

## Distributed I/O device - IBS RL 24 DI 16/8-T - 2836463

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Digital input device for INTERBUS; twisted pair with 500 kbaud, 16 inputs (24 V DC), sensor connection via 5-pos. M12 female connectors, rugged metal housing, IP67 protection



The figure shows version IBS RL 24 DI 16/8-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
- M12 connector for I/O devices
- Rugged Line connector for INTERBUS, either with fiber optic or twisted pair, and supply voltage



### Key Commercial Data

Packing unit	1 pc
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## Distributed I/O device - IBS RL 24 DI 16/8-T - 2836463

GTIN	 4 017918 185619
GTIN	4017918185619
Weight per Piece (excluding packing)	836.500 g
Custom tariff number	85176200
Country of origin	Germany

### 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	720 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
Transmission speed	500 kbps
Transmission physics	Copper

#### Power supply for module electronics

Supply voltage	24 V DC
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### Technical data

#### Power supply for module electronics

Supply voltage range	18.5 V ... 32 V (including ripple)
Ripple	Max 3.6 V <sub>SS</sub> within the permissible voltage range

#### Digital inputs

Input name	Digital inputs
Connection technology	2, 3, 4-wire
Number of inputs	16
Protective circuit	Electronic short-circuit/overload protection for each group
Input voltage range "0" signal	0 V ... 5 V
Input voltage range "1" signal	11 V ... 32 V
Typical input current per channel	50 mA

#### Standards and Regulations

Connection in acc. with standard	CUL
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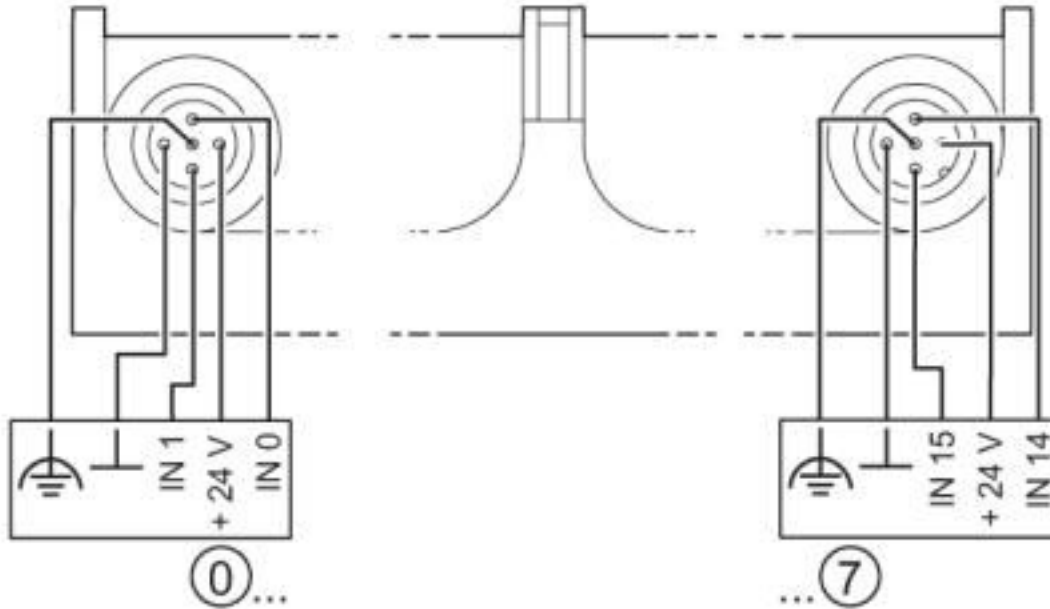
#### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

### Drawings

## Distributed I/O device - IBS RL 24 DI 16/8-T - 2836463

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

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## Classifications

### 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
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		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
Nominal voltage UN		24 V	
Nominal current IN		0.003 A	

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

INTERBUS CLUB	353/31.10.01
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## Distributed I/O device - IBS RL 24 DI 16/8-T - 2836463

### Approvals

cULus Recognized



### Accessories

#### Accessories

##### Adapter

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

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### Accessories

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

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### Cable by the meter

Cable - IBS PWR/5HD/F - 2731775



Power supply cable, gray, welding-splash-resistant in standard applications, 5 x 1.5 mm<sup>2</sup>, highly flexible, sold by the meter

Cable - IBS PWR/5 - 2820000



Power supply cable, gray, welding-splash-resistant in standard applications, 5 x 1.5 mm<sup>2</sup>, sold by the meter

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### Connector set

Connector set - IBS CCO-R/L - 2759883



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

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### Labeling panel

## Distributed I/O device - IBS RL 24 DI 16/8-T - 2836463

### Accessories

Marking label - IBS RL MARKER-SET - 2732729



Set of 50 small and 50 large metal marking labels

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



100 large metal marking labels

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



100 small metal marking labels

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### Plug

Bus connector - IBS RL PLUG-T - 2731898



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

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



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

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### Accessories

Connector set - IBS CCO-PSF/L - 2780878



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

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Connector set - IBS CCO-PSM/L - 2759906



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

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### 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 mm<sup>2</sup>), color single wire: Green-yellow, white-brown, gray-pink, flexible installation

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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 mm<sup>2</sup>), color single wire: Green-yellow, white-brown, gray-pink, fixed installation

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### 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

## Distributed I/O device - IBS RL 24 DI 16/8-T - 2836463

### Accessories

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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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