 500.00 (Five Hundred Only)
Bid Security or Earnest Money Deposit	Rs. 11,000.00 (Eleven Thousand Only)
Last date and time for submission of tenders	17.09.2018 <del>28.08.2018</del> at 1:00 P.M.
Date and time of opening of tenders	17.09.2018 <del>28.08.2018</del> at 4.00 P.M.

- 1. You are requested to quote your lowest rates for the supply of above items in the attached format for Financial Bid (Annexure E)
- 2. You may send your representative in the office of the undersigned at the scheduled date and time of opening of tender.
- 3. Tender should be submitted in sealed cover only superscribed with Enquiry No. and due date at the following address only:

The Deputy Registrar (P&S) Indian Institute of Technology (Indian School of Mines), Dhanbad – 826 004 Jharkhand

GSTIN: 20AAAAI0686D1ZA



# भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद

धनबाद, झारखण्ड, भारत, पिन-826004

(मानव संसाधन विकास मंत्रालय, भारत सरकार के अधीन राष्ट्रीय महत्त्व का एक संस्थान)

INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD DHANBAD, JHARKHAND, INDIA, PIN-826004

(An Institute of National Importance under Ministry of H.R.D., Govt. of India)

STORES & PURCHASE SECTION Phone:(0326) 2235678 || Email : purchase@iitism.ac.in || Website : www.iitism.ac.in

#### No. MME/INS/127/18-19

#### Date: 2 August 2018

#### Terms & Conditions

- 1) The rates should be quoted for each item separately.
- 2) Conditional offer will not be accepted.
- 3) IIT (ISM) does not issue any Form 'C' or 'D' towards sales tax concessional rate. Hence, full rate of sales tax/VAT, GST applicable should be quoted.
- 4) Since IIT(ISM) Dhanbad is an Indian Institute of Technology and subject item will be used for research, hence benefit of reduced rate of GST should be considered if applicable.
- 5) *Educational discount,* if any, should be clearly mentioned.
- 6) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 7) Earnest Money Deposit (EMD) and Tender Cost : Should be submitted in form of A/C payee demand draft drawn in favor of Registrar, IIT(ISM) and payable at Dhanbad.
- 8) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 9) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **12 months**.
- 10) Each page in the bid document must be numbered properly and duly signed & sealed by the bidder on every page of the bid.
- 11) The items/ materials shall be required to be delivered at MME Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad at the risk and cost of the tenderer.
- 12) Unloading and installation shall be the complete responsibility of the supplier.
- 13) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
- 14) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 15) Successful bidders will have to submit Performance Security (PBG) in the form of Bank Guarantee as per the Purchase Order before releasing payment.
- 16) *Advance payment is not admissible*. Payment shall normally be made within 30-45 days subject to receipt and acceptance & installation of the ordered materials/items PBG and other documents.
- 17) In the event date on which the tender is opened for acceptance is declared to be a holiday, the tenders shall be deemed to remain open for acceptance till the next working day.
- 18) Please send your sealed offer by Regd. Post/ Speed Post/ Courier along with Courier receipt. Tender/ quotation will be received during IIT (ISM) working hours only (i.e. Monday to Friday). Late or delayed tenders shall be summarily rejected.
- 19) Any other information that you may like to obtain, you are free to contact IIT (ISM) before submission of tender.
- 20) IIT (ISM) reserves the right to accept and/or to reject any/ all tenders without assigning any reason.



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#### No. MME/INS/127/18-19

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<u>Annexure – A</u>

#### Technical Specification for Setup for the study of I.D.M.T. Over Current Relay.

#### Objective:

- i. To study the construction of the Relay.
- ii. To study the operating characteristics of the Relay for two time and current settings.

#### 1. I.D.M.T. Over Current Relay

i	Type		Single	Pole/Element	I.D.M.T.	Over	Current	Relay	of	Alstom
1.	турс	•	(Areva)/S	iemens/Legrand/So	chneider's/ Pro	okDv's Mał	ke			
;;	CT		5 Amp or	better						
п.	Input									
iii.	PMS	:	50% to 20	00% in step of 25%	1					
iv.	TMS	:	0.1 to 1 in	0.1 to 1 in steps of 0.1s or better						
v.	Function	:	IDMT							
vi.	Curve	:	IDMT Cu	rve of 2 secs as per	r IEC-255 or b	etter				
vii.	Faaturas		Self-powe	ered						
	reatures	·	Hand rese	et type-mechanical	flag indicator					

#### 2. Over Current Relay Set Kit

This relay setup is designed to test the over current relay with IDMT characteristics which consists of

i.	Variable Current Source 10 Amp. of AE/Siemens/ Legrand/Schneider' Make	:	1 No.
	Digital AC Ammeter 10 Amp, Micro Controller based to measure the current input in Amp. of	:	1 No.
11.	AE/Siemens/ Legrand/Schneider' Make		
iii.	Automatic Trip time measurement circuit (ATTM Circuit) is provided	:	1 No.
iv.	START Push Button is provided in ATTM Circuit	:	1 No.
v.	STOP Push Button is provided in ATTM Circuit	:	1 No.
vi.	Digital Timer is provided in ATTM Circuit to measure trip time	:	1 No.
vii.	Reset switch is provided in front panel to restart the digital stop clock	:	1 No.

