The Drive & Control Company

Rexroth
Bosch Group

GoTo™ North America Focused Delivery Program Electric Drives & Controls

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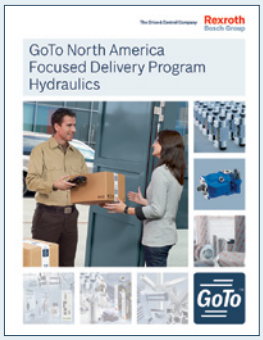

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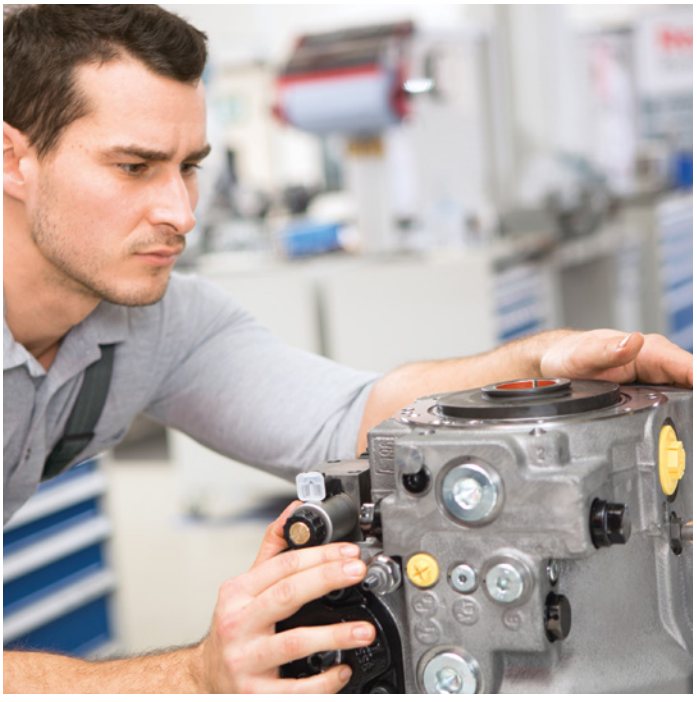

You benefit from simplified access to product information, preferred order processing and reduced delivery times. This allows you to complete your machine or system on schedule.

Our GoTo product overviews, whether in printed form or on the Internet, show you the complete portfolio. In addition, our webpages quickly provide you with additional information on the respective product, on the technical data as well as on ordering.

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Electric Drives and Controls GoTo Catalog

Bosch Rexroth is pleased to present our Electric Drives and Controls GoTo Product catalog as part of our GoTo Focused Delivery Program.

The GoTo Focused Delivery Program streamlines everything to make it easier for you to get a selection of our most popular Rexroth products faster. You'll benefit from quicker access to product information, reliable lead times that meet or beat the expectations of the market, and enhanced customer service.

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How to place a GoTo order directly with Bosch Rexroth

Please clearly state “GoTo” on the purchase order, and ensure that all GoTo items are within the maximum GoTo quantity.

For products with a published lead time of one (1) business day, the ship date will be the following day, provided:
- the following day is a business day
- the order is placed by 1 PM (EST)

The contents of a GoTo order may not ship as a complete delivery and will not be shipped via the customer defined consolidation point / day.

All items subject to prior sale. It is advisable to confirm critical delivery requirements at time of order. All sales subject to Bosch Rexroth Terms & Conditions of sales for your country, which you can read at:

www.boschrexroth-us.com or
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Bosch Rexroth reserves the right to make program changes at any time without notice.

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GoTo Focused Delivery Program: Drive Systems

Drive Systems - IndraDrive Cs - Drives

The IndraDrive Cs is a servo drive that features a compact space-saving design. Selectable Multi-Protocol Ethernet command interface provides the flexibility of choosing any open Ethernet controller for the system, SERCOS III for example. A Multi-encoder interface allows use of the platform with virtually any motor technology, for instance torque or linear motor technologies.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoTo***

Features

- Extremely compact design
- Ethernet-based communications, multi-protocol support: SERCOS III, Profi Net IO, EtherNet/IP and EtherCat
- Innovative multi-encoder interface: Hiperface, EnDat 2.1, 1Vss, 5 V TTL, and Rexroth MSM and MSK servo motors
- Energy efficient product - DC bus sharing
- Standard, Servo and Synchronization modes available
- Complete range of scalable drives
- Compatible with the IndraDrive family
- Digital inputs/outputs and analog input on board
- Intelligent operating panel with programming function supports device swap without a PC
- Integrated brake resistor, alternative an external brake resistor can be connected

Technical Data

Models		HCS01.1E-W0006-A-02	HCS01.1E-W0013-A-02	HCS01.1E-W0008-A-03	HCS01.1E-W0018-A-03	HCS01.1E-W0028-A-03	HCS01.1E-W0054-A-03
Performance Data							
Mains voltage	V	1/3 AC 110...230 V		3 AC 200 ... 500 V			
Continuous current	A_{eff}	2.34	4.4	2.7	7.6	11.5	21
Maximum current	A_{eff}	6	13	8	18	28	54
Maximum output without/with choke	kW	0.25 / –	0.8 / –	0.86 / –	1.7/ –	2.6/4.0	9.0 / 14.0
Mechanical data							
Width W	mm	50			70		130
Height H (max)	mm	215			268		268
Depth D (max)	mm	220			220		220
Mass	kg	0.72			1.7		4.22

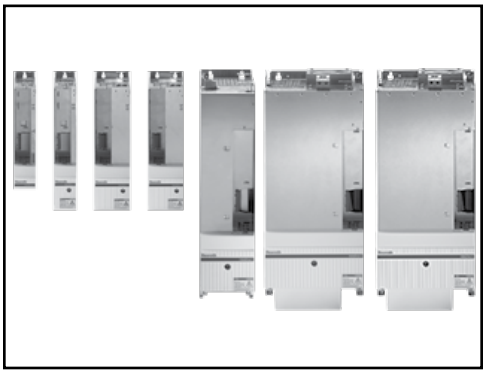
Available Firmware Options	
FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN	Basic closed loop 17VRS without the possibility to select synchronization, servo or spindle extension set
FWA-INDRV*-MPB-17VRS-D5-1-SNC-NN	Basic closed loop 17VRS with synchronization only extension set
FWA-INDRV*-MPB-17VRS-D5-1-ALL-NN	Basic closed loop 17VRS with the possibility to select synchronization, servo or spindle extension set
FWA-INDRV*-MPB-17VRS-D5-1-ALL-ML	Basic closed loop 17VRS with the possibility to select synchronization, servo or spindle extension set and MLD master
FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN	Basic closed loop 18VRS without the possibility to select synchronization, servo or spindle extension set
FWA-INDRV*-MPB-18VRS-D5-1-SNC-NN	Basic closed loop 18VRS with synchronization only extension set
FWA-INDRV*-MPB-18VRS-D5-1-SRV-NN	Basic closed loop 18VRS with servo only extension set
FWA-INDRV*-MPC-18VRS-D5-1-SNC-NN	Advanced single-axis closed loop 18VRS with synchronization only extension set (software module PFM04.1…-NW reqd.)
FWA-INDRV*-MPC-18VRS-D5-1-NNN-ML	Advanced single-axis closed loop 18VRS for MLD master (software module PFM04.1…-NW reqd.)
FWA-INDRV*-MPC-18VRS-D5-1-SNC-ML	Advanced single-axis closed loop 18VRS with synchronization extension set for MLD master (software module PFM04.1…-NW reqd.)
FWA-INDRV*-MPC-18VRS-D5-1-ALL-MA	Advanced single-axis closed loop 18VRS with all extension sets for MLD master (software module PFM04.1…-NW required)
FWA-INDRV*-MPE-18VRS-D5-1-NNN-NN	Economy closed loop / open loop 18VRS
FWS-INDRV*-MP*-**VRS-NN-ETHERNETIP	Ethernet protocol preset – Ethernet/IP
FWS-INDRV*-MP*-**VRS-NN-PROFINETIO	Ethernet protocol preset – PROFINET I/O
FWS-INDRV*-MP*-**VRS-NN-ETHERCAT	Ethernet protocol preset – EtherCAT SoE

Software module	
PFM04.1-512-NW	Required for IndraDrive Cs-Advanced with MLD master and MPC-firmware

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911333290	FWA-INDRV*-MPB-17VRS-D5-1-ALL-ML	5	5 day(s)
R911333280	FWA-INDRV*-MPB-17VRS-D5-1-ALL-NN	5	5 day(s)
R911333283	FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN	5	5 day(s)
R911333284	FWA-INDRV*-MPB-17VRS-D5-1-SNC-NN	5	5 day(s)
R911339321	FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN	5	5 day(s)
R911339323	FWA-INDRV*-MPB-18VRS-D5-1-SNC-NN	5	5 day(s)
R911339325	FWA-INDRV*-MPB-18VRS-D5-1-SRV-NN	5	5 day(s)
R911339345	FWA-INDRV*-MPC-18VRS-D5-1-ALL-MA	1	5 day(s)
R911339352	FWA-INDRV*-MPC-18VRS-D5-1-NNN-ML	1	5 day(s)
R911339355	FWA-INDRV*-MPC-18VRS-D5-1-SNC-ML	1	5 day(s)
R911339356	FWA-INDRV*-MPC-18VRS-D5-1-SNC-NN	1	5 day(s)
R911339297	FWA-INDRV*-MPE-18VRS-D5-1-NNN-NN	3	5 day(s)
R911330278	FWS-INDRV*-MP*-**VRS-NN-ETHERCAT	5	5 day(s)
R911330279	FWS-INDRV*-MP*-**VRS-NN-ETHERNETIP	5	5 day(s)
R911330280	FWS-INDRV*-MP*-**VRS-NN-PROFINETIO	5	5 day(s)
R911325243	HCS01.1E-W0006-A-02-B-ET-EC-NN-NN-NN-FW	5	5 day(s)
R911331605	HCS01.1E-W0008-A-03-B-ET-EC-NN-L4-NN-FW	5	5 day(s)
R911325246	HCS01.1E-W0008-A-03-B-ET-EC-NN-NN-NN-FW	5	5 day(s)
R911338054	HCS01.1E-W0008-A-03-E-S3-EC-NN-L3-NN-FW	3	5 day(s)
R911328445	HCS01.1E-W0008-A-03-E-S3-EC-NN-NN-NN-FW	3	5 day(s)
R911339620	HCS01.1E-W0013-A-02-A-CC-EC-NN-L3-NN-FW	1	5 day(s)
R911331624	HCS01.1E-W0013-A-02-B-ET-EC-NN-L4-NN-FW	5	5 day(s)
R911325245	HCS01.1E-W0013-A-02-B-ET-EC-NN-NN-NN-FW	5	5 day(s)
R911338061	HCS01.1E-W0018-A-03-A-CC-EC-ET-L4-NN-FW	1	5 day(s)
R911331608	HCS01.1E-W0018-A-03-B-ET-EC-NN-L4-NN-FW	5	5 day(s)
R911325247	HCS01.1E-W0018-A-03-B-ET-EC-NN-NN-NN-FW	5	5 day(s)
R911337330	HCS01.1E-W0018-A-03-E-S3-EC-NN-L3-NN-FW	3	5 day(s)
R911328446	HCS01.1E-W0018-A-03-E-S3-EC-NN-NN-NN-FW	3	5 day(s)
R911337561	HCS01.1E-W0028-A-03-A-CC-EC-ET-L4-NN-FW	1	5 day(s)
R911331611	HCS01.1E-W0028-A-03-B-ET-EC-NN-L4-NN-FW	5	5 day(s)

