

XP95 I.S. Protocol Translator



Product overview

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

Compliance



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.

Technical data

All data is supplied subject to change without notice. Specifications are typical at 22 V, 25°C and 50% RH unless otherwise stated.

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 V to 9 V 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 - 19 V
Output modulation voltage (to barrier)	5 V to 7 V
Output current (to barrier)	0.2 to 30 mA
Output pulse current (drawn from loop)	16 to 23 mA
Operating temperature	-20°C to +60°C
Humidity (no icing or condensation)	10 to 95% relative humidity
Standards and approvals	CPR, LPCB, MED. LR, DNV-GL, ABS, KRS
Dimensions	92.5 mm x 110 mm x 20 mm
Weight	100g

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 I.S. certification is necessary. The translator falls within the generic description 'Safe Area Apparatus'.

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.

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.

Translator operation

The translator first regulates the dc level. The incoming protocol pulses are then sensed, re-generated and superimposed on the 20 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. This level of current will ensure that any 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.

EMC Directive 2014/30/EU

The XP95 I.S. Protocol Translators comply with the essential requirements of the EMC Directive 2014/30/EU, provided that they are used as described in this datasheet.

A copy of the Declaration of Conformity is available from the Apollo website: www.apollo-fire.co.uk

Conformity of the XP95 I.S. Protocol Translators with the EMC Directive, does not confer compliance with the directive on any apparatus or systems connected to them.

Construction Products Regulation (EU) 305/2011

The XP95 I.S. Protocol Translators comply with the essential requirements of the Construction Products Regulation (EU) 305/2011.

A copy of the Declaration of Performance is available from the Apollo website: www.apollo-fire.co.uk

Marine Equipment Directive 2014/90/EU

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

Visit our website for more information on our I.S. products - www.apollo-fire.co.uk

XP95 I.S. dual channel Protocol Translator schematic diagram

