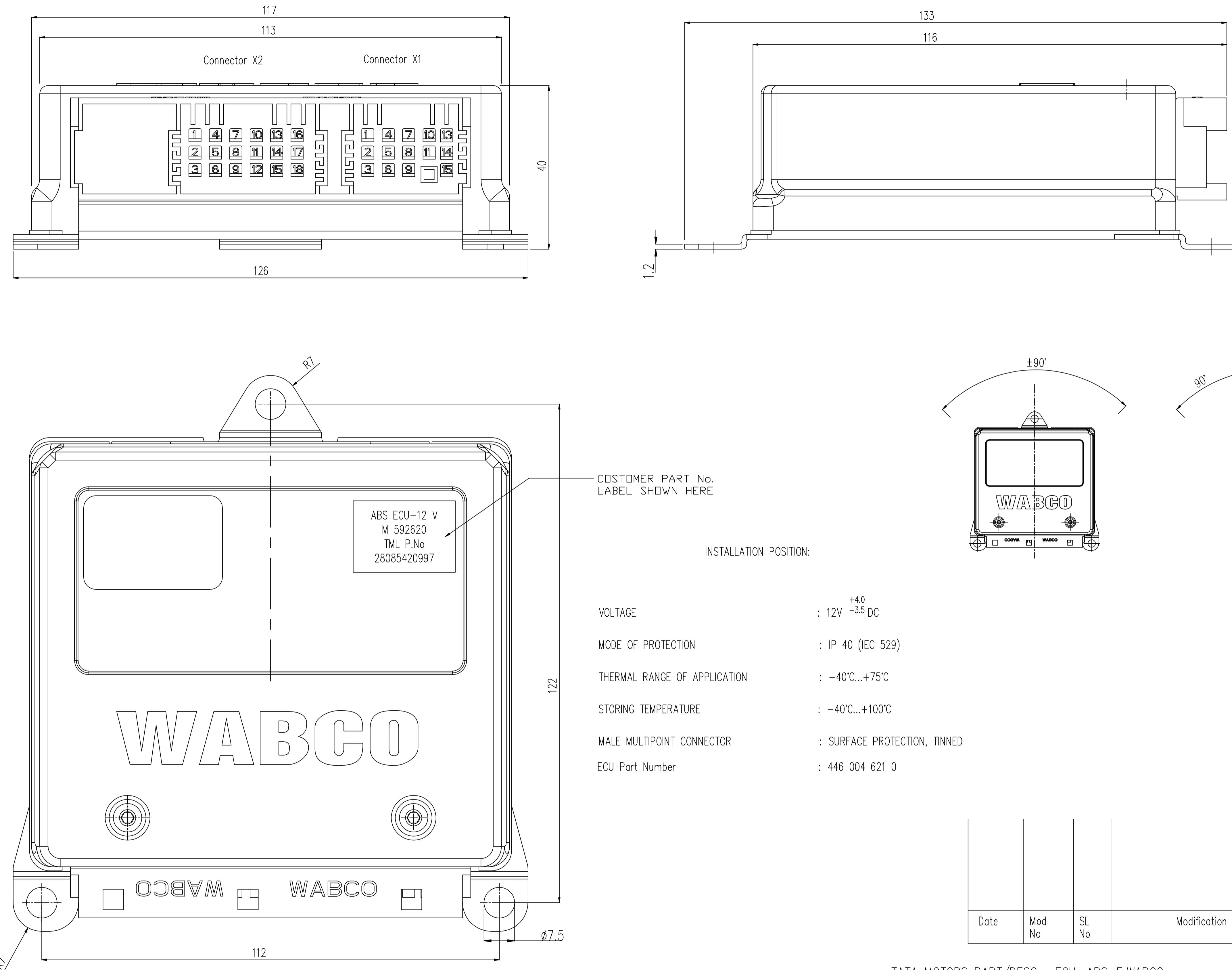


| | | |
|--|----------|----------|
| PART No. | M 592620 | GA |
| ENGINEERING CHANGES | | |
| ECN No. | DATE | REV SIGN |
| 10259 | 06.07.06 | New RBS |
| 10447 | 27.10.06 | 1 RBS |
| ECU Part No. added. | | |
| 10889 | 31.01.08 | 2 RBS |
| Drawing pictorially modified inline with label. Drawing redrawn. | | |
| 12083 | 16.03.11 | 3 RBS |
| Drawing template WABCO was WABCO-TVS (India) Ltd. Drawing redrawn. | | |

DO NOT SCALE IF IN DOUBT ASK



VOLTAGE : 12V ^{+4.0} _{-3.5} DC

MODE OF PROTECTION : IP 40 (IEC 529)

THERMAL RANGE OF APPLICATION : -40°C...+75°C

STORING TEMPERATURE : -40°C...+100°C

MALE MULTIPONT CONNECTOR : SURFACE PROTECTION, TINNED

ECU Part Number : 446 004 621 0

| Date | Mod No | SL No | Modification | D0 | CHK | APP |
|------|--------|-------|--------------|----|-----|-----|
| | | | | | | |