R911325248	HCS01.1E-W0028-A-03-B-ET-EC-NN-NN-NN-FW	5	5 day(s)
R911340386	HCS01.1E-W0028-A-03-E-S3-EC-NN-L3-NN-FW	3	5 day(s)
R911328447	HCS01.1E-W0028-A-03-E-S3-EC-NN-NN-NN-FW	3	5 day(s)
R911332723	HCS01.1E-W0054-A-03-B-ET-EC-NN-L4-NN-FW	5	5 day(s)
R911331185	HCS01.1E-W0054-A-03-B-ET-EC-NN-NN-NN-FW	5	5 day(s)
R911336255	PFM04.1-512-NW	5	5 day(s)

Drive Systems - IndraDrive C - Power Section



IndraDrive sets new standards in drive technology with a combination of three product advantages: scalability in power and functionality, consistency in technology, engineering and operation and openness in communication. The IndraDrive C series of converters integrate inverter and power supply in one unit. The compact construction contains additional mains connection components, making it particularly suitable for single and multi axis applications.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToDrivesystems***

Features

- Ethernet-based communications, multi-protocol support: SERCOS III, Profi Net IO, EtherNet/IP and EtherCat
- Compact converters and modular inverters on one platform
- Integrated motion logic with IEC-compliant PLC
- Drive-integrated safety technology
- Energy efficient product - DC bus sharing
- Standard , Servo and Synchronization modes available
- Complete range of scalable drives
- Digital inputs/outputs and analog input on board
- Intelligent operating panel with programming function supports device swap without a PC
- Integrated brake resistor, alternative an external brake resistor can be connected

Technical Data

Models		HCS02.1E-W0012	HCS02.1E-W0028	HCS02.1E-W0054	HCS02.1E-W0070
Performance data					
Mains voltage	V	3 AC 200 ... 500 V			
Continuous current	Aeff	4.5	11.3	20.6	28.3
Maximum current	Aeff	11.5	28.3	54	70.8
Maximum output without/with choke	kW	5/5	8/10	12/16	14/19
Mechanical data					
Width W	mm	65	65	105	105
Height H (max)	mm	290	352		
Depth D (max)	mm	252			
Mass	kg	2.9	3.8	6.7	6.8

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Technical Data (continued)

Models		HCS03.1E-W0070-A-05-NNBV	HCS03.1E-W0100-A-05-NNBV	HCS03.1E-W0150-A-05-NNBV	HCS03.1E-W0210-A-05-NNBV
Performance data					
Continuous current	A	45	73	95	145
Maximum current	A	70	100	150	210
DC bus continuous power without/with choke	kW	13/25	24/42	34/56	42/85
Maximum output without/with choke	kW	20/40	33/59	54/89	68/124
Mains voltage	V	3 AC 400 to 500 (+10%/–15%)			
Continuous input mains current	A	50	80	106	146
Dependence of output on mains voltage		at U_{LN} < 400 V: 1% power reduction per 4 V decrease in voltage			
DC bus terminal		•	•	•	•
DC bus capacity	µF	940	1,440	1,880	4,700
Brake chopper					
Permanent braking power	kW	13.2	18.9	25.2	42.6
Maximum braking power	kW	42	63	97	137
Control voltage data					
Control voltage, internal	V	DC 24 (not for supply of motor holding brake)			
Control voltage, external	V	DC 24 ±20% (DC 24 ±5% when supplying motor holding brake)			
Power consumption without control unit & motor brake	W	22.5	25	25	30
Continuous current without control unit & motor brake	A	0.9	1	1	1.3
Mechanical data					
Width W	mm	125	225	225	350
Height H (max)	mm	440			
Depth D (max)	mm	315			
Mass	kg	13	20	20	38

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911298371	HCS02.1E-W0012-A-03-NNNN	3	5 day(s)
R911298374	HCS02.1E-W0028-A-03-NNNN	3	5 day(s)
R911298373	HCS02.1E-W0054-A-03-NNNN	3	5 day(s)
R911298372	HCS02.1E-W0070-A-03-NNNN	3	5 day(s)
R911308417	HCS03.1E-W0070-A-05-NNBV	3	5 day(s)
R911308419	HCS03.1E-W0100-A-05-NNBV	3	5 day(s)
R911308421	HCS03.1E-W0150-A-05-NNBV	3	5 day(s)
R911308415	HCS03.1E-W0210-A-05-NNBV	3	5 day(s)

Drive Systems - IndraDrive M - Inverters

Multi-axis solution with power supplies and inverters.

Multi-axis applications are the domain of the modular system IndraDrive M. Power supplies provide the necessary DC bus voltage for the inverters. Compact single-axis or double-axis inverters and power supplies with integrated mains connection components enable compact solutions for large axis groups.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- Single-axis inverter with maximum current from 20 A to 350 A
- Space-saving design for multi-axis applications
- Can be powered via power supply unit or converter
- Energy exchange via common DC bus
- Can be connected to a converter for cost-effective solutions

Technical Data

Models		HMS01.1N-W0020-A-07-NNNN	HMS01.1N-W0036-A-07-NNNN	HMS01.1N-W0054-A-07-NNNN	HMS01.1N-W0070-A-07-NNNN	HMS01.1N-W0110- A-07-NNNN	HMS01.1N-W0150-A-07-NNNN	HMS01.1N-W0210- A-07-NNNN
Performance data								
Continuous current	A	12.1	21.3	35	42.4	68.5	100	150
Maximum current	A	20	36	54	70	110	150	210
Control voltage data								
Control voltage, external	V	DC 24 ±20% (DC 24 ±5% when supplying motor holding brake)						
Power consumption without control unit and motor brake	W	10	15	10	16	34	23	75
Continuous current without control unit and motor brake	A	0.4	0.7	0.4	0.7	1.4	1.0	3.1
Mechanical data								
Width W	mm	50	50	75	100	125	150	200
Height H (max)	mm	440						
Depth D (max)	mm	309						
Weight	kg	5.3	5.3	6.7	7.9	11	12.7	16.4

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Technical Data

Models		HMD01.1N-W0012-A-07-NNNN	HMD01.1N-W0020-A-07-NNNN	HMD01.1N-W0036-A-07-NNNN
Performance data				
Continuous current	A	7	10	20
Maximum current	A	12	20	36
Control voltage data				
Control voltage, external	V	DC 24 ±20% (DC 24 ±5% when supplying motor holding brake)		
Power consumption without control unit and motor brake	W	17	17	11
Continuous current without control unit and motor brake	A	0.7	0.7	0.5
Mechanical data				
Width W	mm	50	50	75
Height H (max)	mm	440		
Depth D (max)	mm	309		
Weight	kg	5.5	5.7	7.5

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911306439	HMD01.1N-W0012-A-07-NNNN	3	5 day(s)
R911295322	HMD01.1N-W0020-A-07-NNNN	3	5 day(s)
R911298766	HMD01.1N-W0036-A-07-NNNN	3	5 day(s)
R911295323	HMS01.1N-W0020-A-07-NNNN	3	5 day(s)
R911295324	HMS01.1N-W0036-A-07-NNNN	3	5 day(s)
R911295325	HMS01.1N-W0054-A-07-NNNN	3	5 day(s)
R911295326	HMS01.1N-W0070-A-07-NNNN	3	5 day(s)
R911310462	HMS01.1N-W0110-A-07-NNNN	3	5 day(s)
R911297164	HMS01.1N-W0150-A-07-NNNN	3	5 day(s)
R911295328	HMS01.1N-W0210-A-07-NNNN	1	5 day(s)

GoTo Focused Delivery Program: Drive Systems

Drive Systems - IndraDrive M - Power Supply

Maximum energy effi ciency can be achieved with power supplies that are capable of mains regeneration. Beside the power recovery encountered in regenerative operation of the drives, these devices also feature sinusoidal line currents, an overall power factor of 0.99 and a closed-loop DC bus.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- Power range from 15 kW to 120 kW
- Direct mains connection from 400 V to 480 V
- Energy-saving line regeneration
- Integrated mains contactor
- Integrated brake resistor

Technical Data

Models		HMV01.1E-W0030-A-07-NNNN	HMV01.1E-W0075-A-07-NNNN	HMV01.1E-W0120-A-07-NNNN	HMV01.1R-W0018- A-07-NNNN	HMV01.1R-W0045-A-07-NNNN	HMV01.1R-W0065-A-07-NNNN	HMV01.1E-W0120-A-07-NNNN
Performance data								
DC bus continuous power without/with choke	kW	18/30	45/75	70/20	–/18	–/45	–/65	–/120
Maximum output	kW	45	112	180	45	112	162	180
Mains voltage	V	3 AC 400 to 480 (+10%/–15%)						
Continuous input mains current	A	51	125	200	26	65	94	181
Dependence of output on mains voltage		at U_{LN} < 400 V: 1% power reduction per 4 V						
		at U_{LN} > 400 V: 1% power gain per 4 V			at U_{LN} > 400 V: no power gain			
DC bus capacity	µF	1,410	3,760	5,640	705	1,880	2,820	4,950
DC bus voltage range	V	DC 435 to 710			DC 750 (regulated)			
Brake resistor								
Brake resistor		Internal						
Maximum braking energy consumption	kWs	100	250	500	80	100	150	–
Permanent braking power	kW	1.5	2	2.5	0.4	0.4	0.4	–
Maximum braking power	kW	36	90	130	36	90	130	–

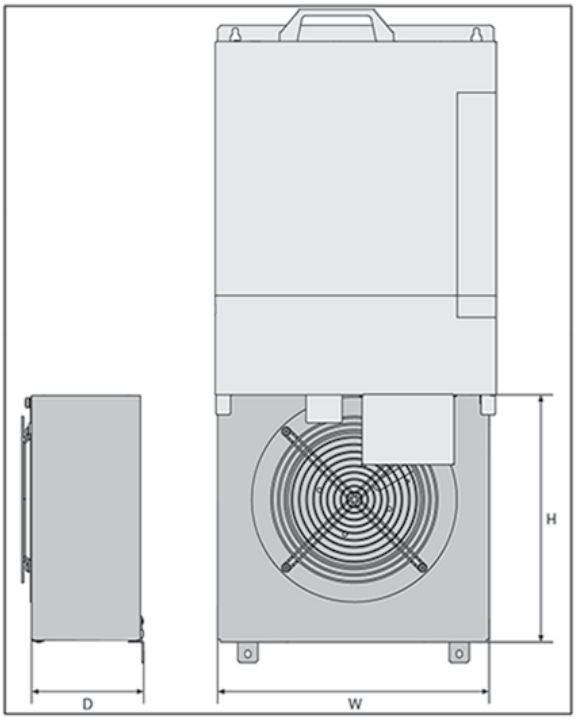
continued on next page

Technical Data (continued)

Models		HMV01.1E-W0030-A-07-NNNN	HMV01.1E-W0075-A-07-NNNN	HMV01.1E-W0120- A-07-NNNN	HMV01.1R-W0018-A-07-NNNN	HMV01.1R-W0045-A-07-NNNN	HMV01.1R-W0065-A-07-NNNN	HMV01.1R-W0120- A-07-NNNN
Control voltage data								
Control voltage, internal	V	DC 24 ±5%						
Power consumption	W	25	30	55	31	41	108	224 [1]
Continuous current	A	1	1.3	2.3	1.3	1.9	4.5	13 [1]
Mechanical data								
Width W	mm	150	250	350	175	250	350	350
Height H (max)	mm	440 [2]						
Depth D (max)	mm	309						
Weight	kg	13.5	22	32	13.5	20	31	34.5

In the case of the HMV01.1R the continuous output and maximum output data also apply for feedback mode.
All data apply to nominal rating at 3 AC 400 V mains voltage. Connection option for auxiliary components, such as HLB, HLC, etc.
1) Including blower unit HAB
2) Overall height HMV01.1R-W0120 with blower unit HAB: 748 mm

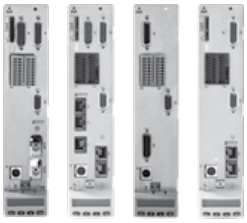
The blower unit HAB01 is required for operating the supply unit HMV01.1R-W0120 and the inverter HMS01.1N-W0350. In a space-saving arrangement, it is mounted directly below the unit. The electrical connection is made via a simple plug-in connector.



