

Distributed I/O device - IBS RL 24 DIO 8/8/8-T - 2836476

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Digital I/O device for INTERBUS; twisted pair with 500 kbaud, eight inputs (24 V DC), eight outputs (24 V DC, 0.5 A), sensor/actuator connection via 5-pos. M12 female connectors, rugged metal housing, IP67 protection



The figure shows version IBS RL 24 DIO 8/8/8-LK

Product Description

INTERBUS Ruggedline modules are provided for harsh ambient conditions or in the case of high requirements regarding system diagnostics. To ensure maximum availability, these modules are equipped with a zinc die-cast housing (IP67). Therefore, they can be installed in the direct vicinity of welding tongs.

Each Ruggedline module consists of a mounting plate and an electronics module. The electronics module is snapped onto the mounting plate and fixed with two screws if necessary.

I/O errors can be clearly localized by means of extended diagnostics. Short-circuits of the power supply of the sensors, for example, are reported in groups of 4 inputs. And, in the case of a short-circuit at an output, the respective output is even reported directly. This information will be made available to the controller and displayed at the module.

In the case of modules with fiber optic connection, the diagnostics capability even goes one step further. By using the latest fiber optic technology, the quality of the transmission path is permanently ascertained and optimally adjusted. This information is available to the controller and at the module. Due to these additional features, slow deterioration of the transmission path can be detected before errors occur during transmission or transmission is interrupted.

In the case of Ruggedline modules, the bus medium can be selected. Apart from versions with fiber optic connection (polymer fiber), there are modules which are used with twisted pair cables. The bus medium can be changed from FO installation to a copper medium at any time using the corresponding plug-in adapters.

The bus is connected by means of IP67 plug-in plugs, which transport both the bus signal and the power supply to the modules. For easy preparation, the power supply cable is connected to the plug using the QUICKON fast connection method, and connection of the fiber optic cable is made using a simple cutting and assembly tool; additional polishing is not necessary.

If a fiber optic bus cable is assembled by the user, e.g. the bridge between 2 modules, it must be at least one meter long. For shorter cable bridges, please use only cable bridges from Phoenix Contact.

Your advantages

- Rugged metal housing
- Comprehensive diagnostic functions
- Rugged Line connector for INTERBUS, either with fiber optic or twisted pair, and supply voltage
- M12 connector for I/O devices



Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4017918185602

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Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Width	179 mm
Height	67 mm
Depth	71 mm
Note on dimensions	With bus connectors and mounting plate

Ambient conditions

Ambient temperature (operation)	0 °C ... 55 °C
Ambient temperature (storage/transport)	-25 °C ... 70 °C
Permissible humidity (operation)	100 %
Permissible humidity (storage/transport)	95 % (non-condensing)
Air pressure (operation)	860 hPa ... 1080 hPa (up to 1500 m above sea level)
Air pressure (storage/transport)	660 hPa ... 1080 hPa (up to 3500 m above sea level)
Degree of protection	IP65/IP67
Note	Seal unused slots/connections to ensure the degree of protection.

General

Mounting type	Wall mounting
Net weight	830.1 g
Note on weight specifications	without plug or mounting plate
Note	Seal unused slots/connections to ensure the degree of protection.

Interfaces

Designation	INTERBUS
Connection method	IP67 RL connector
Designation connection point	Copper cable
Transmission speed	500 kbps
Transmission physics	Copper

Power supply for module electronics

Supply voltage	24 V DC
Supply voltage range	18.5 V DC ... 32 V DC (including ripple)
Ripple	Max 3.6 V _{SS} within the permissible voltage range
Supply current	typ. 120 mA (plus sensor current)

Digital inputs

Input name	Digital inputs
Connection technology	2, 3, 4-wire
Number of inputs	8
Protective circuit	Electronic short-circuit/overload protection for each group
Input voltage range "0" signal	0 V DC ... 5 V DC

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Technical data

Digital inputs

Input voltage range "1" signal	11 V DC ... 30 V DC
Typical input current per channel	3 mA
Delay at signal change from 0 to 1	3 ms
Delay at signal change from 1 to 0	3 ms

Digital outputs

Output name	Digital outputs
Connection technology	2, 3-wire
Number of outputs	8
Protective circuit	Electronic short-circuit/overload protection for each channel
Output voltage	24 V DC
Nominal output voltage	24 V
Maximum output current per channel	500 mA
Maximum output current per group	2 A
Nominal load, inductive	12 VA (1.2 H, 48 Ω)
Nominal load, lamp	12 W
Nominal load, ohmic	12 W
Limitation of the voltage induced on circuit interruption	≤ -8 V
Output voltage when switched off	max. 1 V
Output current when switched off	max. 100 µA
Behavior with overload	Auto restart
Behavior with inductive overload	Output can be destroyed

Electrical isolation

Test section	Between bus logic and I/O 500 V AC 50 Hz 1 min.
	Between bus logic and outputs 500 V AC 50 Hz 1 min.

