

BHARAT HEAVY ELECTRICALS LIMITED JHANSI

TRANSFORMER ENGINEERING DEPARTMENT

FORM NO: TRE-2003A

ANNEXURE TO INDENT-CUM-ENQUIRY

P.I.NO.140690365

DTD: 11.11.2020

DESCRIPTION OF EQUIPMENT

: Managed Ethernet Switch for power grid project

CUSTOMER

: M/S. PGCIL

SPECIFICATION FOR MANAGED ETHERNET SWITCH

1. GENERAL

The system offered shall be required to interface various transformer monitoring system with SAS/DCS system. All transformer monitoring has multiple communication port such that it can interface with other system without any modification. In industry there is requirement to interface these system to SAS and for that gateways system required which convert data from various physical interface with various port to SAS/DCS supported interface.

2. TECHNICAL PARAMETERS

Ethernet switch shall capable of receiving data from different communication port and send them to one Central system. Ethernet switch shall receive data from different monitoring and control equipment associated with transformer, like FOTC, DGA, ODS, TMCTS etc. on RJ45 port or FO port as per attached typical Ethernet switch scheme (Drg.no.34696200326) and shall send signal to control room system in managed method. Physical medium shall be armored fiber optic (FO) cable for IEC 61850 LAN between Ethernet switch and SAS/DCS system.

2.1) The Ethernet switch shall be installed and operated in the substation environment. The switch shall be powered by redundant power supply and shall be suitable for operation with 24-240 volt AC/DC (suitable for universal supply).

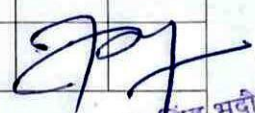
2.2) Minimum 3no. RJ45 port -100mbps and 3no. Multimute F.O.port-100mbps are required.

2.3) Ethernet switch shall be suitable for operation at ambient temp.50 degree Celsius.

2.4) **EMI/EMC and environment requirement:** The Ethernet switch to be use in substation environment shall meet the following general requirements-

a. Substation hardened for operating in temperature from -5 to 55 degree Celsius.

b. Relative humidity 20% to 90% non-condensing.

REV 00	DATE	ALT CKD	REV	DATE	ALT CKD	REV 00	NAME	SIGN	DATE
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						CKD	Vinay Bhadouria		
DWI/TCB/TRE/010									

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- c. IP 30 rating.
- d. Fanless design.
- e. EMI/ EMC and Environmental Type test requirements as per applicable clause of IEC-61000, IEC- 60255, IEC 60068 and IEC 61850 for substation environment managed Ethernet switch.
- f. EMI/ EMC and Environmental Type test reports shall be submitted by the vendor.
- g. Standard security features are applicable as required in Industrial Managed Ethernet switch for power grid substation .

3. OTHER DETAILS

3.1) Schematic and electrical connection: complete schematic showing the connection of power supply to the Ethernet switch, terminal marking and wiring termination contacts shall be furnished along offer further, type and size of terminals used in Ethernet switch shall be furnished to select suitable cable lugs.

Bidder should furnish three sets of literature, schematic diagrams, Technical Brochure, connection scheme along with the offer.

3.2) ST connector or connector define with enquiry shall be in scope of Ethernet switch supplier. For Armoured multi-mode fiber optic FO cables as to interface & integrate with SAS/C&R panel (through Ethernet switch) with conforming IEC 61850, Vendor shall quote in per meter along with their offer. (with a tentative distance of 150 mtr. appx.) . And actual length of FO cable shall be finalized as per site requirement, if required as per enquiry.

3.3) Mounting Details: DIN Rail mounting.

3.4) INSTALLATION, CONFIGURATION, TESTING AND COMMISSIONING, TRAINING AND SUPPORT SERVICES:

The scope of work include installation of the equipment at site, configuration, testing and integration with Control Centres. The vendor shall provide necessary support for integration.

3.5) Compliance checklist as per table/ format given below must to be filled up signed and submitted along with technical offer.

4. INSPECTION & DISPATCH

4.1) Three sets of inspection, routine, acceptance and calibration test reports, operation and maintenance manual, descriptive catalogue/leaflets if applicable shall be sent along with dispatch document.

4.2) The supplier shall furnish a list of all component in the dispatch details given description and quantity of each item (Quantity of each item shall be mentioned). All items shall be properly packed in wooden boxes so as to avoid scratches/damage in transit.


(निष्ठा शर्मा सिन्हा भदौरिया)
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विद्युत विभाग, जंशी
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5. COMMISSIONING & TRAINING

Commissioning & training of the system is also in the scope of supply if required. The supplier shall commission the equipment in outdoor enclosure and provide training for operation and maintenance to our ultimate customer at site on intimation of BHEL and obtain certificate from the customer for the same supplier should quote the charge for the same, if any, in the offer separately.

