

## TY346/GRP01 - GERT8035 & TEE/E/81/R/39 ALARM & LED INDICATOR

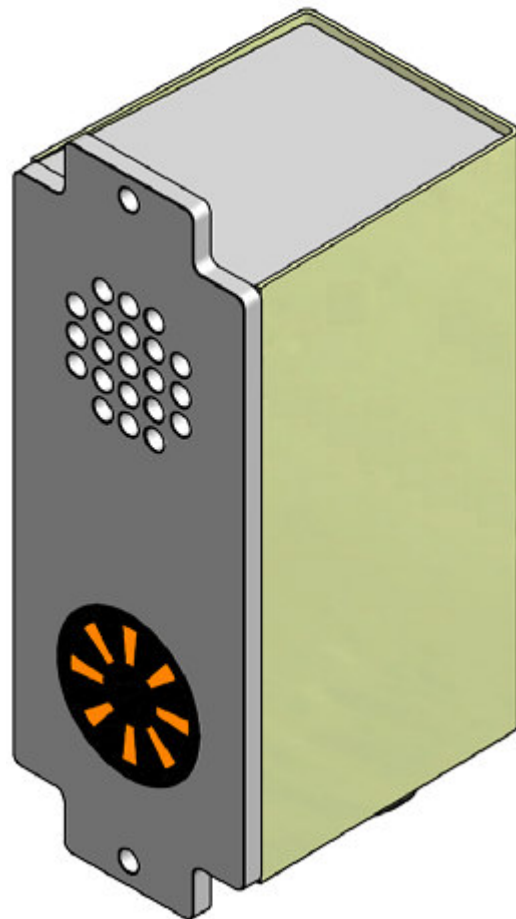
### Product Description.

The TY346 Alarm and LED indicator is a direct plug and play upgrade for TY191/GRP01, TY191/GRP05 Alarm and electromechanical indicators used in trainbourne AWS and TPWS systems.

Offering high reliability, the TY346 has an electronic LED sunflower indicator and a solid state proving contact is included for reliable, low resistance switching. A miniature bi-stable relay provides indicator status memory and on the TY346/GRP02 unit, OTMR and indicator power off (IPOFR) outputs are included.

### STSm Rail AWS/TPWS Products.

- Fully interchangeable with existing electromechanical units .
- Quick and easy installation.
- High visibility LED sunflower indicator.
- Solid state proving contact.
- High reliability.
- Integrated sound generator for clear and warning alarms.
- Meets GE/RT8035 and TEE/E/81/R/39.
- Interfleet ICP (Independent Competent Person) T27371 letter of assurance.



STSm Rail Catalogue Number	BR Catalogue Number	Description	Specifications
<b>TY346/GRP01</b>	TBA	Alarm & LED Indicator. Plug and play upgrade for TY191/GRP01 & TY191/GRP05	GERT8035 & TEE/E/81/R/39
<b>TY346/GRP02</b>	TBA	Alarm & LED Indicator with OTMR and IPOFR outputs.	GERT8035 & TEE/E/81/R/39

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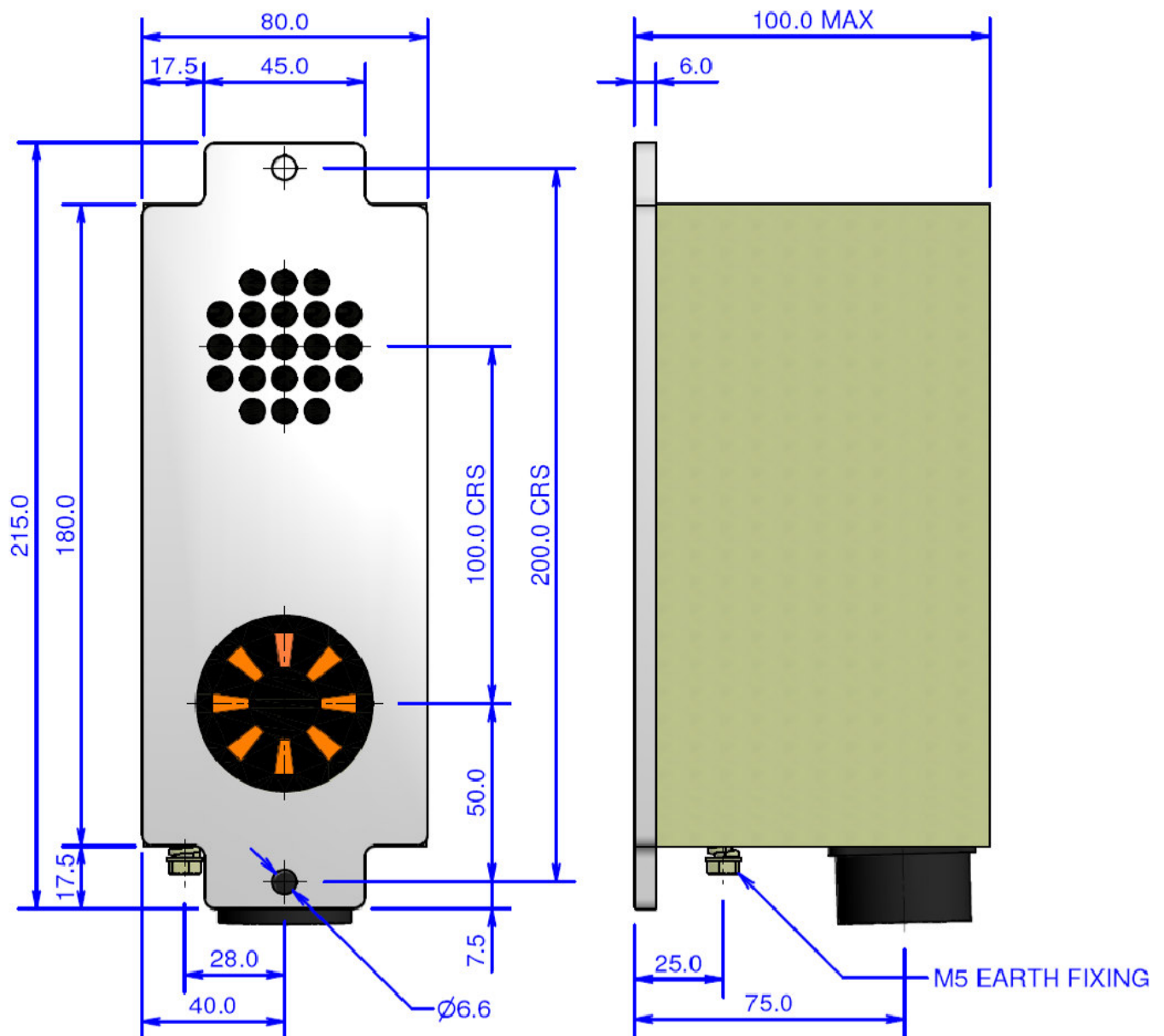
## Construction.