Blower unit for HMV01.1R-W0120- A-07-NNNN	Width W	Height H	Depth D	Weight
	mm	mm	mm	kg
HAB01.1-0350-1640-NN	350	308	152	7.5

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911312503	HAB01.1-0350-1640-NN	1	5 day(s)
R911296724	HMV01.1E-W0030-A-07-NNNN	1	5 day(s)
R911297424	HMV01.1E-W0075-A-07-NNNN	1	5 day(s)
R911297425	HMV01.1E-W0120-A-07-NNNN	1	5 day(s)
R911297460	HMV01.1R-W0018-A-07-NNNN	1	5 day(s)
R911296725	HMV01.1R-W0045-A-07-NNNN	1	5 day(s)
R911297426	HMV01.1R-W0065-A-07-NNNN	1	5 day(s)
R911312757	HMV01.1R-W0120-A-07-NNNN	1	5 day(s)

Drive Systems - IndraDrive C and M - Control Sections



We can supply control units tailored to your specific application, ranging from standard to high-end applications. Integrated motionlogic, numerous technology functions, certified safety technology and standardized interfaces leave nothing to be desired.

The correct interface for connecting the IndraDyn motors or other standardized encoders, such as Hiperface, is already integrated.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- ADVANCED control units meet the highest demands in performance and dynamics.
- Signal transfer via fiber optics guarantees the secure exchange of real-time data with minimal wiring.
- Conventional +/-10 V analog interface
- Digital inputs/outputs and analog input on board
- Standard , Servo and Synchronization modes available
- Intelligent operating panel with programming function supports device swap without a PC
- Scalable performance and functionality
- An additional plug-in MultiMediaCard gives you the option of simple transmission or duplication of your drive parameters.
- A standard encoder interface for IndraDyn motors is already featured among the BASIC control units.
- Integrated motion logic with IEC-compliant PLC
- Drive-integrated safety technology

Available Hardware Options

Overview	Basic Open Loop	Basic Analog	Basic PROFIBUS	Basic Sercos	Basic Universal	Double-axis Basic Universal [6]	Advanced
Control communication							
Analog/digital for Open Loop operation	●	–	–	–	–	–	–
Analog interface	–	●	–	–	–	–	○[1]
Parallel interface	–	–	–	–	○	–	○
PROFIBUS	–	–	●	–	○	–	○
sercos II	–	–	–	●	○	–	○
sercos III	–	–	–	–	○	–	○
Multi-Ethernet	–	–	–	–	○	–	○
CANopen	–	–	–	–	○	–	○
DeviceNet	–	–	–	–	○	–	○

● Standard
○ Optional

1) In conjunction with additional options
2) Encoder interface for IndraDyn motors
3) Only with sercos III and EtherCAT
4) Supply voltage 12 V
5) Supply voltage 5 V
6) Only in connection with power unit HMD

continued on next page

Available Hardware Options (continued)

Overview		Basic Open Loop	Basic Analog	Basic PROFIBUS	Basic Sercos	Basic Universal	Double-axis Basic Universal [6]	Advanced
Configurations								
Option 1		–	●[2]	●[2]	●[2]	●[2]	●/●	●
Option 2		–	–	–	–	●	●/●	●
Option 3		–	–	–	–	–	–	●
Safety option		–	●	●	●	●	●/●	●
Slot for MultiMediaCard		–	–	–	–	●	●	●
Encoder interfaces								
IndraDyn motors MSK, MKE, MAD and MAF, Hiperface®, 1 V_{pp} and 5 V TTL[4]		–	●	●	●	●	○	○
MHD and MKD motors		–	–	–	–	○	○	○
EnDat 2.1, 1 V_{pp} and 5 V TTL [5]		–	–	–	–	○	○	○
Safety options compliant with EN 13849-1 and EN 62061								
Safe Torque Off (category 3 PL e/SIL [3]		–	○	○	○	○	○	○
Safe Motion (category 3 PL d/SIL [2]		–	–	–	–	–	○	○
Extensions								
Encoder emulation		–	●	–	–	○	○	○
Analog I/O extension		–	–	–	–	○	○	○
Digital I/O extension		–	–	–	–	–	–	○
Digital I/O with SSI interface		–	–	–	–	–	–	○
Cross communication		–	–	–	–	–	–	○
Software module								
MultiMediaCard		–	–	–	–	○	○	○
Operator panel								
Standard		●	●	●	●	●	●	●
Cycle times								
Current control	[µs]	125						62.5
Speed control	[µs]	250						125
Position control	[µs]	500						250
PWM frequency								
4/8 kHz		●/●	●/●	●/●	●/●	●/●	●/●	●/●
12/16 kHz		–/–	–/–	–/–	–/–	–/–	–/–	●/●
Inputs/outputs								
Digital inputs/of which utilizable for probes		8/–	5/–	5/1	5/1	5/1	18/2	7/2
Digital inputs/outputs (user-defined settings)		–	4	3	3	3	4	4
Analog inputs		2	2	–	–	–	1	1
Analog outputs		2	–	–	–	–	2	2
Relay outputs		3	1	1	1	1	1	1
Interfaces								
RS232		●	●	●	●	●	●	●
Control voltage data								
Control voltage	[V]	DC 24						
Power consumption without options	[W]	7.5	8	7.5	7.5	6.5	7.5	6
Continuous current without options	[A]	0.31	0.33	0.31	0.31	0.27	0.31	0.25

● Standard
○ Optional

1) In conjunction with additional options
2) Encoder interface for IndraDyn motors
3) Only with sercos III and EtherCAT
4) Supply voltage 12 V
5) Supply voltage 5 V
6) Only in connection with power unit HMD

continued on next page

Available Firmware Options

		Control section used with
FWA-INDRV*-MPB-05VRS-D5-1-NNN-NN	Basic single-axis closed loop 05VRS without the possibility to select synchronization, servo or main spindle extension set	CSB01.1
FWA-INDRV*-MPB-05VRS-D5-1-SNC-NN	Basic single-axis closed loop 05VRS with synchronization only extension set	CSB01.1
FWA-INDRV*-MPB-07VRS-D5-0-NNN-NN	Basic single-axis open loop 07VRS	CSB01.1
FWA-INDRV*-MPB-07VRS-D5-1-NNN-NN	Basic single-axis closed loop 07VRS without the possibility to select synchronization, servo or main spindle extension set	CSB01.1
FWA-INDRV*-MPB-07VRS-D5-1-SNC-NN	Basic single-axis closed loop 07VRS with synchronization extension set	CSB01.1
FWA-INDRV*-MPB-08VRS-D5-1-NNN-NN	Basic single-axis closed loop 08VRS without the possibility to select synchronization, servo or main spindle extension set	CSB01.1
FWA-INDRV*-MPB-08VRS-D5-1-SNC-NN	Basic single-axis closed loop 08VRS with synchronization extension set	CSB01.1
FWA-INDRV*-MPH-07VRS-D5-1-NNN-NN	Advanced single-axis closed loop 07VRS without the possibility to select synchronization, servo or main spindle extension set	CSH01.1
FWA-INDRV*-MPH-08VRS-D5-1-NNN-NN	Advanced single-axis closed loop 08VRS without the possibility to select synchronization, servo or main spindle extension set	CSH01.1
FWA-INDRV*-MPH-07VRS-D5-1-SNC-NN	Advanced single-axis closed loop 07VRS with synchronization extension set	CSH01.1
FWA-INDRV*-MPC-07VRS-D5-1-NNN-ML	Advanced single-axis closed loop 07VRS for MLD master (software module PFM…-FW reqd.) FW	CSH01.3
FWA-INDRV*-MPC-07VRS-D5-1-SNC-ML	Advanced single-axis closed loop 07VRS with synchronization extension set for MLD master (software module PFM…-FW reqd.)	CSH01.3
FWA-INDRV*-MPC-08VRS-D5-1-NNN-ML	Advanced single-axis closed loop 08VRS for MLD master (software module PFM…-FW reqd.) FW	CSH01.3
FWA-INDRV*-MPC-07VRS-D5-1-ALL-MA	Advanced single-axis closed loop 07VRS with all extension sets for MLD master (software module PFM…-FW required)	CSH01.3
FWA-INDRV*-MPD-07VRS-D5-1-NNN-NN	BASIC double-axis closed loop 07VRS without the possibility to select synchronization, servo or main spindle extension set	CDB01.1
FWA-INDRV*-MPD-07VRS-D5-1-SNC-NN	BASIC double-axis closed loop 07VRS with synchronization extension set	CDB01.1
FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN	Basic single-axis closed loop 18VRS without the possibility to select synchronization, servo or spindle extension set	CSB02.1
FWA-INDRV*-MPB-18VRS-D5-1-SNC-NN	Basic single-axis closed loop 18VRS with synchronization only extension set	CSB02.1
FWA-INDRV*-MPB-18VRS-D5-1-SRV-NN	Basic single-axis closed loop 18VRS with servo only extension set	CSB02.1
FWA-INDRV*-MPM-18VRS-D5-1-NNN-NN	Basic multi-axis closed loop 18VRS without the possibility to select synchronization, servo or spindle extension set	CDB02.1
FWA-INDRV*-MPM-18VRS-D5-1-SNC-NN	Basic multi-axis closed loop 18VRS with synchronization only extension set	CDB02.1
FWA-INDRV*-MPM-18VRS-D5-1-SRV-NN	Basic multi-axis closed loop 18VRS with servo only extension set	CDB02.1
FWS-INDRV*-MP*-**VRS-NN-ETHERNETIP	Ethernet protocol preset – Ethernet/IP	Any with -ET-
FWS-INDRV*-MP*-**VRS-NN-PROFINETIO	Ethernet protocol preset – PROFINET I/O	Any with -ET-
FWS-INDRV*-MP*-**VRS-NN-ETHERCAT	Ethernet protocol preset – EtherCAT SoE	Any with -ET-

Software module

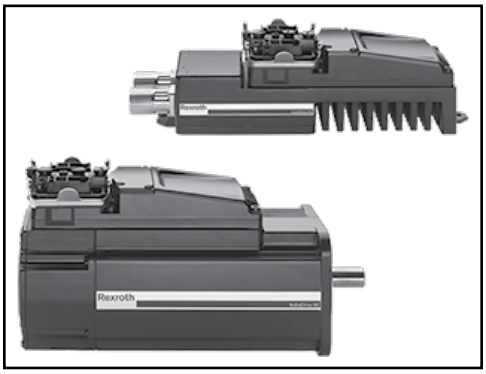
MultiMediaCard - PFM02.1-016-FW	Optional with Basic Universal and Advanced control sections	Cxx01.x
	Required for control sections and MPC-firmware with MLD master	