#### 3. Timer Specifications

i.	Display	:	7 segment LED; Height: 0.5 inches or better
ii.	Digits	:	4 digits or better
iii.	Modes	:	Contact type, Stop watch, Pickup timer, drop off timer, Pick up/drop off timer
·	Range	:	a. Auto ranging: .0001 to 9999 secs
1v.			b. Fixed ranges: .9999, 9.999, 99.99, 999.9,9999 sec
v.	Counting	:	Direction Up
vi.	Input	:	Potential free, 3 to 30 VDC from solid state devices or better
vii.	Accuracy	:	0.05% or better
viii.	Reset	:	Front, Remote, Auto (programmable)
ix.	Sensor Supply	:	12 VD.C. (±10%) @ 30 mA (short circuit protected) or better
X.	Supply voltage	:	85 to 270 VAC/DC (AC: 50 or 60 Hz) or better
xi.	Temperature	:	Operating: 0 to 50°C Storage: -5 to 50°C or better
xii.	Humidity	:	95% RH (non-condensing) or better
xiii.	Weight	:	376 gms. or better

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- 4. All the accessories and Relays will be fitted on sheet fixed to Powder Coated M.S. box (30"x24"x10") cabinet almirah type suitable for table mounting with provision for lock and key arrangement.
- 5. Materials of all terminals should be made of brass/tinned copper
- 6. Circuit connection diagram with properly printed/painted to be provided for further reference.
- 7. Two sets of power cords and patch cords are to be provided.
- 8. The supplier may be asked for a technical discussion/demonstration before issuing the purchase order, if required.
- 9. Detailed instruction manual covering all technical/practical aspects will be provided along with softcopy.
- 10. The bidder must supply an ISO certified company's product.



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#### No. MME/INS/127/18-19

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<u>Annexure – B</u>

## Technical Specification for setup for the study of Over/Under Voltage Relay

#### **Objective:**

- i. To study the construction of relay
- ii. Test a relay in over/under voltage protection scheme for operating characteristic using voltage injection
- iii. To obtain the time & current characteristics of an over / under voltage type relay.

1.	Technical	Specifications
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i.	Relay Type	:	Over/Under Voltage Relay (Static Type) Single Pole of
			Alstom (Areva)/Siemens/Legrand/Schneider's/ ProkDv's
			Make
ii.	Terminals	:	4mm Terminals for Trip, Voltage Output and Input
iii.	Meters (Digital) Micro Controller based to	:	1 No. of AC Voltmeter (0-220V)
	measure the input of AE/Siemens/		1 No. of AC Ammeter (0-30 A)
	Legrand/ Schneider' Make		
iv.	Digital Timer	:	0001sec. to 9999sec. (Auto) (96mm x 48 mm)
v.	Voltage Injector	:	Inbuilt variable voltage injector 220V to create Fault Voltage
vi.	Indicators	:	Provided on front panel for Mains.
vii.	Switchesof AE/Siemens/ Legrand/	:	Provided on front panel for Mains, Timer Reset, Test Switch
	Schneider' Make		(ON/OFF)
viii.	Power Requirement	:	220VAC +10%, 50Hz

#### 2. Timer Specifications

i.	Display	:	7 segment LED; Height: 0.5 inches or better
ii.	Digits	:	4 digits or better
iii.	Modes	:	Contact type, Stop watch, Pickup timer, drop off timer, Pick up/drop off timer
	Range	:	a. Auto ranging: .0001 to 9999 secs
IV.			b. Fixed ranges: .9999, 9.999, 99.99, 999.9,9999 sec
v.	Counting	:	Direction Up
vi.	Input	:	Potential free, 3 to 30 VDC from solid state devices or better
vii.	Accuracy	:	0.05% or better
viii.	Reset	:	Front, Remote, Auto (programmable)
ix.	Sensor Supply	:	12 VD.C. (±10%) @ 30 mA (short circuit protected) or better
X.	Supply voltage	:	85 to 270 VAC/DC (AC: 50 or 60 Hz) or better
xi.	Temperature	:	Operating: 0 to 50°C Storage: -5 to 50°C or better
xii.	Humidity	:	95% RH (non-condensing) or better
xiii.	Weight	:	376 gms. or better