TATA MOTORS PART/DESC : ECU, ABS-E,WABCO

TATA MOTORS PART NO :

| | | | | |
|----------------|-------------------------------|--|--|----------------------------|
| SCALE 2 : 1 | ELECTRONIC CONTROL UNIT | | | PART No. M 592620 GA |
| | ABS-E BASIC 4S/4M 12V,KWP2000 | | | |

AMBATTUR, CHENNAI - 600058, INDIA

WABCO

SHEET 1 OF 3

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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN mm
REMOVE BURRS AND SHARP EDGES FROM FINISHED PARTS
ALL DIMENSIONS ARE AFTER SURFACE PROTECTION / TREATMENT
MALE THREAD TO IS 14962 (Part 3) 6h : 2001
FEMALE THREAD TO IS 14962 (Part 3) 6H : 2001

| GENERAL TOLERANCES | | | | |
|---|------|-------|-------|---------------------------------|
| RANGE OF NOMINAL DIMENSIONS (± mm) | | | | |
| ≤ 50 | > 50 | > 180 | > 400 | FORCE, POWER, PRESSURE etc., |
| 1 | 2 | 3 | 4 | (± %) |
| | | | 3 | 10 |
| 100 mm | | | | |

| | | | |
|---------------------------------|----------|-----|------|
| PART No. M 592620 | | | |
| ENGINEERING CHANGES | | | GA |
| ECN No. | DATE | REV | SIGN |
| 10259 | 06.07.06 | New | RBS |
| 10447 | 27.10.06 | 1 | RBS |
| Ref sheet 1. | | | |
| 12083 | 16.03.11 | 2 | RBS |
| Revision details refer sheet 1. | | | |

Technical Data:-

Housing

The ECU housing consists of steel. The printed circuit board is fastened on the bottom plate by screws and is protected by a cover, which closes the housing like a shell. The cover is fastened by screws.

Dimensions and mounting

The dimensions of the ECU housing as well as the recommended position of installation can be found on the outline drawing (code 605).

Weight of the ECU

max. 400 g

Marking

The ECU is marked in accordance with JED341.

Connector Plugs

The electronic control unit is connected via the following harness connector plugs.

| | Connector plug | AMP -no. |
|----|------------------|------------|
| X1 | 14 pin connector | 1355206-1 |
| X2 | 18 pin connector | 1-967624-1 |

The contact surfaces must be tinned.

Attention: The contacts pin 9 and pin 15 of the 14 pin connector have to be special partial gold plated contacts. The AMP number for selected gold plated terminal is 927768-9(1.0-2.5mm²)

| S.No | Terminal Description | AMP -no. | Used in |
|------|---|-------------|---|
| 1 | Tin plated terminal (1.5mm ² to 2.5mm ²) | 0-0927768-3 | Modulator valve harness & power harness |
| 2 | Tin plated terminal (0.5mm ² to 1.0mm ²) | 0-0927771-3 | Sensor harness |
| 3 | Selected gold plated terminal | 0-0927768-9 | Central ground in Power harness |

The plug connectors are not specified by WABCO. The declaration of part numbers from the connector manufacturer is only a non-binding support for the construction of the cable harness.

ELECTRICAL SPECIFICATIONS:-

General

Unless otherwise noted the values of the electrical specification are valid for room temperature (25° C).

All inputs and outputs are protected against short circuit to ground or to battery voltage.

Assuming correct system wiring no current will flow through the modulator valve solenoids should the supply voltage be reversed.

| Power supply | | | |
|--------------|-----|------|---|
| connector | pin | name | remarks |
| X1 | 4 | GND | ECU-GND |
| | 7 | UECU | ECU supply voltage. |
| | 8 | UB | supply voltage for the A1 and A2 valves |
| | 9 | GND2 | second GND for warning lamp |

● CRITICAL
● MAJOR
NO SYMBOL - MINOR

| | | |
|-----------|-----------------|--------------------|
| XVI | STEEL | NO TREATMENT |
| XVII | CAST IRON | PLATED |
| XVIII | STEEL | ZINC-IRON PLATED |
| XIX | CAST IRON | NO TREATMENT |
| XII | ZINC ALLOY | ANODISED |
| XII | PLASTIC | NO TREATMENT |
| XI | RUBBER | NO TREATMENT |
| X | STAINLESS STEEL | NO TREATMENT |
| IX | BRASS | NO TREATMENT |
| VIII | ZINC ALLOY | CHROMATED |
| VII | ALUMINUM ALLOY | ANODISED |
| VI | ALUMINUM ALLOY | CHROMATED |
| V | CAST IRON | PAINTED |
| IV | STEEL | POWDER COATED |
| III | STEEL | PAINTED |
| II | STEEL | PHOSPHATED |
| I | STEEL | ZINC PLATED |
| Part Code | MATERIAL | SURFACE PROTECTION |

The ECU housing consists of steel. The printed circuit board is fastened on the bottom plate by screws and is protected by a cover, which closes the housing like a shell. The cover is fastened by screws.