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911315255	CDB01.1C-S3-ENS-ENS-NNN-NNN-NN-S-NN-FW	3	5 day(s)
R911339882	CDB02.1B-ET-EC-EC-EC-S4-S4-EC-NN-FW	3	5 day(s)
R911338542	CDB02.1B-ET-EC-EC-NN-S4-S4-NN-NN-FW	3	5 day(s)
R911312378	CSB01.1C-CO-ENS-NNN-NN-S-NN-FW	3	5 day(s)
R911327307	CSB01.1C-ET-ENS-EN2-NN-S-NN-FW	3	5 day(s)
R911326813	CSB01.1C-ET-ENS-NNN-NN-S-NN-FW	3	5 day(s)
R911305278	CSB01.1C-PB-ENS-NNN-NN-S-NN-FW	3	5 day(s)
R911307286	CSB01.1C-PL-ENS-NNN-NN-S-NN-FW	3	5 day(s)
R911315253	CSB01.1C-S3-ENS-EN2-NN-S-NN-FW	3	5 day(s)
R911328086	CSB01.1C-S3-ENS-NNN-L2-S-NN-FW	3	5 day(s)
R911313871	CSB01.1C-S3-ENS-NNN-NN-S-NN-FW	3	5 day(s)
R911305500	CSB01.1C-SE-ENS-EN2-NN-S-NN-FW	3	5 day(s)
R911305277	CSB01.1C-SE-ENS-NNN-NN-S-NN-FW	3	5 day(s)
R911305274	CSB01.1N-AN-ENS-NNN-NN-S-NN-FW	3	5 day(s)
R911305273	CSB01.1N-FC-NNN-NNN-NN-S-NN-FW	3	5 day(s)

R911305275	CSB01.1N-PB-ENS-NNN-NN-S-NN-FW	3	5 day(s)
R911305276	CSB01.1N-SE-ENS-NNN-NN-S-NN-FW	3	5 day(s)
R911340991	CSB02.1A-ET-EC-EC-L3-NN-NN-FW	3	5 day(s)
R911339883	CSB02.1A-ET-EC-NN-L3-NN-NN-FW	3	5 day(s)
R911339884	CSB02.1B-ET-EC-EC-S4-NN-NN-FW	3	5 day(s)
R911338543	CSB02.1B-ET-EC-NN-S4-NN-NN-FW	3	5 day(s)
R911328178	CSH01.1C-ET-ENS-NNN-NNN-S2-S-NN-FW	3	5 day(s)
R911328094	CSH01.1C-S3-EN2-NNN-NNN-S2-S-NN-FW	3	5 day(s)
R911312309	CSH01.1C-S3-ENS-NNN-NNN-NN-S-NN-FW	3	5 day(s)
R911327303	CSH01.3C-ET-ENS-NNN-CCD-NN-S-NN-FW	3	5 day(s)
R911328005	CSH01.3C-ET-ENS-NNN-CCD-S2-S-NN-FW	3	5 day(s)
R911326825	CSH01.3C-NN-ENS-EN2-CCD-NN-S-NN-FW	3	5 day(s)
R911328912	CSH01.3C-NN-ENS-NNN-CCD-NN-S-NN-FW	3	5 day(s)
R911327681	CSH01.3C-PL-ENS-EN2-CCD-NN-S-NN-FW	3	5 day(s)
R911318477	FWA-INDRV*-MPB-05VRS-D5-1-NNN-NN	3	5 day(s)
R911318479	FWA-INDRV*-MPB-05VRS-D5-1-SNC-NN	3	5 day(s)
R911328698	FWA-INDRV*-MPB-07VRS-D5-0-NNN-NN	3	5 day(s)
R911328706	FWA-INDRV*-MPB-07VRS-D5-1-NNN-NN	3	5 day(s)
R911328708	FWA-INDRV*-MPB-07VRS-D5-1-SNC-NN	3	5 day(s)
R911334693	FWA-INDRV*-MPB-08VRS-D5-1-NNN-NN	3	5 day(s)
R911334695	FWA-INDRV*-MPB-08VRS-D5-1-SNC-NN	3	5 day(s)
R911339325	FWA-INDRV*-MPB-18VRS-D5-1-SRV-NN	5	5 day(s)
R911328767	FWA-INDRV*-MPC-07VRS-D5-1-ALL-MA	3	5 day(s)
R911328760	FWA-INDRV*-MPC-07VRS-D5-1-NNN-ML	3	5 day(s)
R911328762	FWA-INDRV*-MPC-07VRS-D5-1-SNC-ML	3	5 day(s)
R911334717	FWA-INDRV*-MPC-08VRS-D5-1-NNN-ML	3	5 day(s)
R911328716	FWA-INDRV*-MPD-07VRS-D5-1-NNN-NN	3	5 day(s)
R911328717	FWA-INDRV*-MPD-07VRS-D5-1-SNC-NN	3	5 day(s)
R911328741	FWA-INDRV*-MPH-07VRS-D5-1-NNN-NN	3	5 day(s)
R911328743	FWA-INDRV*-MPH-07VRS-D5-1-SNC-NN	3	5 day(s)
R911334737	FWA-INDRV*-MPH-08VRS-D5-0-NNN-ML	0	0 day(s)
R911334747	FWA-INDRV*-MPH-08VRS-D5-1-NNN-NN	3	5 day(s)
R911339303	FWA-INDRV*-MPM-18VRS-D5-1-NNN-NN	3	5 day(s)
R911339304	FWA-INDRV*-MPM-18VRS-D5-1-SNC-NN	3	5 day(s)
R911339305	FWA-INDRV*-MPM-18VRS-D5-1-SRV-NN	3	5 day(s)
R911330278	FWS-INDRV*-MP*-**VRS-NN-ETHERCAT	5	5 day(s)
R911330279	FWS-INDRV*-MP*-**VRS-NN-ETHERNETIP	5	5 day(s)
R911330280	FWS-INDRV*-MP*-**VRS-NN-PROFINETIO	5	5 day(s)
R911296958	PFM02.1-016-FW	5	5 day(s)

GoTo Focused Delivery Program: Drive Systems

Drive Systems - IndraDrive Mi - Drives



IndraDrive Mi cabinet-free technology from Rexroth for the highest flexibility and efficiency. Reducing: installation time, cabinet size up to 90%, wiring up to 90% due to hybrid cable technology, and cabinet cooling cost up to 90% because the drives are on the machine with IP65 protection. IndraDrive Mi has multi-Ethernet protocol communication hardware and meets the highest openness and consistency requirements. With drive-integrated Safety technology with the ability to create Safety zones for effective protection of people, machine, and work pieces increasing the uptime and production of the machine.

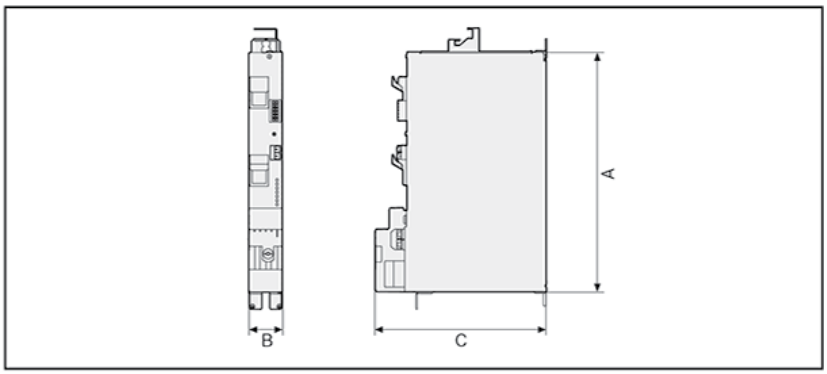
For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- Multi-Ethernet:
  - Sercos III;
  - PROFINET IO;
  - EtherNet/IP;
  - EtherCat
- Onboard digital inputs and outputs (4), 2 of which can be used as quick inputs for probes
- Optical encoder, singleturn/multiturn-absolute
- Capacitive encoder, singleturn/multiturn-absolute
- Onboard Safe Torque Off certified with Cat 4 PL e in conformance with EN ISO 13849-1 and with SIL 3 in conformance with EN 62061

Technical Data

KCU – Compact Connection Kit



Performance / Dimensions

Type	Nominal voltage input	Continuous current	A	B	C	Weight
	V	A	(mm)	(mm)	(mm)	(kg)
KCU02.2N-ET-ET*-025-NN-N-NN-NW	DC 540 … 750	25	352	50	252	3.8

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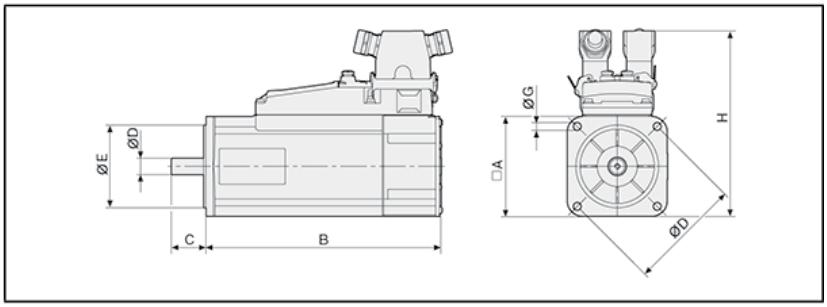
Technical Data (continued)

KSM – Motor-Integrated Drive



Peformance Data

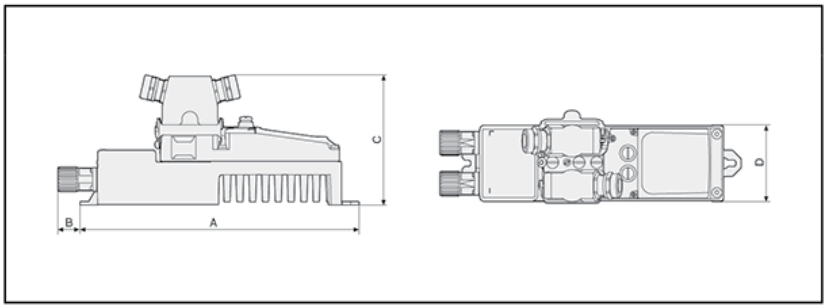
Type	Maximum speed [1]	Continuous torque at standstill	Maximum torque	Continuous current at standstill	Maximum current	Moment of inertia
	nMax (1/min)	M0 (Nm)	MMax (Nm)	I0 (A)	IMax (A)	J (kgm^2)
KSM02.1B-041C-42N	5,500	2.2	9.4	1.5	6.8	0.00017
KSM02.1B-061C-35N	4,300	6	25	3.3	14.9	0.00087
KSM02.1B-061C-61N	6,000	5.5	18	5.2	17.7	
KSM02.1B-071C-35N	4,700	10	28	6	17.7	0.00173

Dimensional Data

Type	A	B	C	Ø D	Ø E	Ø F	Ø G	H	Weight [2]
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
KSM02.1B-041C-42N	82	252	30	14	50	95	6.6	194	5.6 / 5.9
KSM02.1B-061C-35N	115	271	40	19	95	130	9	219	9.6 / 10.1
KSM02.1B-061C-61N									
KSM02.1B-071C-35N	140	307	58	32	130	165	11	247	14.1 / 15.7

1) At 750 V DC bus voltage
2) Values without/with holding brake

KMS – Near Motor Drive



Performance / Dimensional Data

Type	Continuous current	Maximum current	A	B	C	D	Weight
	(A)	(A)	(mm)	(mm)	(mm)	(mm)	(kg)
KMS02.1B-A018	6	18	316	25	147	87	2.5

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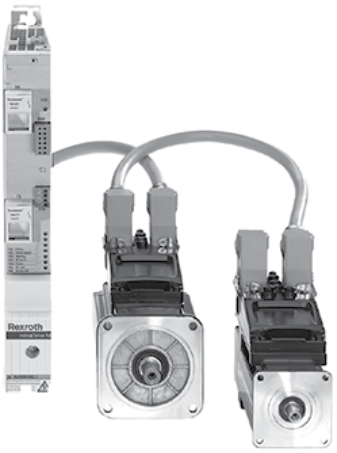
Technical Data (continued)



Hybrid cables (RKH….) are fully assembled. The coded connectors guarantee connection with the correct polarity. Every drive chain connected to one KCU with one or more IndraDrive Mi drives (KSM and KMS) is terminated with an end connector RHS0014.

