

## Motor starter - IBS RL 400 MLR R DIO6/1 LK2MBD - 2731830

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Electromechanical reversing load motor starter for INTERBUS; fiber optic technology with 2 Mbaud, inputs (24 V DC), integrated motor protection relay (220 V AC to 440 V AC; 8 A, maximum), sensor connection via 5-pos. M12 female connectors, rugged metal housing, IP67 protection

### Your advantages

- ✓ Rugged metal housing
- ✓ Emergency operation on the device or via external operating elements
- ✓ Comprehensive diagnostic functions including motor current monitoring
- ✓ M12 connector for digital inputs
- ✓ Rugged Line connector for INTERBUS with fiber optic and supply voltage
- ✓ COMBICON connector for motor output



### Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4017918901820
Weight per Piece (excluding packing)	3,800.000 g
Custom tariff number	85389091
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	185.1 mm
Height	193 mm
Depth	138 mm

#### Ambient conditions

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## Technical data

### 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

### Interfaces

Designation	INTERBUS
Connection method	Fiber optics
Transmission speed	2 Mbps

### Power supply for module electronics

Supply voltage	24 V DC
Supply voltage range	18.5 V DC ... 32 V DC (including ripple)
Ripple	3.6 V <sub>pp</sub>

### Mains connection

Designation	Mains connection
Connection method	POWER-COMBICON with silver contacts
Designation connection point	Terminal strip X11 and X12
Number of positions	4
Permissible conductor cross section	2.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Operating voltage	200 V AC ... 440 V AC (conductor voltage)
Max. current carrying capacity	20 A

### Motor starter, output

Connection method	POWER-COMBICON
Number	1
Designation connection point	X10
Number of positions	8
Pg screw connection	Pg16
Operating voltage	200 V AC ... 440 V AC
Frequency range	50 Hz ... 60 kHz
Nominal current range	0.2 A ... 8 A (parameterizable, observe derating)
Utilization category	on the basis of AC 3
Switching rate	max. 5 cycles per minute
Motor startup time	1 s

### Motor monitoring

Parameterization	Via INTERBUS
Overspeed tripping	≥ 40 A (after 1 second at I <sub>nom</sub> > 3.6 A)

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## Technical data

### Motor starter, brake

Continuous load current	max. 1 A
Type of contact	Mechanical relay contact
Connection technology	POWER-COMBICON terminal strips
Connection voltage	12 V AC/DC ... 440 V AC/DC

### Digital inputs

Input name	Digital inputs
Number of inputs	6
Connection method	M12 connector
Connection technology	3, 4-wire
Number of positions	5
Input voltage	24 V DC (DIN EN 61131-2)
Input voltage range "0" signal	0 V ... 5 V
Input voltage range "1" signal	11 V ... 30 V
Typical input current per channel	5 mA (for $U_{S1} = 24 V$ )
Filter time	3 ms
Power supply for sensors	$U_{IN1} = U_{S1}$ minus 1 V 50 mA Protected against inductive reverse voltages, electronically protected against short-circuiting

### Digital outputs

Output name	Digital outputs
Number of outputs	1
Connection method	M12 connector
Number of positions	5
Output current	0.5 A
Minimum output voltage with nominal current	$U_{S1}$ minus 2 V
Type of protection	Electronic short-circuit/overload protection

### General

Mounting type	Wall mounting
Net weight	3800 g
Diagnostics messages	Mains failure, phase failure, blown fuse Error message in diagnostic code (bus) and display by means of the E LED on the motor starter
	Motor connector not plugged in, motor temperature exceeded, thermistor line short-circuited Error message in diagnostic code (bus) and display by means of the E LED on the motor starter
	Sensor supply failure Error message in diagnostic code (bus) and display by means of the E LED on the motor starter
	Failure of the actuator supply Error message in diagnostic code (bus) and display by means of the E LED on the motor starter
	Motor overcurrent Error message in diagnostic code (bus) and display by means of the E LED on the motor starter
	Output stage cannot be controlled Error message in diagnostic code (bus) and display by means of the E LED on the motor starter
	Module error during self test Message to the master

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## Technical data

### General

Mounting type	on mounting plate
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### Standards and Regulations

Air clearances and creepage distances	according to EN 50178: 1998
Protection class	I (MЭК 61140, EN 61140, VDE 0140-1)

### Environmental Product Compliance

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

## 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	27242609
eCl@ss 8.0	27242609
eCl@ss 9.0	27242609

### ETIM

ETIM 2.0	EC001433
ETIM 3.0	EC001605
ETIM 4.0	EC001605
ETIM 5.0	EC001605
ETIM 6.0	EC001605
ETIM 7.0	EC001605

### 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

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## Approvals

### Approvals

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#### Approvals


VDE Zeichengenehmigung / INTERBUS CLUB

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#### Ex Approvals

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### Approval details

VDE Zeichengenehmigung		<a href="http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx">http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx</a>	40015947
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INTERBUS CLUB	448/29.07.05
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## Accessories

### Accessories

#### Assembly element

Lower mounting part - IBS RL AP - 2731128



Mounting plate for Ruggedline devices

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## 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

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## 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 mm<sup>2</sup>, highly flexible, sold by the meter

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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 RL MLR PLSET R-8A - 2740504



Accessory set comprising: connectors and Pg screw connections

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### Data cable by the meter

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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### Accessories

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

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### Operator interface

Operator panel - IBS HVO/M12 - 2837006



Handheld operator panel, for INTERBUS motor starters and INTERBUS variable frequency drives in IP54 protection

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### Plug

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

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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### Accessories

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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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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