DO NOT SCALE IF IN DOUBT ASK

| Symbol | Definition | min | typ | max | Unit |
|------------------|---|-----|-----|------------|------|
| $U_{ECU,UB}$ | ECU supply voltage *) | | 12 | 16 | V |
| $U_{ECU,UB}$ max | max. DC supply voltage for 1h (Tu = 25°C) ABS and ATC functions not available | | | 36 | V |
| $U_{lowthres}$ | low voltage threshold **) | 8.5 | 9 | 9.5 | V |
| $U_{ovthres}$ | overvoltage threshold ***) | | 16 | | V |
| U_{rip} | alternator ripple at supply voltage 50 Hz - 10 kHz sinusoidal, $U_B = 24$ V | | | ±1.5 | V |
| U_{rev} | voltage of reverse polarity | | | $-U_{Bat}$ | V |
| I_E | ECU supply current at U_{ECU} and U_B together at nominal supply voltage (ABS inactive) ****) | | | 500 | mA |
| $I_{PC,UB}$ | peak current during ABS-function at U_{ECU} , U_B all valves activated. | | | 24 | A |

*) The electronic fails safe by destroying the external fuses caused by an irreversible internal overvoltage protection released by supply voltage >36V.

**) All functions based on valve control will be switched off on a time basis.

Depending on the voltage demanded by solenoid valves a higher voltage may be necessary before the ECU can activate the internal relays.

***) Over voltage is detected with a delay to prevent fault detection in case of pulse conditions.

****) The supply current does not include current due to loads (lamps and relays) connected to the ECU. After switch on an additional current pulse flows to load an input capacitor.

| Connector Pin Details | | | |
|-----------------------|-----|----------|------------------|
| connector | pin | name | remarks |
| X2 | 1 | FR-MV-EV | FR- MV- Inlet |
| | 2 | RL-MV-EV | RL- MV-Inlet |
| | 3 | FL-MV-EV | FL- MV- Inlet |
| | 4 | FR-MV-AV | FR- MV- Outlet |
| | 5 | RL-MV-AV | RL- MV- Outlet |
| | 6 | FL-MV-AV | FL- MV- Outlet |
| | 8 | RR-MV-EV | RR- MV- Inlet |
| | 9 | RR-MV-AV | RR- MV- Outlet |
| | 10 | FR-IGM | FR sensor ground |
| | 11 | RL-IGM | RL sensor ground |
| | 12 | FL-IGM | FL sensor ground |
| | 13 | FR-IG | FR sensor Input |
| | 14 | RL-IG | RL Sensor Input |
| | 15 | FL-IG | FL sensor Input |
| | 17 | RR-IGM | RR Sensor ground |
| | 18 | RR-IG | RR Sensor Input |

PERMISSIBLE CONDITIONS OF USE

ENVIRONMENTAL CONDITIONS

| Temperature range | | | |
|-------------------|-----|------|---|
| | min | max | Unit |
| operating temp. | -40 | +75 | °C |
| | | | 50 mm separation from parts effecting air circulation. Min. air speed 0.2 m/sec. Should this condition not be fulfilled, it is alternately acceptable that the surface temperature of the housing may be +75°C max. |
| storage temp. | -40 | +90 | °C |
| | -40 | +100 | °C |
| | | | 2h max. |

| Connector Pin Details | | | |
|-----------------------|-----|--------|---|
| connector | pin | name | remarks |
| X1 | 4 | GND | ECU-GND |
| | 7 | UECU | ECU supply voltage. |
| | 8 | U_B | supply voltage for the A1 and A2 valves |
| | 9 | GND2 | second GND for warning lamp |
| | 10 | K Line | K Line for diagnostics |
| | 14 | DBR | Third brake relay connection |
| | 15 | WL | Warning lamp connection |

| Date | Mod No | SL No | Modification | DO | CHK | APP |
|------|--------|-------|--------------|----|-----|-----|
| | | | | | | |

TATA MOTORS PART/DESC : ECU, ABS-E,WABCO

TATA MOTORS PART NO :

| | | |
|----------------|-------------------------|----------------------|
| SCALE 2 : 1 | ELECTRONIC CONTROL UNIT | PART No. M 592620 |
| | | |

AMBATTUR, CHENNAI - 600058, INDIA

ABS-E BASIC 4S/4M 12V,KWP2000

SHEET 2 OF 3

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GENERAL TOLERANCES
RANGE OF NOMINAL DIMENSIONS
(\pm mm)
MALE THREAD TO IS 14962 (Part 3) 6h : 2001
FEMALE THREAD TO IS 14962 (Part 3) 6h : 2001

SCALE
2 : 1
ELECTRONIC CONTROL UNIT
PART No.
M 592620
GA
ABS-E BASIC 4S/4M 12V,KWP2000
SHEET 2 OF 3