The safety technology is connected at the start of a safety technology zone using the cable RKB0033. The RBS0023 plug is attached to all other participants.

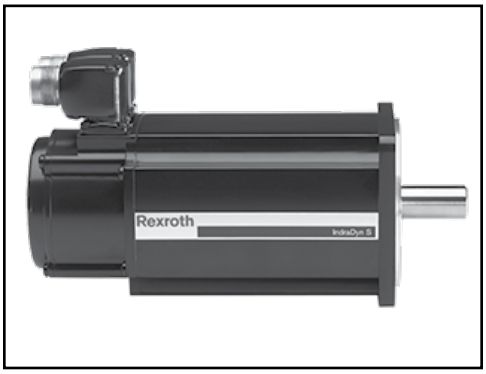
The IndraDrive Mi, motor-integrated drive (KSM) and near motor drive (KMS), is now required to be ordered via single part number as IndraDrive Mi Set. A listing of the IndraDrive Mi Sets and their corresponding components is shown below:

IndraDrive Mi sets in GoTo:			IndraDrive Mi hardware and firmware reference:	
R911347283	INDRADRIVE MI KMS02.1 SET 01	consisting of:	R911335298	KMS02.1B-A018-P-D7-ET-ENH-L3-NN-FW
			R911333283	FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN
R911347312	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911336102	KSM02.1B-041C-42N-M1-HP0-ET-L3-D7-NN-FW
			R911333283	FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN
R911347317	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911336101	KSM02.1B-041C-42N-M1-HP2-ET-L3-D7-NN-FW
			R911333283	FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN
R911347367	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911335801	KSM02.1B-061C-35N-M1-HP0-ET-L3-D7-NN-FW
			R911333283	FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN
R911347370	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911335803	KSM02.1B-061C-35N-M1-HP2-ET-L3-D7-NN-FW
			R911333283	FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN
R911347395	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911339328	KSM02.1B-061C-61N-M1-HP0-ET-L3-D7-NN-FW
			R911333283	FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN
R911347418	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911336098	KSM02.1B-071C-35N-M1-HP0-ET-L3-D7-NN-FW
			R911333283	FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN
R911371849	INDRADRIVE MI KMS02.1 SET 01	consisting of:	R911335298	KMS02.1B-A018-P-D7-ET-ENH-L3-NN-FW
			R911339321	FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN
R911372924	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911336102	KSM02.1B-041C-42N-M1-HP0-ET-L3-D7-NN-FW
			R911339321	FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN
R911372925	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911336101	KSM02.1B-041C-42N-M1-HP2-ET-L3-D7-NN-FW
			R911339321	FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN
R911372926	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911335801	KSM02.1B-061C-35N-M1-HP0-ET-L3-D7-NN-FW
			R911339321	FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN
R911372927	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911335803	KSM02.1B-061C-35N-M1-HP2-ET-L3-D7-NN-FW
			R911339321	FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN
R911372928	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911339328	KSM02.1B-061C-61N-M1-HP0-ET-L3-D7-NN-FW
			R911339321	FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN
R911372929	INDRADRIVE MI KSM02.1 SET 01	consisting of:	R911336098	KSM02.1B-071C-35N-M1-HP0-ET-L3-D7-NN-FW
			R911339321	FWA-INDRV*-MPB-18VRS-D5-1-NNN-NN

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911347283	INDRADRIVE MI KMS02.1 SET 01	3	5 day(s)
R911371849	INDRADRIVE MI KMS02.1 SET 01	3	5 day(s)
R911347312	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911347317	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911347367	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911347370	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911347395	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911347418	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911372924	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911372925	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911372926	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911372927	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911372928	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911372929	INDRADRIVE MI KSM02.1 SET 01	3	5 day(s)
R911339232	KCU02.2N-ET-ET*-025-NN-N-NN-NW	3	5 day(s)

GoTo Focused Delivery Program: Drive Systems

Drive Systems - IndraDyn S - MSK Motors



The particularly outstanding features of the MSK range of motors are its wide power spectrum and narrow size increments. The high torque density of these synchronous servo motors allows a particularly compact design with maximum torques of up to 495 Nm.

A number of further options, such as the shaft keyway, holding brake, reduced runout and the high protection category IP65 mean that they can be used in virtually any application.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToDrivesystems***

Features

- Motors with the highest level of efficiency
- High protection category IP65
- Multi-turn encoder (Hiperface) - 128 increments with 4,096
- Encoder systems for a wide and diverse range of applications
- Digital type plate and parameter memory

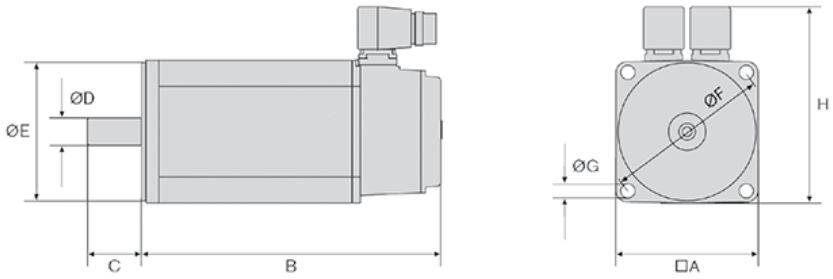
Performance Data

Type	Maximum speed nMax (1/min)	Continuous torque at standstill M0 (Nm)	Maximum torque MMax (Nm)	Continuous current at standstill I0 (A)	Maximum current IMax (A)	Moment of inertia J (kgm2)
MSK030C-0900	9,000	0.4	1.8	1.5	6.8	0.000013
MSK040B-0600	7,500	1.7	5.1	2	8	0.0001
MSK040C-0450	6,000	2.7	8.1	2.4	9.6	0.00014
MSK040C-0600	7,500			3.1	12.4	
MSK050C-0600	6,000	5	15	6.2	24.8	0.00033
MSK060C-0300	4,900	8	24	4.8	19.2	0.0008
MSK061C-0600	6,000		32	7.7	34.7	0.000752
MSK071E-0300	4,200	23	84	12.5	56.3	0.0029
MSK071E-0450	6,000			20	90.1	
MSK076C-0300	4,700	12	43.5	7.2	32.4	0.0043
MSK100B-0300	4,500	28	102	17.4	78.3	0.0192
MSK100C-0300	4,500	38	148	21.6	97.2	0.0273
MSK101D-0450	6,000	50	160	41.7	187.7	0.00932

continued on next page

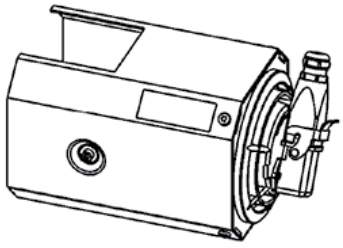
Dimensional Data

Type	A (mm)	B (mm)	C (mm)	Ø D (mm)	Ø E (mm)	Ø F (mm)	Ø G (mm)	H (mm)	Weight (kg)
MSK030C-0900	54	152.5	20	9	40	63	4.5	98.5	1.3
MSK040B-0600	82	155.5	30	14	50	95	6.6	124.5	2.8
MSK040C-0450	82	185.5	30	14	50	95	6.6	124.5	3.6
MSK040C-0600									
MSK050C-0600	98	203	40	19	95	115	9	134.5	5.4
MSK060C-0300	116	226	50	24	95	130	9	156	8.4
MSK061C-0600	116	264	40	19	95	130	9	156	8.3
MSK071E-0300	140	352	58	32	130	165	11	202	23.5
MSK071E-0450									
MSK076C-0300	140	292.5	50	24	110	165	11	180	13.8
MSK100B-0300	192	368	60	32	130	215	14	211.5	34
MSK100C-0300	192	434	60	32	130	215	14	211.5	45.1
MSK101D-0450	192	410	80	38	180	215	14	262	40



Axial blower for MSK motor		LEM-AB-140T-11-NNNN	LEM-AB-140T-21-NNNN	LEM-AB-192T-11-NNNN	LEM-AB-192T-21-NNNN
Nominal connecting voltage	V	1AC115V	1AC230V	1AC115V	1AC230V
Nominal frequency	Hz	60	50/60	60	50/60
Fan flow	A	0.44	0.20/0.18	0.48	0.21/0.20
Power consumption	VA	51	46/41	55	48/46
Protection class acc. to EN 60034-5	–	IP65			
Thermal class acc. to EN 60034-1	T.CL.	105			
Thermal protection		Thermo Protected Fan (UL: self protected); no circuit with external motor protection necessary			
Air flow direction	–	blowing			
Mass	kg			4.3	3.8
Designed to fit motor frame sizes [1]		MSK070, MSK071, MSK075, MSK076		MSK100, MSK101	

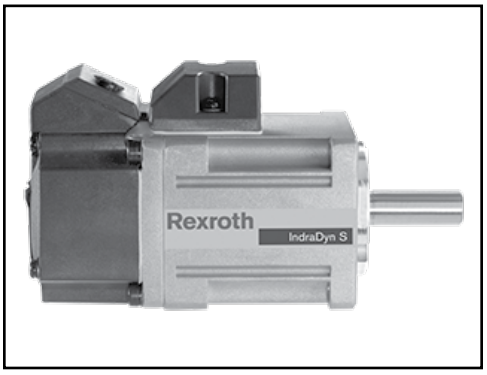
1) Some execption due to motor stack length apply – for details refer to Selection Table in the IndraDyn S _MSK Project Planning Manual (R911296289).



