

XP95 I.S. Protocol Translator



Technical data

All data is supplied subject to change without notice. Specifications are typical at 24 V, 23°C and 50% RH unless otherwise stated.

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| Supply Wiring | Two wire supply, polarity sensitive |
| Supply voltage | 19 V - 28 V dc |
| Digital communication | XP95 and Discovery compatible |
| Modulation voltage at translator | 5 to 9 Volts peak to peak |
| Input current (no load condition) | 1.0 mA max - single channel 2.0 mA max - dual channel |
| Output voltage (to barrier) | 16.5 V to 19 V |
| Output modulation voltage (to barrier) | 5 to 6.5 Volts |
| Output current (to barrier) | 0.2 to 30 mA |
| Input pulse current (from barrier) | 8 to 12 mA |
| Output pulse current (drawn from loop) | 17 to 23 mA |
| Operating temperature | -20°C to +60°C |
| Humidity (no icing or condensation) | 10 to 95% relative humidity |
| Standards and approvals | MED, LR, CPD, LPCB, DNV-GL, ABS, KRS and VNIIP0 |
| Dimensions | 92.5 mm x 110 mm x 20 mm |
| Weight | 100g |
| Materials - Housing | Flame-retardant polycarbonate |

Product overview

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|------------------------------|--|
| Product | XP95 I.S. Protocol Translator - single channel |
| Part No. | 55000-855 |
| Product | XP95 I.S. Protocol Translator - dual channel |
| Part No. | 55000-856 |
| Digital Communication | XP95 and Discovery compatible |

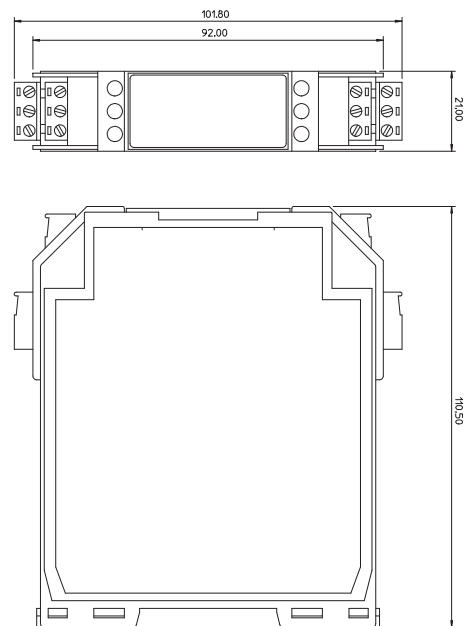
Approvals



Product information

The XP95 Intrinsically Safe (I.S.) Protocol Translator is installed in the safe area ensuring the integrity of communication between control equipment and field devices and safety within the limits of BASEEFA approvals.

XP95 I.S Protocol Translator dimensional drawing



Operation

The translator is a loop-powered device which draws a low quiescent current and is therefore transparent to both the loop driver and the I.S. detectors. Since the translator is used within the safe area, i.e., before the safety barrier, no certification is necessary. The translator falls within the generic description 'Safe Area Apparatus' on the certified system diagram.

The translator is housed in a moulded plastic enclosure which can be either clipped onto a standard 35 mm DIN-Rail (DIN 46277) or panel mounted by using pull-out latches in the base. The translator is available in single-channel or dual-channel versions. Each channel should only be connected to a single intrinsically safe circuit through an appropriate safety barrier. Each channel is thus capable of supplying up to twenty XP95 I.S. devices.

A block schematic of the dual-channel translator, showing terminal designations, is given in Figure 1. In the single-channel unit the Channel 2 circuit is not fitted and terminal 12 is not used.

The input to the unit consists of the normal XP95 signal, that is a dc voltage on which is superimposed the protocol pulse.

Translator operation

The translator first regulates the dc level to 18 V. The incoming protocol pulses are then sensed and re-generated and shaped with a fixed amplitude of 6 V, and superimposed on the 18 V dc output level.

The 10 mA current pulses drawn by the I.S. devices are detected by the current pulse sensor whose output is used to switch the 10 mA current sink across the input terminals synchronously with the device current pulse. The current boosting mechanism is inhibited during the protocol pulses so that when low resistance loads are connected to the translator output the protocol current is not boosted.

A separate current limiting circuit is incorporated in each channel which limits the maximum (peak) output current to 35 mA. This level of current will ensure that safety barrier fuses are not blown in the event of a short-circuit on the barrier output.

When the dual-channel unit is used it must be remembered that the loop input, and the negative side of the output, is common to the two channels. It is not possible therefore, to connect the two channels to different loops. Although the two channels have a common input, their outputs are individually current-limited to 35 mA (nominal). Hence, a short-circuit on one channel will cause the loop current to increase by 35 mA and as long as the panel is able to support this load the second channel will continue to operate normally.

Marine Equipment Directive 2014/90/EU

The XP95 I.S. Protocol Translator complies with the essential requirements of the Marine Equipment Directive 2014/90/EU.

XP95 I.S. dual channel Protocol Translator schematic diagram

