

General Specification of Outdoor Feeding Pillar Panel (750V AC) with 630A ACB, ZS Socket Outlet and SCADA Compatibility**1. Scope of Work**

Design, manufacture, supply, transportation, unloading, installation, testing and commissioning of Outdoor Feeding Pillar Panel fabricated from Stainless Steel SS304L/SS304, complete with:

- 1 No. 630A ACB incomer
- TP Contactor arrangement
- Copper busbar system
- Protection devices
- Metering and indication
- 500A ZS female socket outlet
- SCADA-compatible monitoring interface
- Earthing arrangement
- Civil foundation work
- All accessories and hardware

The panel shall be suitable for operation on 750V AC, 3 Phase, 50Hz system and shall be approved by Railway authorities.

2. Applicable Standards

The equipment shall conform to IS/IEC 61439-1 & 61439-2 or latest or RDSO specification /as per Railways requirements

3. System Parameters

Parameter	Requirement
System Voltage	750V AC
Frequency	50Hz
Phase	3 Phase
Installation	Outdoor
Incomer Rating	630A
Socket Rating	500A
Busbar Material	Copper
Enclosure Material	SS304L / SS304
Degree of Protection	IP65 Minimum
Ambient Temperature	Up to 55°C

Parameter	Requirement
Relative Humidity	Up to 95%

4. Enclosure Construction

Material

- Stainless Steel SS304L or SS304
- Minimum 2.0 mm thick for doors and panels
- Minimum 3.0 mm thick mounting structure/base frame

Construction Features

- Double door front access
- Weatherproof construction
- Dust proof
- Vermin proof
- Corrosion resistant
- Outdoor canopy arrangement
- Neoprene gasket sealing

Protection Class

- IP65 minimum

Surface Finish

- Hairline finish or powder coated finish as approved by Railway
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5. Incoming Circuit

Air Circuit Breaker (ACB)

Parameter	Requirement
Type	Draw-out/Motorized Fixed Type
Rating	630A
Poles	3 Pole
Breaking Capacity	Minimum 50kA
Voltage	750V AC
Protection	LSIG Protection

Protection Functions

- Long Time Protection

- Short Time Protection
 - Instantaneous Protection
 - Ground Fault Protection
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6. TP Contactor

Rating

- Suitable for 630A feeder duty
- AC-3 / AC-23 utilization category

Features

- Electrical operation
 - Mechanical endurance
 - Interlocking arrangement
 - Auxiliary contacts
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7. Busbar System

Material

- High Conductivity Electrolytic Copper

Rating

Parameter	Requirement
Continuous Current Rating	630A Minimum
Short Circuit Rating	50kA for 1 sec
Neutral Bus	Full rated
Earth Bus	Copper Earth Bus

Insulation

- Heat shrink insulated
 - Colour coded R-Y-B-N
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8. Feeder Socket Arrangement

Socket Type

- ZS Female Socket
- Industrial heavy-duty railway type

Rating

Parameter	Requirement
Current Rating	500A
Voltage	750V AC
Phase	3 Phase
Frequency	50Hz
Protection	IP65 Minimum

Features

- Mechanical locking arrangement
- Safety interlocking
- Weatherproof cover
- Touch-safe terminals

9. Metering & Instrumentation

Multifunction Meter

Parameters:

- Voltage
- Current
- Frequency
- Power Factor
- Active Power (kW)
- Reactive Power (kVAR)
- Apparent Power (kVA)
- Energy (kWh)
- Demand

Accuracy

- Class 0.5S or better

Communication

- RS485 Modbus RTU

10. Measuring Instruments

The panel shall include:

- Digital Multifunction Meter
- Ammeter
- Voltmeter
- Selector Switches
- Energy Meter

11. Indications

LED type indications:

Supply Status

- R Phase Healthy
- Y Phase Healthy
- B Phase Healthy

Breaker Status

- ACB ON
- ACB OFF
- ACB TRIP

Contactor Status

- Contactor ON
- Contactor OFF

System Status

- Socket Energized
 - SCADA Healthy
 - Control Supply Healthy
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12. Control & Protection

The panel shall include:

- Control MCBs
 - Auxiliary Relays
 - Control Transformer (if required)
 - Terminal Blocks
 - Surge Protection Device (SPD)
 - Control Wiring
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13. SCADA Compatibility

The feeding pillar shall be suitable for Railway SCADA integration.