Part Number	Description	Max. Quantity	Shipment (Business Days)
R911325860	LEM-AB-140T-11-NNNN	3	5 day(s)
R911325861	LEM-AB-140T-21-NNNN	3	5 day(s)
R911325862	LEM-AB-192T-11-NNNN	3	5 day(s)
R911325863	LEM-AB-192T-21-NNNN	3	5 day(s)
R911308683	MSK030C-0900-NN-M1-UG0-NNNN	3	5 day(s)
R911308684	MSK030C-0900-NN-M1-UG1-NNNN	3	5 day(s)
R911308691	MSK030C-0900-NN-M1-UP0-NNNN	3	5 day(s)
R911308692	MSK030C-0900-NN-M1-UP1-NNNN	3	5 day(s)
R911306058	MSK040B-0600-NN-M1-UG0-NNNN	3	5 day(s)
R911306059	MSK040B-0600-NN-M1-UG1-NNNN	3	5 day(s)
R911320614	MSK040C-0450-NN-M1-UP0-NNNN	3	5 day(s)
R911320757	MSK040C-0450-NN-M1-UP1-NNNN	3	5 day(s)
R911306060	MSK040C-0600-NN-M1-UG0-NNNN	3	5 day(s)
R911306061	MSK040C-0600-NN-M1-UG1-NNNN	3	5 day(s)
R911306387	MSK040C-0600-NN-M1-UP0-NNNN	3	5 day(s)
R911306388	MSK040C-0600-NN-M1-UP1-NNNN	3	5 day(s)
R911306383	MSK040C-0600-NN-S1-UP0-NNNN	3	5 day(s)
R911299914	MSK050C-0600-NN-M1-UP0-NNNN	3	5 day(s)
R911299915	MSK050C-0600-NN-M1-UP1-NNNN	3	5 day(s)
R911307221	MSK060C-0300-NN-M1-UP0-NNNN	3	5 day(s)
R911307222	MSK060C-0300-NN-M1-UP1-NNNN	3	5 day(s)
R911317019	MSK061C-0600-NN-M1-UP0-NNNN	3	5 day(s)
R911317757	MSK061C-0600-NN-M1-UP1-NNNN	3	5 day(s)
R911312032	MSK061C-0600-NN-S1-UG0-NNNN	3	5 day(s)
R911311899	MSK071E-0300-NN-M1-UP0-NNNN	3	5 day(s)
R911313947	MSK071E-0300-NN-M1-UP1-NNNN	3	5 day(s)
R911310383	MSK071E-0450-NN-M1-UG0-NNNN	3	5 day(s)
R911311789	MSK071E-0450-NN-M1-UG1-NNNN	3	5 day(s)
R911316339	MSK076C-0300-NN-M1-UP0-NNNN	3	5 day(s)
R911317624	MSK076C-0300-NN-M1-UP1-NNNN	3	5 day(s)
R911315350	MSK100B-0300-NN-M1-BP0-NNNN	3	5 day(s)
R911316856	MSK100B-0300-NN-M1-BP1-NNNN	3	5 day(s)
R911311545	MSK100C-0300-NN-M1-BP0-NNNN	3	5 day(s)
R911317729	MSK100C-0300-NN-M1-BP2-NNNN	3	5 day(s)
R911311852	MSK101D-0450-NN-M1-BP0-NNNN	3	5 day(s)
R911333387	MSK101D-0450-NN-M1-BP2-NNNN	3	5 day(s)

GoTo Focused Delivery Program: Drive Systems

Drive Systems - IndraDyn S - MSM Motors



Maintenance-free MSM motors are available in five sizes rated at up to 750 W continuous mechanical power. These short-length motors feature high power density and minimized flange dimensions, making them the ideal choice in a wide range of application scenarios.

The IP54 motors come with an absolute encoder and optional holding brake, and they can easily be connected to IndraDrive Cs power units with a 3 AC 230 V line input.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- Torque up to 7.1 Nm
- Speed up to 5,000 rpm
- Multi-turn absolute encoder
- High dynamic performance
- High performance density

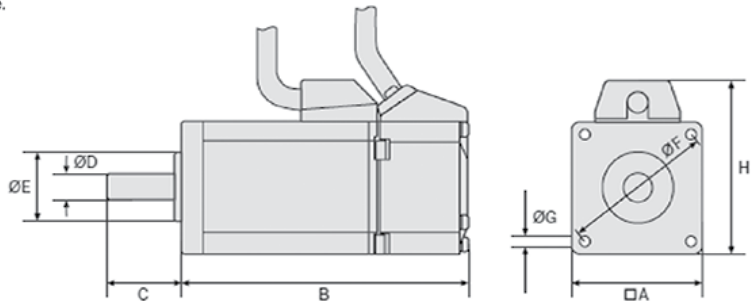
Performance Data

Type	Rated power	Continuous torque at standstill	Maximum torque	Maximum speed	Moment of inertia
	PN (W)	M0 (Nm)	MMax (Nm)	nMax (1/min)	J (kgm²)
MSM019B	100	0.32	0.95	5,000	0.0000025
MSM031B	200	0.64	1.91	5,000	0.0000051
MSM031C	400	1.3	3.8	5,000	0.000014
MSM041B	750	2.4	7.1	4,500	0.000087

Dimensional Data

Type	A (mm)	B (mm) 1)	C (mm)	Ø D (mm)	Ø E (mm)	Ø F (mm)	Ø G (mm)	H (mm)	Weight (kg) 1)
MSM019B	38	92 / 122	25	8	30	45	3.4	51	0.47 / 0.68
MSM031B	60	79 / 115.5	30	11	50	70	4.5	73	0.82 / 1.3
MSM031C	60	98.5 / 135	30	14	50	70	4.5	73	1.2 / 1.7
MSM041B	80	112 / 149	35	19	70	90	6	93	2.3 / 3.1

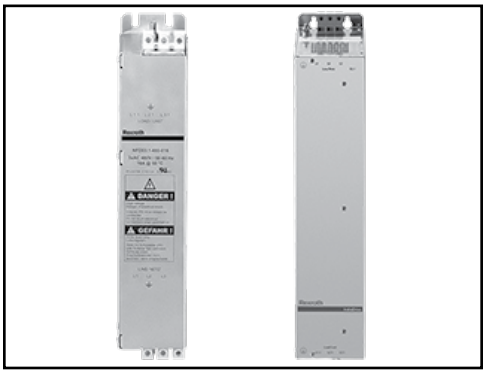
1) dimensions with / without brake.



Part Number	Description	Max. Quantity	Shipment (Business Days)
R911325131	MSM019B-0300-NN-M0-CH0	3	5 day(s)
R911325132	MSM019B-0300-NN-M0-CH1	3	5 day(s)
R911325135	MSM031B-0300-NN-M0-CH0	3	5 day(s)
R911325139	MSM031C-0300-NN-M0-CH0	3	5 day(s)
R911325140	MSM031C-0300-NN-M0-CH1	3	5 day(s)
R911325143	MSM041B-0300-NN-M0-CH0	3	5 day(s)
R911325144	MSM041B-0300-NN-M0-CH1	3	5 day(s)

GoTo Focused Delivery Program: Drive Systems

Drive Systems - Drive Components - Line Filters



Mains filters ensure that the EMC limit values are adhered to and suppress leakage current generated by line capacitors. Our mains filters are optimally coordinated with the power units and are scalable in regards to current, number of drives and motor cable length. They can be combined with our shielded motor cables for trouble- free operation conforming to EN 61800-3, Category C3, Second environment, even with single cable lengths of up to 75 m.

For complete engineering and design information: ***GoTo GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- See Tech. Data

Technical Data

Main filters for HCS converters						
Type	Continuous current	Power dissipation	Width	Height	Depth	Mass
	A	W	mm	mm	mm	kg
NFD03.1-480-007	7	3.9	50	160	90	0.7
NFD03.1-480-016	16	6.4	55	220	90	1
NFD03.1-480-030	30	11.9	60	270	100	1.4
NFD03.1-480-055	55	25.9	90	220	105	2
NFD03.1-480-075	75	30.4	90	240	145	3.5
NFD03.1-480-130	130	38	100	240	160	4.7
Main filters for HCS converters and HMV01.1E power supplies (feed)						
HNF01.2D-F240-E0051-A-480-NNNN	51	75	100	440	262	15
HNF01.2D-F240-E0125-A-480-NNNN	125	200	150	440	262	18
HNF01.1A-F240-E0202-A-480-NNNN	202	< 238	150	440	262	29
Main filters for HMV01.1R power supplies (regen)						
HNF01.1A-F240-R0026-A-480-NNNN	26	< 73	100	440	262	14
HNF01.1A-F240-R0065-A-480-NNNN	65	< 163	150	440	262	25
HNF01.1A-F240-R0094-A-480-NNNN	94	< 135	150	440	262	28
HNF01.1A-H350-R0180-A-480-NNNN	180	< 305	250	440	262	45

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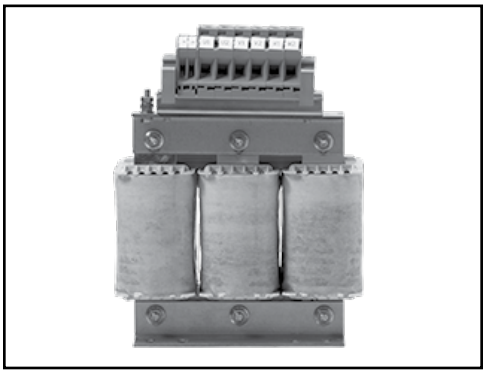
Part Number	Description	Max. Quantity	Shipment (Business Days)
R911307938	HNF01.1A-F240-E0202-A-480-NNNN	1	5 day(s)
R911306539	HNF01.1A-F240-R0026-A-480-NNNN	1	5 day(s)
R911306533	HNF01.1A-F240-R0065-A-480-NNNN	1	5 day(s)
R911306295	HNF01.1A-F240-R0094-A-480-NNNN	1	5 day(s)
R911315536	HNF01.1A-H350-R0180-A-480-NNNN	1	5 day(s)
R911337618	HNF01.2D-F240-E0051-A-480-NNNN	1	5 day(s)
R911337620	HNF01.2D-F240-E0125-A-480-NNNN	1	5 day(s)
R911286917	NFD03.1-480-007	5	5 day(s)
R911286918	NFD03.1-480-016	5	5 day(s)
R911286919	NFD03.1-480-030	5	5 day(s)
R911286920	NFD03.1-480-055	5	5 day(s)
R911286922	NFD03.1-480-075	5	5 day(s)
R911286923	NFD03.1-480-130	5	5 day(s)

GoTo Focused Delivery Program: Drive Systems

Drive Systems - Drive Components - Choke



In connection with the mains chokes, converters and infeed power supply units realize higher DC bus continuous power. They reduce the harmonics in the line current while simultaneously preventing circuit feedback. When using supply units with line regeneration, these components are always required. This combination always complies to the permissible EMC values for industrial networks stipulated by EN 61000-2-4.

For complete engineering and design information: ***GoTo GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- See Tech. Data

Technical Data

Main filters for HCS converters								
Type	Continuous current	Power dissipation	Nominal inductance	Capacitance	Width	Height	Depth	Mass
	A	W	µH	µF	mm	mm	mm	kg
HNL01.1E-1000-N0012-A-500-NNNN	12	40	3 x 1000	–	120	164	61	2.7
HNL01.2E-0400-N0051-A-480-NNNN	51	165	3 x 400	–	180	225	112	13.5
HNL01.1E-0200-N0125-A-480-NNNN	125	170	3 x 200	–	230	295	148	24.0
HNL01.1E-0170-N0146-A-500-NNNN	146	130	3 x 170	–	250	205	230	23.0
HNL01.1E-0100-N0202-A-480-NNNN	202	200	3 x 100	–	265	350	152	33.0
HNL01.1R-0980-C0026-A-480-NNNN	26	225	3 x 980	3 x 10	210	245	172	16.0
HNL01.1R-0590-C0065-A-480-NNNN	65	310	3 x 590	3 x 20	300	360	205	45.0
HNL01.1R-0540-C0094-A-480-NNNN	94	420	3 x 540	3 x 20	340	385	229	65.0
HNL01.1R-0300-C0180-A-480-NNNN	180	800	3 x 300	3 x 30	340	400	261	73.0

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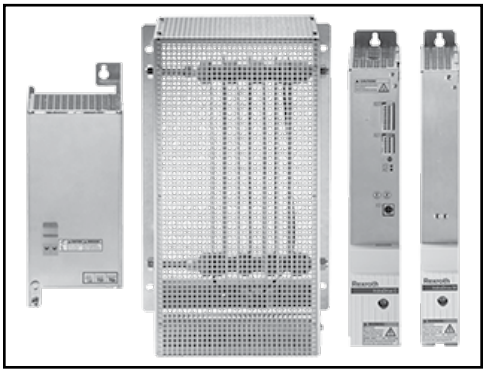
Part Number	Description	Max. Quantity	Shipment (Business Days)
R911306578	HNL01.1E-0100-N0202-A-480-NNNN	1	5 day(s)
R911307072	HNL01.1E-0170-N0146-A-500-NNNN	1	5 day(s)
R911306579	HNL01.1E-0200-N0125-A-480-NNNN	1	5 day(s)
R911306775	HNL01.1E-1000-N0012-A-500-NNNN	1	5 day(s)
R911315480	HNL01.1R-0300-C0180-A-480-NNNN	1	5 day(s)
R911306582	HNL01.1R-0540-C0094-A-480-NNNN	1	5 day(s)
R911306583	HNL01.1R-0590-C0065-A-480-NNNN	1	5 day(s)
R911306584	HNL01.1R-0980-C0026-A-480-NNNN	1	5 day(s)
R911335903	HNL01.2E-0400-N0051-A-480-NNNN	1	5 day(s)

Drive Systems - Drive Components - Resistor & Capacity Modules



In applications where high regeneration occurs over a relatively long period of time, braking resistors are used. This is the case, when e.g. lowering large loads or when braking high mass moments of inertia. Depending on the braking power required there is a choice of compact brake resistors of different power levels and designs for each converter.