Table- Compliance check list

Sl. no.	Requirement	Yes/No	Deviation , if any
1	1. GENERAL		
2	2. TECHNICAL PARAMETERS		
3	3. OTHER DETAILS 3.1 3.2 3.3 3.4 3.5		
4	4. INSPECTION AND DISPATCH 4.1 4.2		
5	5. COMMISSIONING AND TRAINING		
6	Confirmation regarding inclusion of FO cable required between Ethernet switch & SAS / C&R panel in the scope of supply along with Ethernet switch if required as per enquiry.		
7	Confirmation regarding inclusion of INSTALLATION, CONFIGURATION, TESTING AND COMMISSIONING, TRAINING AND SUPPORT SERVICES: in the scope of supply along with Ethernet switch as per specification		
8	OFFERED MAKE AND MODEL IS PGCIL APPROVED (Supporting documents need to be submitted)		


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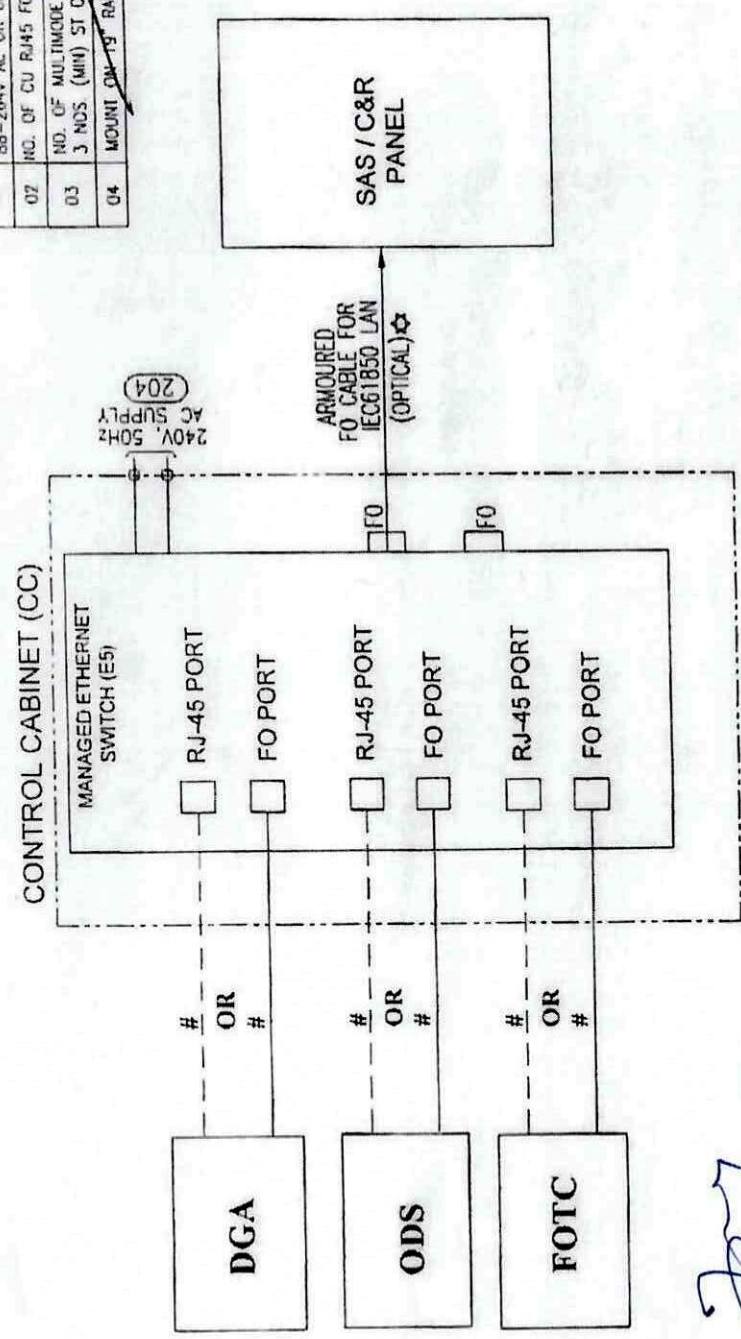
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INVENTORY NO	SIGN DATE	REF DRG NO
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NOTES:-

FO CABLE LENGTH REQUIRED TO BE CONFIRMED BY M/S POWER GRID


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 Manager, औसी
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01	POWER SUPPLY VOLTAGE- UNIVERSAL BB-264V AC OR BB- 300V DC
02	NO. OF CU RJ45 PORTS -100 mbps-3 NOS. (MIN)
03	NO. OF MULTIMODE FD PORT -100 mbps- 3 NOS (MIN) ST CONNECTOR
04	MOUNT ON 19" RACK / 19" RACK

LEGEND

- # --- ETHERNET/FO CABLES AS APPLICABLE (EQUIPMENT SUPPLIER'S ie. DGA, ODS, & FOTC SCOPE)
- ☆ --- FO CABLES AS APPLICABLE & COMMISSIONING IF REQUIRED (ETHERNET SWITCH SUPPLIER'S SCOPE)
- DGA- ONLINE DISSOLVE GAS ANALYSIS
- ODS- ONLINE DRY OUT SYSTEM
- FOTC- FIBRE OPTIC TEMPERATURE CONTROLLER

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