#### 3. Accessories

i. Workstation : Intel Xeon E3 processors 1240 v6 3.7 8M GT0 4C or better; Chipset: Intel C236 chipset or M: 32 GB DDR4-2400 nECC (2\*16 GB) RAM or better; Drive Controllers: Onboard 6-ATA@6 Gbps optional LSI SAS Controller or better; Hard Disk: 1x1 TB SATA HDD, 7200 ter; Optical Drive: 9.5 mm Slim SuperMulti DVD Writer or better; Graphics Card: NVIDIA 4 ter; Monitor: Display size (diagonal)-68.58 cm (27") IPS LED backlit or better; Bays: 2 x .25" or better, 2 x Internal 3.5" or better, 1 x PCI espress Gen 3x8 or better, 1 x PCI or better, All



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iii.

#### Date: 2 August 2018

ss slots should be open-ended or better; <b>Security</b> : BIOS controlled electro-mechanical in ik for the system or better; <b>Ports</b> : Front: 4 USB 3.0, 1 Headphone & Microphone, Rear: 4 3 2.0, RJ-45 Integrated Gigabit LAN, PS/2, 1 Audio Line-in, 1 Audio Line-out, 1 Microp & <b>Mouse</b> : Wireless Keyboard and Mouse or better; <b>Audio</b> : High Definition Integrated nal speaker; <b>Power Supply</b> : Minimum 900 W 90% Efficient Power Supply or better, Effication for the system model. Power supply should support standalone self-test; <b>Ch</b> y tool less chassis with handles in front & rear side. Provision for Kensington lock and red. Integrated handles on the chassis, <b>Operating System</b> : Preloaded Windows 10 Profes for workstation, <b>Additional Software</b> : The hardware vendor should supply an automatic s ce tuning and monitoring software on Windows, should be capable of showing GPU utili te offline diagnostics and asset discovery, Microsoft office 2016 for 5 years, Antivirus <b>rranty</b> : 3 years onsite parts and labor warranty for system and monitor.						
ii. Printer	<ul> <li>: JLOGY (PrintingMethod: OnDemandinkjet(Piezoelectric) or better; NozzleConfiguration: Black,90NozzlesperColorMinimum or better; DropletSize: 1.5pl,WithVariable- letTechnology or better; InkTechnology: DyeInk or better; PrintingResolution: 40DPI or better)</li> <li>(PrintingSpeedISO/IEC24734: .6Pages/minMonochrome,2.6Pages/minColor or better; peed: 15Pages/minMonochrome(plainpaper75g/m<sup>2</sup>),15Pages/minColor r75g/m<sup>2</sup>),45Secondsper10x15cmphoto(Epson PremiumGlossyPhotoPaper) or better; Colours: enta,Magenta,Yellow,LightCyan,Cyan,Black)</li> <li>IEDIAHANDLING (Numberofpapertrays: 1 or better, PaperFormats: 4,A5,A6,B5,C4(Envelope),C6(Envelope),DL(Envelope), Letter,10x15cm,13x18cm,16:9,Legal; Manual or better; OutputTrayCapacity: 50Sheets or better;</li> </ul>					

#### UPS 2kVA of Make-APC, Exide, TATA, Microtech

- 4. All the accessories and Relays will be fitted on sheet fixed to Powder Coated M.S. box (30"x24"x10") cabinet almirah type suitable for table mounting with provision for lock and key arrangement.
- 5. Materials of all terminals should be made of brass/tinned copper
- 6. Circuit connection diagram with properly printed/painted to be provided for further reference.
- 7. Two sets of power cords and patch cords are to be provided.
- 8. The supplier may be asked for a technical discussion/demonstration before issuing the purchase order, if required.
- 9. Detailed instruction manual covering all technical/practical aspects will be provided along with softcopy.
- 10. The bidder must supply an ISO certified company's product.



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#### No. MME/INS/127/18-19

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#### Annexure – C

#### Technical Specification for setup for the study of Thermal Relay & Fuse Characteristics

#### **Objective:**

- i. To study the construction of the Relay and the operating characteristics of the Relay.
- ii. To study the time-current characteristics of the given fuse.