For complete engineering and design information: ***GoTo GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- See Tech. Data

Technical Data

- **The DC bus resistor unit** increases the continuous and peak regenerative power. The brake unit also makes it possible to have the DC bus short circuit function available in the drive system.
- **Capacity modules** improve the energy balance in applications where machining cycles take place in rapid succession, such as roll feeds or cross cutting lines. Connected to the DC bus, the capacity modules act as a temporary energy storage unit.

Braking Resistor	Max. energy consumption	Braking power				Resistance	Width	Height	Depth	Mass
		Duration	Max.	$t_{on\ time}$	$t_{cycle\ time}$					
	kWs	kW	kW	s	s	Ω	mm	mm	mm	kg
HLR01.1N-0300-N17R5-A-007-NNNN	37	0.3	37	1	120	20.5	123	300	196	3.0
HLR01.1N-02K0-N15R0-A-007-NNNN	137	2	40	3.4	120	16.7	185	749	120	6.2
HLR01.1N-04K5-N07R4-A-007-NNNN	246	4.5	81	3.0	120	8.3	300	270	490	9.5

DC Bus Resistor Unit	Max. energy consumption	Braking power				Width	Height	Depth	Mass
		Duration	Max.	$t_{on\ time}$	$t_{cycle\ time}$				
	kWs	kW	kW	s	s	mm	mm	mm	kg
HLB01.1C-01K0-N06R0-A-007-NNNN	100	1	100	1	100	65	352	252	5.8
HLB01.1D-02K0-N03R4-A-007-NNNN	500	2	180	2.7	250	100	440	309	12.2

Capacity modules	Capacitance	Width	Height	Depth	Weight
	mF	mm	mm	mm	kg
HLC01.1C-02M4-A-007-NNNN	2.4	50	352	251.5	4.3
HLC01.1D-05M0-A-007-NNNN	5	75	440	309	8.6

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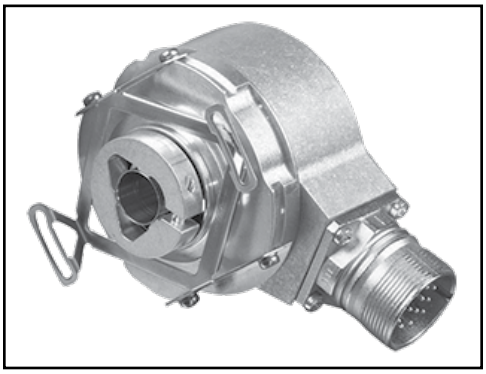
Part Number	Description	Max. Quantity	Shipment (Business Days)
R911299878	HLB01.1C-01K0-N06R0-A-007-NNNN	1	5 day(s)
R911299879	HLB01.1D-02K0-N03R4-A-007-NNNN	1	5 day(s)
R911308870	HLC01.1C-02M4-A-007-NNNN	1	5 day(s)
R911308869	HLC01.1D-05M0-A-007-NNNN	1	5 day(s)
R911306870	HLR01.1N-02K0-N15R0-A-007-NNNN	2	5 day(s)
R911305931	HLR01.1N-0300-N17R5-A-007-NNNN	2	5 day(s)
R911306921	HLR01.1N-04K5-N07R4-A-007-NNNN	2	5 day(s)

Drive Systems - Drive Components - Master Encoder



Master Encoders GDS02.1 (Single-turn) / GDM02.1 (Multi-turn) are designed to be used as rotary encoders within engineering and machine constructions.

For application specific use of the encoders are devices with different designs available.

For complete engineering and design information: ***GoTo GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- See Tech. Data

Technical Data

	GDS02.1 Singleturn	GDM02.1 Multiturn
Absolute position values	EnDat 01	EnDat 01
Positions / U	8,192 (13bit)	
Distinguishable within ... revolutions	1	4,096
Code	Dual	Dual
Electr. allowed speed / with system accuracy	1,500 min-1 / ±1 LSB 12,000 min-1 / ±50 LSB	
Incremental signals	1 Vss	
Increments	2,048	2,048
Typical limit frequency - 3 dB	≥ 400 kHz	≥ 400 kHz
Power supply	3.6 ... 14 V	3.6 ... 14 V
Max. current consumption	≤ 160 mA	≤ 200 mA
Electrical connection	Flange socket	
Max. cable length	75 m	75 m
Drive shaft	one side open hollow shaft D = 12 mm	
Mech. permitted speed	max. 12,000 min^{-1}	max. 10,000 min^{-1}
Starting torque	≤ 0.01 Nm	
Moment of inertia of rotor	4.3 x 10^{-6} kgm^2	
Permitted axial moving of the drive shaft	± 1 mm	
Vibration 55 bis 2,000 Hz	≤ 300 m/s^2 (EN60068-2-6)	
Shock 6ms	≤ 1,000 m/s^2 (EN60068-2-27)	
Operating temperature	–40 ... 100 °C	
Protection class EN 60529	IP 67 on the housing; IP 64 on the shaft input	
Mass	approx. 0.30 kg	

continued on next page

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911323380	GDM02.1-2048-014V-H12,0	1	5 day(s)
R911323378	GDS02.1-2048-014V-H12,0	1	5 day(s)

GoTo Focused Delivery Program: Drive Systems

Drive Systems - Drive Components - Accessories

Basic accessories HAS01 - The basic accessories contain all the mounting parts and fixing elements for installing the devices referenced in the table below (not needed for HCS01.1).

Shield connection HAS02 - The shield connection plate is an EMC-compatible method of connecting the motor power cable to the devices referenced in the table below. It also serves as a cord grip (not needed for HCS01.1).

Connection Points HAS05 - Universal adapter for safety technology for easier X41 wiring of 2nd channel.

Also includes installation hardware used in conjunction with IndraDrive Mi.

For complete engineering and design information: ***GoTo GoTo www.boschrexroth-us.com/GoToDriveSystems***

Features

- See Tech. Data

Accessories

Basic accessories HAS01 – The basic accessories contain all the mounting parts and fixing elements for installing the devices referenced in the table below (not needed for HCS01.1).	
Type	**needed with**
HAS01.1-065-NNN-CN	HCS02.1...W0012/W0028
HAS01.1-065-072-CN	HCS02.1...W0028
HAS01.1-105-NNN-CN	HCS02.1...W0054/W0070
HAS01.1-105-072-CN	HCS02.1...W0054/W0070
HAS01.1-125-072-CN	HCS03.1...W0070
HAS01.1-225-072-CN	HCS03.1...W0100/W0150
HAS01.1-350-NNN-CN	HCS03.1...W0210
HAS01.1-050-072-MN	HMS01.1...W0020/W0036, HMD01.1...W0012/W0020, KCU02.2N
HAS01.1-050-072-MN	HMS01.1...W0020/W0036, HMD01.1...W0012/W0020
HAS01.1-075-072-MN	HMS01.1...W0054, HMD01.1...W0036
HAS01.1-100-072-MN	HMS01.1...W0070
HAS01.1-125-072-MN	HMS01.1...W0110
HAS01.1-150-072-MN	HMS01.1...W0150, HMV01.1E-W0030
HAS01.1-175-072-MN	HMV01.1R-W0018
HAS01.1-200-072-MN	HMS01.1...W0210
HAS01.1-250-072-MN	HMV01.1E-W0075, HMV01.1R-W0045
HAS01.1-350-072-MN	HMV01.1R-W0065
HAS01.1-350-NNN-MN	HMV01.1R-W0120

Shield connection HAS02 –	The shield connection plate is an EMC-compatible method of connecting the motor power cable to the devices referenced in the table below. It also serves as a cord grip (not needed for HCS01.1).
Type	**needed with**
HAS02.1-001-NNN-NN	HMS01.1...W0020-W0070
HAS02.1-002-NNN-NN	HCS02.1...W0012-W0070, HMD01.1...W0012-W0036
HAS02.1-003-NNN-NN	HMS01.1...W0110-W0210
HAS02.1-004-NNN-NN	HCS03.1...W0070
HAS02.1-005-NNN-NN	HCS03.1...W0100/W0150
HAS02.1-008-NNN-NN	HCS03.1...W0210
HAS02.1-015-NNN-NN	KCU02.2N

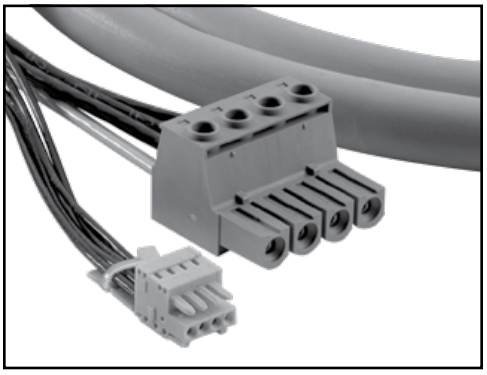
Connection Points HAS05 –	Universal adapter for safety technology for easier X41 wiring of 2nd channel
Type	**optional (for control sections with L2/S2 safety - X41 adapter)**
HAS05.1-007-NNL-NN	Adapter from D-Sub to terminal connector – fitting direction: left-hand
HAS05.1-007-NNR-NN	Adapter from D-Sub to terminal connector – fitting direction: right-hand

Installation hardware used in conjunction with IndraDrive Mi	
Type	**needed with KCU02.2N**
HAS03.1-002-NNN-NN	Cabinet Adapter
Type	**optional hardware used with KSM02.1B and KMS02.1B**
HAS10.1-001-001-NN	Clamp for Mi-Connector

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911306620	HAS01.1-050-072-MN	5	5 day(s)
R911311807	HAS01.1-065-072-CN	5	5 day(s)
R911306007	HAS01.1-065-NNN-CN	5	5 day(s)
R911306619	HAS01.1-075-072-MN	5	5 day(s)
R911306621	HAS01.1-100-072-MN	5	5 day(s)
R911311808	HAS01.1-105-072-CN	5	5 day(s)
R911306008	HAS01.1-105-NNN-CN	5	5 day(s)
R911306664	HAS01.1-125-072-CN	5	5 day(s)
R911315182	HAS01.1-125-072-MN	5	5 day(s)
R911306622	HAS01.1-150-072-MN	5	5 day(s)
R911306623	HAS01.1-175-072-MN	5	5 day(s)
R911306624	HAS01.1-200-072-MN	5	5 day(s)
R911306666	HAS01.1-225-072-CN	5	5 day(s)
R911306625	HAS01.1-250-072-MN	5	5 day(s)
R911306626	HAS01.1-350-072-MN	5	5 day(s)
R911306669	HAS01.1-350-NNN-CN	5	5 day(s)
R911306632	HAS01.1-350-NNN-MN	5	5 day(s)
R911306330	HAS02.1-001-NNN-NN	5	5 day(s)
R911306106	HAS02.1-002-NNN-NN	5	5 day(s)
R911306331	HAS02.1-003-NNN-NN	5	5 day(s)
R911306720	HAS02.1-004-NNN-NN	5	5 day(s)
R911306721	HAS02.1-005-NNN-NN	5	5 day(s)
R911309579	HAS02.1-008-NNN-NN	5	5 day(s)
R911320785	HAS02.1-015-NNN-NN	5	5 day(s)
R911308567	HAS03.1-002-NNN-NN	5	5 day(s)
R911321502	HAS05.1-007-NNL-NN	5	5 day(s)
R911319770	HAS05.1-007-NNR-NN	5	5 day(s)
R911332362	HAS10.1-001-001-NN	5	5 day(s)

GoTo Focused Delivery Program: Drive Systems

Drive Systems - Cables



Motor Power- and Feedback Cable assemblies for IndraDrive C and Cs drives with IndraDyn S motors in the GoTo program are offered in multiple lengths and are completely assembled with connectors for easy installation.