Communication

- RS485 Modbus RTU
- Ethernet (Optional)
- Potential-free contacts

Monitoring Signals

- ACB ON/OFF/TRIP

- Contactor Status
- Voltage
- Current
- Energy Consumption
- Socket Status
- Door Open Alarm
- Common Fault Alarm

Remote Functions

- Status Monitoring
 - Alarm Monitoring
 - Energy Monitoring
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14. Earthing

Earthing Arrangement

- Two independent earthing terminals

Earth Bus

- Copper Earth Bus throughout panel

Earthing Standard

As per IS 3043 or latest or Railway site requirement.

15. Civil Foundation Work

Scope shall include:

Foundation

- RCC foundation suitable for outdoor installation
- Anchor bolts
- Grouting

Concrete Grade

- M25 RCC minimum

Additional Works

- Cable trench interface
- PCC bed
- Drainage arrangement
- Earthing pits connection

Warranty

The equipment must be guaranteed for satisfactory operation for a period of 12 month from date of installation. The equipment found defective/failed within the above warranty period shall be replaced or repaired by the firm free of cost within stipulated time specified by higher authority from Railway.

Drawings, Data and Manuals

General Arrangement Drawing, Foundation Drawing, Structural Drawing or any other required drawing must be got approved by Sr. DEE/G/ASN or AEE/G/ASN before inspection & supply of items. These Drawings should have proper spaces for signature of checking authority & approval authority. Any other relevant documents, instruction manual, specifications or data necessary for satisfactory installation, operation and maintenance to be submitted as & when required.

Inspection

1. Supply items (likes P&M items, Luminaries and any special items included in LOA having bid value more than Rs. 5,00,000/- should be inspected / tested by RITES (as per Railway Board's Circular) with firm cost at manufacturer's premises / site as decided by Railway.
2. Material supplied should be as per the description, scope and specification in the tender document. Contractor will intimate in advance for readiness of materials for inspection.
3. Manufacturers test certificates for the different test carried out should be submitted by the tenderer.

The decision of Railway Administration for inspection of supply items by RITES / Consignee by firm own cost over the matter will be final.

TEST REPORTS: Agree to provide all relevant documents Test Report / supporting document /reports etc. (from authorized government designated agency) to the buyer at the time of bidding or on demand.

DOCUMENTATION:

Detailed technical manuals, handbooks, warranty card and factory quality assurance checklist, test results and any other certifications, if any, shall be supplied along with the consignment.

Supplied manuals/handbooks must cover detailed technical specifications and installation, operation, maintenance and system safety procedures.

The receipts for taxes paid, if any, for the supplied equipment should also be submitted.

Any other relevant documents, instruction manual, specifications or data necessary for satisfactory installation, operation and maintenance to be submitted as & when required.

The description of scheduled item is indicative. Entire Electrical Work is to be done in line of relevant RDSO's or IS or PCEE/ER's specification & design, **Electrical General Service Manual ,Volume-I (Power Supply) & latest** or OEM Standardisation or equivalent international standard for detail technical specification and all other clauses, terms & conditions for design, manufacture, testing, supply, installation and commissioning followed by statutory rules and common prudence and shall confirm to the rules & regulations of Railways.**The decision of Railway Administration over the standardisation & make for execution of the work will be final.**

The eligible contractor must furnish the detail of material which is proposed to be supplied or used inevitably got approved from Sr.DEE(G)/ASN or Sr.SE/Elect/G- the Supervision-in-charge of the work or authorized representative of Sr. SE/Elect/G before commencement of work. Decision of Railway administration over the standardisation& make of all the material for the items of work schedule will be final.

PUBLIC PROCUREMENT POLICY (MAKE IN INDIA):Bidder must follow Public Procurement Policy (Make in India) Order 2017, dated 15/06/2017, issued by Department of Industrial Promotion and Policy, Ministry of Commerce, circulated vide Railway Board letter no. 2015/RS(G)/779/5 dated 03/08/2017 and 27/12/2017.The definition and calculation of local content in accordance with the Make in India policy as approved by PCEE/ER is 50% of Minimum Local Content (MLC).

NOTE:-

These technical details / general specifications are indicative only. In case of any ambiguity in the General specification or Technical Details it may be collected from Sr. DEE (G)/Asansol's office if required. All items pertaining to Electrical should confirm to relevant IS or equivalent international standard. Any deviation must be got approved by Sr.DEE/G/ASN.

Any typographical error shall not be construed to be benefit of the Contractor; In all cases the interpretation and decision of Sr.DEE/G/ASN shall be final and binding upon the contractor.

The issues not covered under these tender documents shall be governed by General Conditions of Contract April-2022 or its time to time latest amendments if any.

**Sr. Divl. Electrical Engineer (Genl.)
Eastern Railway, Asansol**