Standards and Regulations

Connection in acc. with standard	CUL
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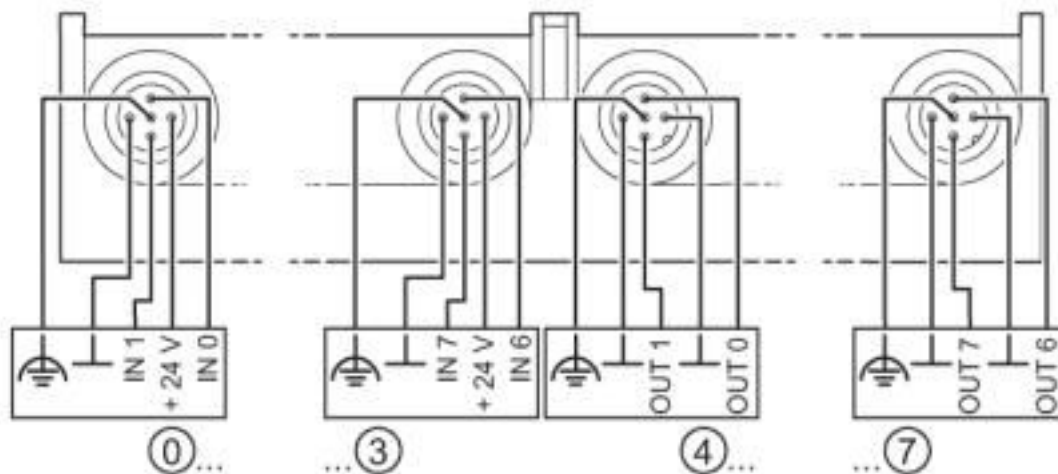
Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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Drawings

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Connection diagram



Classifications

eCl@ss

eCl@ss 10.0.1	27242604
eCl@ss 4.0	27250300
eCl@ss 4.1	27250300
eCl@ss 5.0	27250300
eCl@ss 5.1	27242600
eCl@ss 6.0	27242600
eCl@ss 7.0	27242604
eCl@ss 8.0	27242604
eCl@ss 9.0	27242604

ETIM

ETIM 2.0	EC001430
ETIM 3.0	EC001599
ETIM 4.0	EC001599
ETIM 5.0	EC001599
ETIM 6.0	EC001599
ETIM 7.0	EC001599

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201404
UNSPSC 13.2	32151602
UNSPSC 18.0	32151602
UNSPSC 19.0	32151602

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Classifications

UNSPSC

UNSPSC 20.0	32151602
UNSPSC 21.0	32151602

Approvals


Approvals


Approvals

UL Recognized / cUL Recognized / INTERBUS CLUB / cULus Recognized


Ex Approvals

Approval details

UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
Nominal voltage UN		24 V	
Nominal current IN		0.003 A	

cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
Nominal voltage UN		24 V	
Nominal current IN		0.003 A	

INTERBUS CLUB	354/31.10.01
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cULus Recognized	
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Accessories

Accessories

Adapter

Distributed I/O device - IBS RL 24 DIO 8/8/8-T - 2836476

Accessories

Adapter set - IBS RL 24 ADAP-M23/T - 2734109



INTERBUS Rugged Line adapter for converting the remote bus connection and the power supply from M23 circular connector to twisted pair

Adapter set - IBS RL 24 ADAP-T/M23 - 2734112



INTERBUS Rugged Line adapter for converting the remote bus connection and the power supply from twisted pair to M23 circular connector

Assembly element

Lower mounting part - IBS RL AP - 2731128



Mounting plate for Ruggedline devices

Bridge

Cable set - IBS RL CONNECTION-T - 2733061



Assembled cable jumper as a short connection between two INTERBUS Rugged Line devices with copper bus connectors and power supply, approximately 30 cm

Cable by the meter

Cable - IBS PWR/5HD/F - 2731775



Power supply cable, gray, welding-splash-resistant in standard applications, 5 x 1.5 mm², highly flexible, sold by the meter

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Accessories

Cable - IBS PWR/5 - 2820000



Power supply cable, gray, welding-splash-resistant in standard applications, 5 x 1.5 mm², sold by the meter

Connector set

Connector set - IBS CCO-R/L - 2759883



M23 solder connection for bus connector set, male/female connector, 9-pos. (8+1)

Labeling panel

Marking label - IBS RL MARKER-SET - 2732729



Set of 50 small and 50 large metal marking labels

Marking label - IBS RL MARKER-G-SET - 2734727



100 large metal marking labels

Marking label - IBS RL MARKER-K-SET - 2734730



100 small metal marking labels

Plug

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Accessories

Bus connector - IBS RL PLUG-T - 2731898



Connector for the copper wire bus and for the power supply with QUICKON connection method

Bus connector - IBS RL PLUG-T-F - 2734196



Connector for the copper wire bus and for the power supply with spring-cage connection method

Connector set - IBS CCO-PSF/L - 2780878



M23 power supply connector, female connector, 6-pos.

Connector set - IBS CCO-PSM/L - 2759906



M23 power supply connector, male connector, 6-pos.

Remote bus cable

Remote bus cable - IBS RBC METER/F-T - 2723123



By the meter, Remote bus cable, INTERBUS, shielded, PUR halogen-free, may green RAL 6017, 6-wire (3 x 2 x 0.22 mm²), color single wire: Green-yellow, white-brown, gray-pink, flexible installation

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Accessories

Remote bus cable - IBS RBC METER-T - 2806286



By the meter, Remote bus cable, INTERBUS, shielded, PVC, may green RAL 6017, 6-wire (3 x 2 x 0.22 mm²), color single wire: Green-yellow, white-brown, gray-pink, fixed installation

Y-distributor

Y distributor - SAC-3P-M12Y/2XM12FS PE - 1683455



Y distributor, 4-position, unshielded, Plug straight M12, coding: A, on Socket straight M12, coding: A and Socket straight M12, coding: A

User manual - IBS RL SYS PRO UM - 2743705



User manual, German, for configuring and installing the Rugged Line product range, only available as a download.

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