



Motor & Gear Head for 36kV GIS

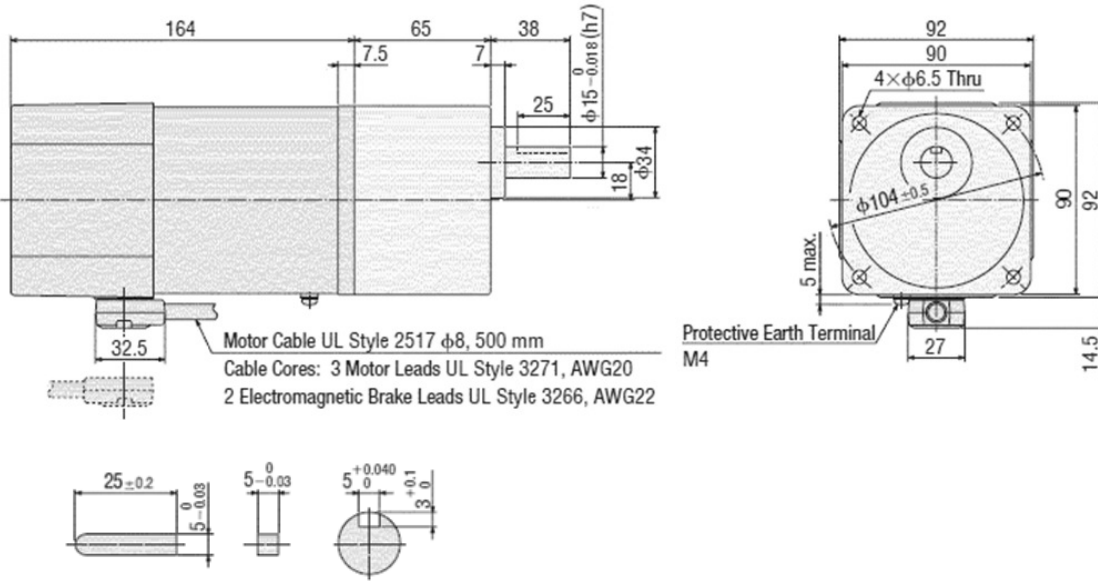
1.0 APPLICATION:

Drive for medium voltage Switchgear / isolator / ES AC Reversible motor is a capacitor run single phase induction motors used for rotating the shaft of switch modules in both clockwise and anti-clockwise directions.

Item-001: Motor as per this product standard

Item-002: Gear Head with ratio 50:1 for 33KV GIS application.

2.0 SIZE: As per shown dimensional drawing.



3.0 Specifications :

3.1 Motor Specification

- a) Type : Reversible
- b) Input Voltage : 230 V
- c) Frequency : 50 Hz
- d) Speed : 1200 r/min
- e) Output Power : 60 W
- f) Type of shaft (output) : pinion
- g) Capacitor(μ F) : 5
- h) Rated Torque(Nm) : 0.49

3.2 Gear head Specification

- a) Type : Pinion
- b) Speed(rev/min) : 50
- c) Permissible Torque : 16.2
- d) Gear Head efficiency(%) : 66

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REV.	00	PRINTS TO:-		APPROVED –		
ALTD.	AK			HRP		
APPD.	HRP			PREPARED	ISSUED	DATE
DATE.	27.04.15			AK	VD	27.04.15



PRODUCT STANDARD

SG 24310 Rev 00

SWITCHGEAR ENGINEERING DIVISION

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- 4.0 Motors shall have built-in friction brake to help instantaneous reversing characteristics.
- 5.0 The synchronous speed of the motor shall be 1200 rev/min. The actual speed shall be 2 % less than the displayed under no-load conditions.
- 6.0 Motor shall be rated for continuous maximum duty and shall have provision for a built-in thermal protection. The thermal protection shall cutoff the motor supply during overheating conditions.
- 7.0 **The supply shall include a capacitor for running and reversing the direction of rotation.** Suitable wiring diagrams pertaining to motor and capacitor shall be supplied with the offer. Insulated protective terminal cap shall be provided with capacitor.
- 8.0 The motor shall be totally enclosed in a light weight aluminum casing and shall be powder coated in black colour (dull).
- 9.0 Name plate shall be fixed on the motor indicating the following parameters :
- Type
 - Input voltage
 - Output power
 - Speed
 - Make/ Sr. No.
 - Year of manufacture etc.
- 10.0 Motor shall have pinion shaft for coupling to the gear head.
- 11.0 Motors should comply IP20 for pollution performance.
- 12.0 Motors shall comply class B (130 °C) insulation class.
- 13.0 GEAR HEAD :**
- 13.1 Gear heads with spur gears and gear ratio 50:1
- 13.2 Gear heads should have female input socket suitable for coupling to motor pinion shaft.
- 13.3 Gear heads shall have parallel shaft for output with key slot.
- 14.0 Gear head shall be enclosed in a light weight aluminum casing with black powder coating (similar to motor). Necessary bolts (4 nos.) for tightening the gear head to motor shall be provided by the supplier.
- 15.0 STANDARDS :**
- 15.1 Motors and gear heads shall comply either/all UL, CSA and EN/IEC , IS 996 and shall comply safety standards specified by VDE.
- 15.2 Motors and gear head shall couple efficiently without any backlash etc.



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16.0 TEST REQUIREMENTS

16.1 Following tests shall be conducted at supplier's works:

TYPE TESTS

Type tests as per clause 15.3.2 of IS: 996-1979 for the first supply at independent test lab. Subsequently type tests at an interval of four years.

16.2 ROUTINE TESTS

Following Routine tests as per clause 15.4.2 of IS:996-1979 on each motor being supplied shall be done

- (a) No-load current power input and speed at rated voltage and rated frequency (for ac motor only).
- (b) Insulation resistance test.
- (c) High voltage test.

Three copies of certificates shall be supplied along with consignment giving the following information.

- BHEL Order No.
- Manufacturer's/Supplier's Name.
- Batch/Lot No.
- Sizes and Quantity Supplied.

17.0 QA PLAN

QA Plan shall be submitted along with offer & got approved. This shall include tests & measurements on raw material, semi finished / finished products and details of manufacturing process followed including tools, jigs & fixtures /gauges used at different stages to ensure quality of end product.

18.0 ACCEPTANCE CRITERION

Supplier shall furnish routine and acceptance test report as per approved QA Plan and dimensional report as per approved drawing along with each lot supplies.

19.0 GUARANTEE CERTIFICATE:

The component shall be guaranteed against all manufacturing defects. Guarantee certificate shall be furnished along with the supply, against defective material and performance.

20.0 PACKING :

The Motors shall be packed in high density cardboard boxes, with a primary wrapped in polyethylene and packed individually in dust free boxes.

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