PURCHASE SPECIFICATION

FOR

AC REGULATING TRANSFORMER

FOR

OIL RIG APPLICATIONS

SPECIFICATION NO.	:	OR 12036
REVISION NO.	:	Rev 07
DATE	:	7.5.12

PREPARED BY	CHECKED BY	APPROVED BY
Sanjay Ahirwar	Rajesh Agrawal	Dipak Sarma
Manager	Sr Manager (CEE)	AGM (CEE)

ISSUED BY

CONTROL EQUIPMENT ENGINEERING DIVISION
BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL

GENERAL SPECIFICATIONS FOR AC REGULATING TRANSFORMER FOR OIL RIGS APPLICATION

1.0 SCOPE :

This specification applies to the requirement of 50 Hz 3Ph to 6Ph, AC Regulating transformer, primarily intended for indoor oil rig application for salt laden 95% humid atmospheric environment at 50 deg C ambient.

2.0 Technical parameters

Applicable standard	IS 3156 Part 1 & 2
No. of Phases	Primary : 3 Phase delta connected Secondary : 6 Phase star connected with Neutral
Primary	Item - 1 600 VAC +/- 7%, 50 Hz +/- 3% Item - 2 660 VAC +/- 7%, 50 Hz +/- 3%
Secondary Voltage	120 VAC (P-N), 6 Phase star connected with neutral. Irms Current rating 1.2A per phase.
Accuracy Class	1.0 as per IS 3156
Insulation class	H
Temperature Rise allowed	<75 deg C
Cooling	Natural air cooled.
Core Type	R-Core/EI Core (CRGO)
Efficiency	Better than 95%
Construction	Open frame with mounting feet, varnished, vacuum impregnated, epoxy dip. Mark the terminals with numbers mentioned above on side & top. Also mark : AC REGULATING TRANSFORMER

	Complete winding on each limb shall be covered with non-inflammable insulating material. Terminals to be suitable for 2x1.5 sqmm wire. Screw type terminals to be provided. "DEGSON" DG78 series terminals are recommended. Finger touch proof type.
Dimensions	180mm(H) x 250mm(L) x 115mm(D)max Mounting feet 250mm (L) x 115mm(D) Mounting slots of size 6.5 x 12 mm Mounting slots to be located on base frame at 134 mm (along L) x 95 mm (along D) Ref : sketch for details.
Terminations Numbering	As shown in sketch Primary and secondary terminals to be numbered as per numbers given in bracket against each voltage terminal.
Markings on transformer	AC Regulating Transformer Item 1 : 600 V : 120V AC Style Code : BP9048093120 Item 2 : 660 V : 120V AC Style Code : OE4468847573

3.0 Tests

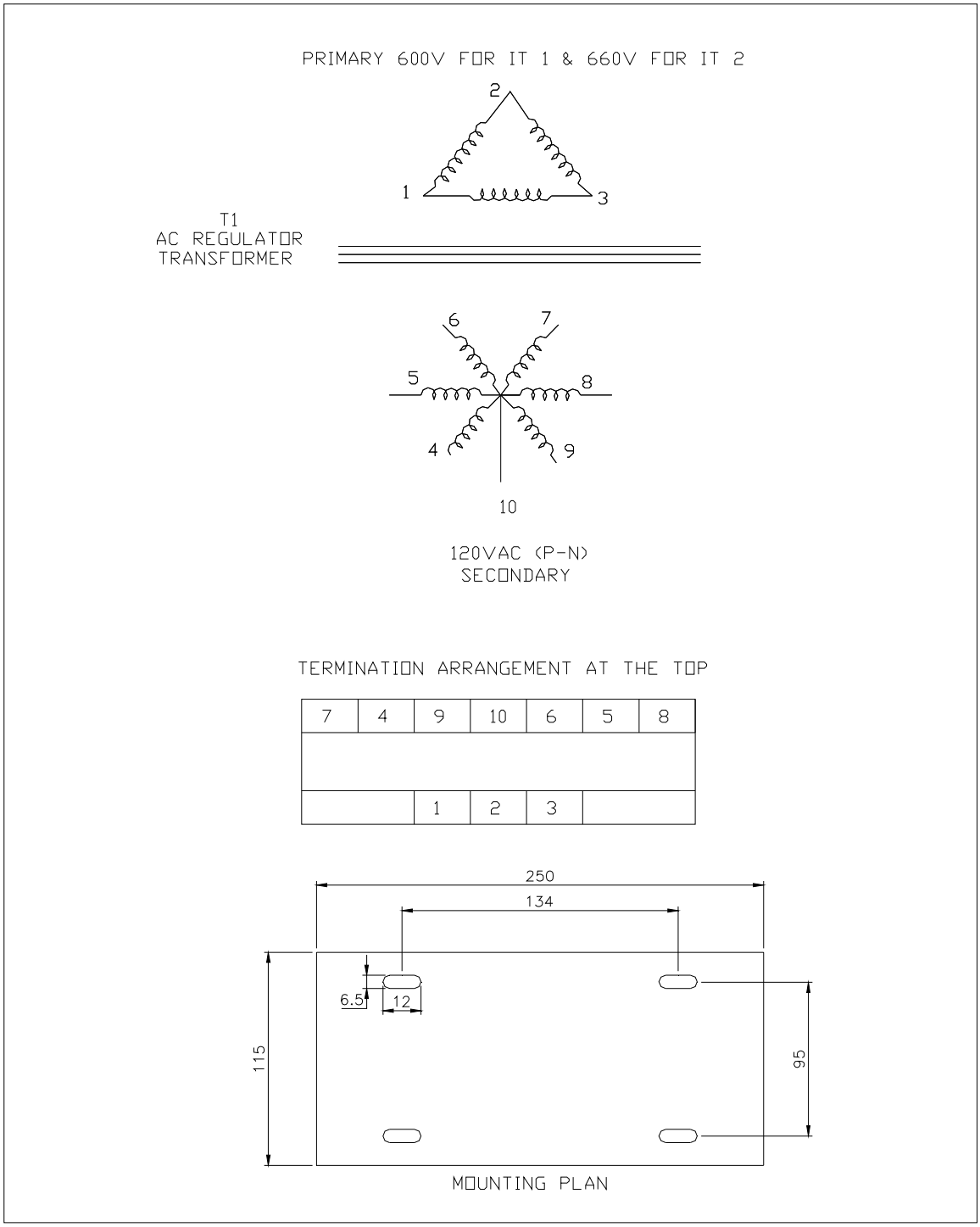
Following acceptance tests to be conducted on each transformer before dispatch by supplier at their premises. Refer applicable standard for tests method.

Acceptance tests

i) Transformer Ratio Test.
ii) Winding Resistance Test.
iii) Phase sequence test for Secondary winding : Test with dual channel oscilloscope or any other acceptable method for correct phase sequence of 6 phase secondary winding to the delta connected primary winding. Secondary phase Phases should match with primary phases. Also check for 60 deg phase difference between secondary phases as per terminals shown.
iv) Accuracy Class test (On first unit of each PO).
v) Short Circuit Withstand capability test (On first unit of each PO)
vi) Temperature rise test (On first unit of each PO).
vii) Dielectric test at 3 KV AC rms 50 Hz for One Minute between primary and secondary winding (with each winding separately) & between shorted windings and frame.

1.0 Documents required along with consignment

i) Test reports - 3 copies



Item 1 : 600 : 120V - Style Code : BP9048093120
Item 2 : 660 : 120V - Style Code : OE4468847573