#### 1. APPARATUS REQUIRED

i.	Thermal Relay of Alstom (Areva)/Siemens/Legrand/Schneider's/ ProkDv's Make	:	1 No.
ii.	Digital AC Voltmeter 0-300 V Micro Controller Based of AE/Siemens/Legrand/	:	1 No.
	Schneider' Make		
iii.	Digital AC Ammeter 0-10 A, Micro Controller Based of AE/Siemens/Legrand/	:	1 No.
	Schneider' Make		
iv.	Push Button	:	2
v.	Rotary Switch		
vi.	DP Isolator		
vii.	Multipoint Relay with transformer & rectifier supply	:	1 No.
viii.	1 Ph Variac of AE/Siemens/ Legrand/ Schneider' Make	:	1 No.
ix.	Loading CT of AE/Siemens/ Legrand/ Schneider' Make	:	1 No.
x.	Digital Time Totaliser	:	2 No.
xi.	Indicating Light	:	One each
xii.	Fuse Holder	:	2

#### 2. Relay Contactor Specifications

- i. 4 Pole Definite Purpose Contactor or better
- ii. 15A AC3 Rating or better
- iii. 50Hz Wide band (220-440V) Control Voltage Coil or better
- iv. Confirms to IS/IEC 60947-4-1 or better
- 3. All the accessories and Relays will be fitted on sheet fixed to Powder Coated M.S. box (30"x24"x10") cabinet almirah type suitable for table mounting with provision for lock and key arrangement.
- 4. Materials of all terminals should be made of brass/tinned copper
- 5. Circuit connection diagram with properly printed/painted to be provided for further reference.
- 6. Two sets of power cords and patch cords are to be provided.
- 7. The supplier may be asked for a technical discussion/demonstration before issuing the purchase order, if required.
- 8. Detailed instruction manual covering all technical/practical aspects will be provided along with softcopy.
- 9. The bidder must supply an ISO certified company's product.



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#### Annexure – D

# Technical Specification for setup for the study of Single Line to Ground Fault (Earth Fault Relay).

#### **Objective:**

This comes under shunt type of fault. These are the fault, which are characterized by increase in current and fall in voltage. So, for lab purpose, we will create the fault condition for our lab study purpose and correlate the practical fault current with the calculated one.

#### 1. Technical Specifications

i.	Instantaneous Earth Fault (Electro Mechanical Type) of Alstom (Areva)/Siemens/Legrand/ Schneider's/ ProkDv's Make	:	1 No.
ii.	Digital MI Voltmeter, 0-300 V Micro Controller Based of AE/Siemens/Legrand/ Schneider's Make	:	2 Nos.
iii.	Neon Lamp, 220 V	:	1 No.
iv.	DP Switch	:	
v.	Insulating Terminals	:	
vi.	Transformers Single Phase, 0.5 KVA & 1 KVA of AE/Siemens/ Legrand/ Schneider' Make	:	
vii.	Line Impedances 2 Ohms each	:	
viii.	Variable current Source, 10 Amp of AE/Siemens/ Legrand/ Schneider' Make	:	
ix.	Loading CT of AE/Siemens/ Legrand/ Schneider' Make	:	
x.	Digital Clamp on Meter of AE/Siemens/ Legrand/ Schneider' Make	:	

#### 2. Relay Specifications

2. Here's presidential			
i.	Current ratings	:	1A, 50 Hz.or better
ii.	Settings		Over current: 50 - 200% in 25% steps.
		•	Earth fault: 20 - 80% in 10% steps. 10 - 40% in 5% steps.
iii.	Resetting current	:	The relay will reset at not less than 25% of the current setting.
iv.	Operating time	:	Approximately 0.010 s. at 5 times current setting
v.	Burden	:	0.7VA at current setting

- 3. All the accessories and Relays will be fitted on sheet fixed to Powder Coated M.S. box (30"x24"x10") cabinet almirah type suitable for table mounting with provision for lock and key arrangement.
- 4. Materials of all terminals should be made of brass/tinned copper
- 5. Circuit connection diagram with properly printed/painted to be provided for further reference.
- 6. Two sets of power cords and patch cords are to be provided.
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# **Format for Financial Bid**

NIT No.: MME/INS/127/18-19

Date: 29 August 2018

Bidders Ref. No.:

GSTIN:

#### Subject: Supply & Installation of Machine Protection Scheme

Sl. No.	Full Description of Items (With HSN Code/SAC Code)	Qty.	Rate	Amount
		Packing &		
		Forward	ing (if any)	
	G		ST (if any)	
	Freight (if any)			
		Installat	ion (if any)	
Amount should be in figure as well as word			rand Total	

Note:

- 1) Price basis must be FOR IIT(ISM) Dhanbad only.
- 2) All the details must be provided as per prescribed format only.
- 3) Prices quoted by the bidders should include all local taxes, VAT, service tax, GST, HSN Code, SAC Code, livies, transportation cost and insurance costs etc. if any
- 4) All the rates must be quoted in Indian Rupees.

Date:

भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद

GSTIN: 20AAAAI0686D1ZA

Annexure - E

Date: 2 August 2018