AT series Tachometers/Tachourmeters
ATVC12/24-REV voltage converters

yi6434
2nd March 2007
catalogue section 20

Product Advisory Note:
Risk of damage with 24 VDC systems

Overview

Murphy UK has identified a potential failure of AT series tachometers when used with ATVC12/24-REV (sleeved resistor type) voltage converter and 24 VDC power supplies. The following Murphy UK-supplied equipment is affected:-

Models	Date
ATA, ATS tachometers ATHA, ATHS tachourmeters	07-Aug-06 or later
ATVC12/24-REV	Any (i.e. Feb 2006 or later)

The AT series date code is labelled on the top side of the case, as shown right.

Equipment supplied before the dates above is not affected.

Technical details

All AT series tachometers are designed for 12V DC operation, but can be used with 24 VDC systems by the addition of a rear-facia mounted voltage converter. For equipment supplied by Murphy UK, this 24V to 12V converter has been in the form of either a circuit board (model ref. ATVC12/24, in use before February 2006), or a sleeved resistor network (model ref. ATVC12/24-REV, in use after Feb 2006).

Items at risk of failure

A risk of permanent tachometer failure occurs when ATVC12/24-REV (sleeved resistor networks) are used with AT series tachometers date coded 07-Aug-06 or later.

On AT series tachometers made before 7th Aug 2006, the rear facia right-hand stud was used for physical mounting only (it was isolated from the internal electronics). This stud was therefore used as a convenient connector between a 24 VDC supply and ATVC12/24-REV (sleeved resistor network).

However, on AT series tachometers with date code 07-Aug-06 or later, the rear facia right-hand stud is internally connected to the tachometer electronics, which may be damaged by connection of 24 VDC. As a result, the ATVC12/24-REV (sleeved resistor network) **MUST NOT** be used with any AT series tachometer having date code 07-Aug-06 or later.

Items NOT at risk

- Any AT series tachometer correctly connected for 12V use.
- AT series tachometers/tachourmeters with date codes earlier than 07-Aug-06. These are compatible with any variant of Murphy ATVC12/24(-REV) voltage convertor, allowing safe use on 24 VDC systems.
- ATVC12/24 circuit boards supplied by Murphy UK before Feb 2006. These present no risk of damage, since they provide a separate stud terminal for 24 VDC connection.
- ATVC12/24 circuit boards (part number 20.70.0176) supplied by Murphy USA (any date). These circuit boards use a slightly different design to UK models, but also have a separate 24VDC connection stud. This model will become the Murphy UK standard 24V to 12V voltage converter from March 2007.

Corrective action

Immediate solution

If short-term operation must be maintained, ATVC12/24-REV sleeved resistor networks must be modified as follows:-

1) Isolate the 24VDC supply
2) Unscrew the AT series right-hand terminal nut, and disconnect the two ring terminals (one each for the 24VDC supply wiring and ATVC12/24-REV). Remove both ring terminals and replace with insulated, mating connectors (e.g. insulated bullet connectors)
3) Reconnect the 24VDC supply wiring directly to the ATVC12/24-REV. Ensure that the AT series right-hand stud is electrically isolated, and that the mounting clamp remains firmly in place.
4) Power-up and check operation.

cont.

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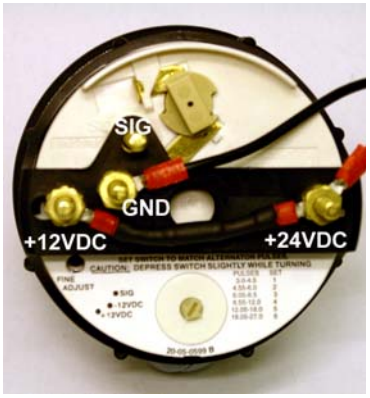
Permanent solution

Murphy UK will replace any ATVC12/24-REV with the latest circuit board based voltage converter, part number 20.70.0176.

This can be fitted as follows:-

1) at the AT series rear-facia, unscrew and remove the lower three stud terminal nuts, i.e. all nuts except the upper-most SIG (signal) terminal.

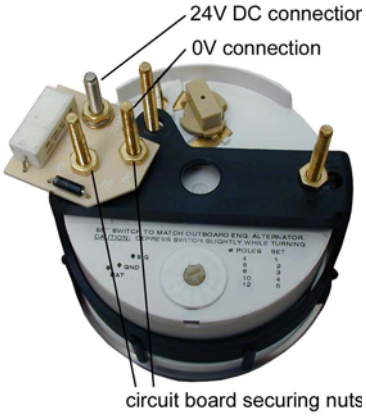


2) Remove the +24 VDC and GND (0V) power supply wiring, and the ATVC12/24-REV sleeved resistor.

3) Add a terminal nut (supplied with 20.70.0176) to the GND (0V) stud, screwing down the nut to be flush with the panel securing clamp.

4) add circuit board 20.70.0176, securing this using nuts on the 12V and 0V (GND) terminals

5) connect the 24 VDC supply wiring to the 24V stud terminal provided on circuit board 20.70.0176.



Full details of AT series and ATVC (20.70.0176) installation can be found in document 00-02-0258, available from **www.fwmurphy.co.uk/products**

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