The unit is assembled on to a cast aluminium chassis enclosed in a steel back cover and has the same footprint and front panel mounting holes as the electromechanical unit enabling easy, direct replacement.

An M5 earthing stud is provided and retention of the military style connector type and position allows for existing units to be simply unplugged and the TY346 plugged in with no alteration to the vehicle's wiring being required.

## Dimensions.

The main dimensions of the unit are shown below.



## Weight.

The unit weighs 1.7 kg.

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## Interface.

The unit interface is via a MIL-C-5015 standard connector and the illustration (right) illustrates the pin positions looking at the open end of the connector. The key at the top of the connector points towards the back of the unit the table below describes the functions of the pins. All unused locations are fitted with blanking plugs.



Pin	Function
A	Indicator Control “All Black” Input. Applying +12V to this input sets and latches the indicator display to the “all black” aspect. The indicator control “all black” input must not be asserted at the same time as the indicator control “Black and Yellow” input.
B	Power Supply +12V Input. Positive power supply input common to both alarm and indicator circuits.
C	Power Supply 0V. Power supply ground for alarm circuit.
D	Indicator Control “Black and Yellow” Input. Applying +12V to this input sets the indicator display to the “black and yellow” aspect. The indicator control “Black and Yellow” input must not be asserted at the same time as the indicator control “all black” input.
F & H	Proving Contact (volt free). This contact is open when the indicator is displaying the “all black” aspect and closed when the indicator is displaying the “black and yellow” aspect. The contact is used to route the AWS reset signal from the control unit to the AWS receiver. This ensures that the AWS receiver can only be reset if the indicator is displaying the “black and yellow” aspect.
J	Power Supply 0V. Power supply ground for indicator circuit.
L	Clear (Chime or Bell) Input. Applying 12V to this input causes the audible alarm to produce the “Clear” sound. The “Clear” input must not be asserted at the same time as the “Warning” input. The TPWS control unit determines the duration of the Clear sound.
V	Warning Tone/Horn Input. Applying 12V to this input causes the audible alarm to produce the “Warning” sound. The “Warning” input must not be asserted at the same time as the “Clear” input. The TPWS control unit determines the duration of the Warning sound.
M	Indicator Power Off Fault Relay (IPOFR) Output. (TY346/GRP02 Only). The indicator power supply is fed back to the TPWS control unit via a relay contact (IPOFR) so the control unit can monitor the availability of the indicator power supply.
R	OTMR Status output. Output. (TY346/GRP02 Only). A 12V output is present when the indicator is in the Black / Yellow aspect.
Shell	EMC Earth between cable screen and enclosure.

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## Environmental Performance.

Operating temperature range:	BS EN 50155 Table 1, Column 2 T1, -25 to +55°C
Low temperature:	BS EN 50155, clause 10.2.3
Dry heat:	BS EN 50155, clause 10.2.4
EMC:	EN 50121-3-2 & GE/RT8015
Surge and transient protection:	Supply related surge EN 50155, clause 10.2.6.1 waveform B Direct transient EN50155 clause 10.2.6.2 waveform D
Shock and vibration:	EN 61373, category 1, body mounted
Equipotential Bonding of Rail Vehicles to Running Rail Potential	GM/RT2304
Vehicle Fire, Safety and Evacuation, Part 2 (fire safety)	GM/RT2130
Reliability:	MIL-HDBK-217F, ground mobile +55 C > 50,000 hours.
Life:	6 million operations