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Distributed I/O device - IBS RL 24 DI 16/8-LK - 2724850

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

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 and 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

RoHS **INTERBUS**

Key Commercial Data

Packing unit	1 pc

Distributed I/O device - IBS RL 24 DI 16/8-LK - 2724850

GTIN	
GTIN	4017918185428
Weight per Piece (excluding packing)	840.200 g
Custom tariff number	85389099
Country of origin	Germany

Technical data

Note

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

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	Optic fiber (polymer fiber 980/1000 μm)
Transmission speed	500 kbps
Transmission physics	FO

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_{SS} within the permissible voltage range

Digital inputs

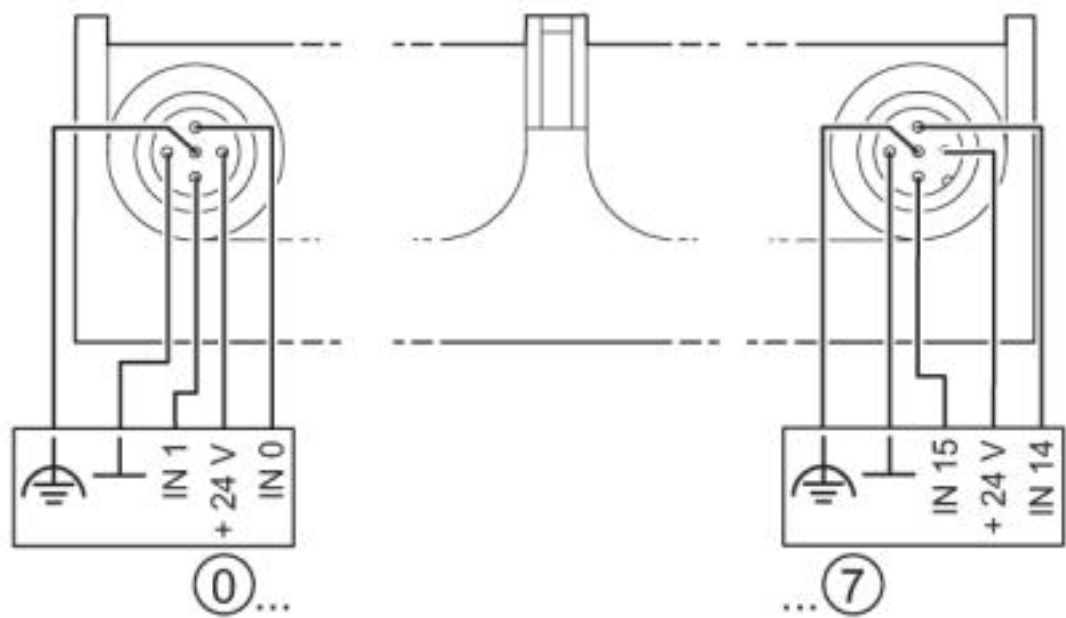| Input name	Digital inputs
Connection technology	2, 3, 4-wire
Number of inputs	16
Type of protection	Electronic short-circuit/overload protection for each group
Input voltage range "0" signal	0 V ... 5 V
Input voltage range "1" signal	11 V ... 32 V
Typical input current per channel	50 mA

Standards and Regulations

Connection in acc. with standard	CUL

Environmental Product Compliance

	Lead 7439-92-1

Drawings

Connection diagram

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Classifications

eCl@ss

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

Approvals

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Approvals

UL Recognized / cUL Recognized / INTERBUS CLUB / EAC / cULus Recognized

Ex Approvals

Approval details

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Approvals

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	363/23.11.01

EAC		EAC-Zulassung

cULus Recognized	

Accessories

Accessories

Adapter cable

Cable set - IBS RL CABLE POF/ - 2819956

Assembled cable sets with fiber optic bus connectors, sold by the meter

Assembly element

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Accessories

Lower mounting part - IBS RL AP - 2731128

Mounting plate for Ruggedline devices

Assembly tool

Fiber cutter - IBS RL FOC - 2725147

Fiber cutter for assembling polymer fiber cables for connecting INTERBUS Ruggedline devices

Assembly tool - PSM-POF-KONFTOOL - 2744131

Polymer fiber DIY case, consisting of: Stripping knife, stripping pliers, polishing wheels for F-SMA and SC-RJ quick mounting connectors, polishing pad and emery paper

Bridge

Cable set - IBS RL CONNECTION-LK - 2733029

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

Cable by the meter

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Accessories

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

Cable - IBS PWR/5 - 2820000

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

Circular connector (cable-side)

Sensor/actuator connector - SACC-M12MS-4QO-0,75 - 1641769

Sensor/actuator connector, Universal, 4-position, Plug straight M12, A-coded, Insulation displacement connection, knurl material: Plastic, external cable diameter 4 mm ... 8 mm

Connector set

Connector set - IBS CCO-R/L - 2759883

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

Data cable by the meter

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Accessories

FO cable - PSM-LWL-RUGGED-980/1000 - 2744322

Polymer fiber cable, duplex 980µm/1000µm, heavy-weight version for installation in stationary systems and machines, by the meter without male connector

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FO cable - PSM-LWL-RUGGED-FLEX-980/1000 - 2744335

Polymer fiber cable, duplex 980/1000 µm, heavy-weight, highly flexible version for flexible conduit applications, by the meter, without connector

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FO cable - PSM-LWL-KDHEAVY-980/1000 - 2744319

Polymer fiber cable, duplex 980 µm/1000 µm, medium-weight version for installation in stationary systems and machines, by the meter without male connector

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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

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Accessories

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

100 small metal marking labels

Measuring tools

Measuring instrument - PSM-FO-POWERMETER - 2799539

Fiber optic measuring case, consisting of an optical power meter, F-SMA, B-FOC adapters, reference fibers and operating instructions

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Media converter

FO converters - IBS OPTOSUB-MA/M/R-LK-OPC - 2732635

INTERBUS fiber optic converter for converting the remote OUT interface to fiber optics, correction of the optical transmission capacity, FO output right

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Plug

Bus connector - IBS RL PLUG-LK/POF - 2731076

Connector for the fiber optic bus with polymer fiber cable and for the power supply with QUICKON connection method

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Accessories

Adapter set - IBS RL 24 ADAP-LK/T - 2725040

INTERBUS Rugged Line adapter for converting the fiber optic remote bus to a copper wire remote bus

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Adapter set - IBS RL 24 ADAP-T/LK - 2725037

INTERBUS Rugged Line adapter for converting the copper wire remote bus to a fiber optic remote bus

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Bus connector - IBS RL PLUG-LK/POF-F - 2734183

Connector for the fiber optic bus with polymer fiber cable and for the power supply with spring-cage connection method

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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.

Protective cap

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Accessories

Transport protection - IBS RL PROT-LK - 2819969

Transport protection for optic fiber bus connection

Y-distributor

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

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

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.