Interface/Communication cables for connection of control units and system peripherals or start-up/commissioning via PC as described by type.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToDrivesystems***

Features

- See Technical Data for more information.

Technical Data

Motor power cable	Length in meter	Connecting	
		Drives	Motors
RKL0013/005,0 (INS0751-INK0670-RLS0745)	5m	IndraDrive Cs – HCS01.1…W0006, W0013 and W0008	MSM019,031,041
RKL0013/010,0 (INS0751-INK0670-RLS0745)	10m		
RKL0014/005,0 (RLS1101-INK0653-RLS0745)	5m	IndraDrive Cs – HCS01.1…W0006, W0013 and W0008	MSK030,040,050,060, 061
RKL0014/010,0 (RLS1101-INK0653-RLS0745)	10m		
RKL0019/005,0 (RLS1101-INK0653-RLS0746)	5m	IndraDrive Cs – HCS01.1…W0018 and W0028	MSK030,040,050,060, 061,076
RKL0019/010,0 (RLS1101-INK0653-RLS0746)	10m		
RKL0019/015,0 (RLS1101-INK0653-RLS0746)	15m		
RKL0050/005,0 (RLS1201-INK0650-RLS0749)	5m	IndraDrive Cs – HCS01.1…W0054	MSK071E-0300
RKL0050/010,0 (RLS1201-INK0650-RLS0749)	10m		
RKL4302/005,0 (RLS1101-INK0653-RLS0722)	5m	IndraDrive C – HCS02.1…W0012, W0028, IndraDrive M - HMS01.1...W0020, W0036 and HMD01.1…W0012-W0036	MSK030,040,050,060, 061,076
RKL4302/010,0 (RLS1101-INK0653-RLS0722)	10m		
RKL4302/015,0 (RLS1101-INK0653-RLS0722)	15m		
RKL4303/005,0 (RLS1101-INK0653-RLS0721)	5m	IndraDrive C – HCS02.1…W0054, W0070 and HCS03.1… W0070, IndraDrive M - HMS01.1…W0054, W0070	MSK030,040,050,060, 061,076
RKL4303/010,0 (RLS1101-INK0653-RLS0721)	10m		
RKL4305/003,0 (RLS1101-INK0653-RLS1102)	3m	IndraDrive Mi – KMS02.1B IndraDrive Cs, C and M - extension for motor power cables RKL0014, RKL0019, RKL4302, RKL4303	MSK030,040,050,060, 061,076
RKL4305/005,0 (RLS1101-INK0653-RLS1102)	5m		
RKL4305/010,0 (RLS1101-INK0653-RLS1102)	10m		
RKL4306/005,0 (RLS1201-INK0650-RLS0722)	5m	IndraDrive C – HCS02.1…W0012, W0028, IndraDrive M - HMS01.1...W0020, W0036 and HMD01.1…W0012-W0036	MSK071E-0300
RKL4306/010,0 (RLS1201-INK0650-RLS0722)	10m		
RKL4308/005,0 (RLS1201-INK0602-RLS0722)	5m	IndraDrive C – HCS02.1…W0012, W0028, IndraDrive M - HMS01.1...W0020, W0036 and HMD01.1…W0012-W0036	MSK071E-0450
RKL4308/010,0 (RLS1201-INK0602-RLS0722)	10m		
RKL4309/005,0 (RLS1201-INK0602-RLS0721)	5m	IndraDrive C – HCS02.1…W0054, W0070 and HCS03.1… W0070, IndraDrive M - HMS01.1…W0054, W0070	MSK071E-0450
RKL4309/010,0 (RLS1201-INK0602-RLS0721)	10m		
RKL4321/005,0 (RLS1301-INK0602-RLS0721)	5m	IndraDrive C – HCS02.1…W0054, W0070 and HCS03.1… W0070, IndraDrive M - HMS01.1…W0054, W0070	MSK100B-0300 and MSK100C-0300
RKL4321/010,0 (RLS1301-INK0602-RLS0721)	10m		

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Motor power cable	Length in meter	Connecting	
		Drives	Motors
RKL4324/005,0 (RLS1301-INK0605-RLS0721)	5m	IndraDrive C – HCS02.1…W0054, W0070 and HCS03.1… W0070, IndraDrive M - HMS01.1…W0054, W0070	MSK101D-0450
RKL4324/010,0 (RLS1301-INK0605-RLS0721)	10m		
RKL4329/005,0 (RLS1301-INK0605-RLS0723)	5m	IndraDrive C – HCS03.1...W0100, W0150 and IndraDrive M – HMS01.1...W0110-W0210	MSK101D-0450
RKL4329/010,0 (RLS1301-INK0605-RLS0723)	10m		
RKG4200/002,0 (RGS1001-INK0448-INS0760)	2m	IndraDrive Cs, C and M	any MSK motor
RKG4200/003,0 (RGS1001-INK0448-INS0760)	3m		
RKG4200/004,0 (RGS1001-INK0448-INS0760)	4m		
RKG4200/005,0 (RGS1001-INK0448-INS0760)	5m		
RKG4200/006,0 (RGS1001-INK0448-INS0760)	6m		
RKG4200/008,0 (RGS1001-INK0448-INS0760)	8m		
RKG4200/010,0 (RGS1001-INK0448-INS0760)	10m		
RKG4200/015,0 (RGS1001-INK0448-INS0760)	15m		
RKG4200/016,0 (RGS1001-INK0448-INS0760)	16m		
RKG4201/003,0 (RGS1001-INK0448-RGS1002)	3m	IndraDrive Mi – KMS2.1B IndraDrive Cs, C and M – extension for motor feedback cable RKG4200	any MSK motor
RKG4201/005,0 (RGS1001-INK0448-RGS1002)	5m		
RKG4201/010,0 (RGS1001-INK0448-RGS1002)	10m		
RKG0033/005.0 (INS0753-INK0448-INS0760)	5m	IndraDrive Cs…W0006 and W0013	MSM019,031,041
RKG0033/010.0 (INS0753-INK0448-INS0760)	10m		
RKG0034/005,0 (INS0753-INK0448-INS0758)	5m	IndraDrive Cs…W0006 and W0013	MSM019,031,041 for absolute encoder function in conjunction with SUP-E01-MSM-BATTERYBOX
RKG0034/010,0 (INS0753-INK0448-INS0758)	10m		
RKG0036/005,0 (INS0379-INK0532-INS0760)	5m	IndraDrive Cs and IndraDriv C/M with Cxx02.x	GDS/GDM02.1 Master Encoder
RKG0036/010,0 (INS0379-INK0532-INS0760)	10m		
Hybrid cables and connector [1]	**Length in meter**	**Connecting IndraDrive Mi (Motor Integrated Drive) components**	
RKH0311/003,0 (RHS0011-REH0800-RHS0011)	3m	KCU02.2N	KSM02.1B or KMS02.1B
RKH0311/005,0 (RHS0011-REH0800-RHS0011)	5m		
RKH0311/010,0 (RHS0011-REH0800-RHS0011)	10m		
RKH0011/001,0 (RHS0011-REH0800-RHS0011)	1m	KSM02.1B or KMS02.1B	KSM02.1B or KMS02.1B
RKH0011/003,0 (RHS0011-REH0800-RHS0011)	3m		
RKH0011/005,0 (RHS0011-REH0800-RHS0011)	5m		
RKH0011/010,0 (RHS0011-REH0800-RHS0011)	10m		
RHS0014/C03 (CN-0014S-SQUA-CLIP*-750V)	–	Terminal Connector Mi – for KSM02.1B or KMS02.1B	
Safety Zone components	**Length in meter**	**IndraDrive Mi with safety**	
RKB0033/001,5 (*******-*******-*******)	1.5m	Safety Zone Cable (New Zone)	
RKB0033/010,0 (*******-*******-*******)	10m		
RBS0023/Q01 (CP-0012P-ROUN-SCREW-****)	–	Safety Zone Plug (Member) – needed for each member in a safety zone	

1) Maximum length of all hybrid cable segments combined 200 meters – from KCU to last Mi

continued on next page

Safety Zone components	Length in meter	IndraDrive Cs, C/M with Safety Technology - Safe Motion
RKB0051/00,25 (*******-*******-*******)	0.25m	Safety Zone cable (Bus Cable)
RKB0051/00,35 (*******-*******-*******)	0.35m	
RKB0051/00,55 (*******-*******-*******)	0.55m	
RKB0052/001,0 (*******-*******-*******)	1m	
Interface cable (optical – Sercos II)	**Length in meter**	**Connecting**
RKO0100/00,25 (ROS0001-INK0414-ROS0001)	0.25m	Drives and peripherals with Sercos II (optical) communication interface, inside cabinet
RKO0101/005,0 (ROS0002-INK0435-ROS0002)	5m	Drives and peripherals with Sercos II (optical) communication interface, outside cabinet
RKO0101/010,0 (ROS0002-INK0435-ROS0002)	10m	
Interface cable (Ethernet based)	**Length in meter**	**Connecting**
RKB0011/001,0 (RBS0016-REB0400-RBS0016)	1m	Drives and peripherals with Sercos III or other Ethernet based communication interface
RKB0011/002,0 (RBS0016-REB0400-RBS0016)	2m	
RKB0011/003,0 (RBS0016-REB0400-RBS0016)	3m	
RKB0011/005,0 (RBS0016-REB0400-RBS0016)	5m	
RKB0011/010,0 (RBS0016-REB0400-RBS0016)	10m	
RKB0011/015,0 (RBS0016-REB0400-RBS0016)	15m	
RKB0011/020,0 (RBS0016-REB0400-RBS0016)	20m	
RKB0013/00,19 (*******-*******-*******)	0.19m	
RKB0013/00,25 (*******-*******-*******)	0.25m	
RKB0013/00,35 (*******-*******-*******)	0.35m	
RKB0013/00,55 (*******-*******-*******)	0.55m	
RKB0013/001,0 (*******-*******-*******)	1m	
RKB0013/002,0 (*******-*******-*******)	2m	
Interface cable (RS232 - Serial)	**Length in meter**	**Connecting**
IKB0041/002,0 (INS0457-*******-INS0663)	2m	A PC or a separate control terminal directly to the RS232 serial interface of the control unit for start-up or operation
Battery box		**(HCS01.1 - MSM)**
SUP-E01-MSM-BATTERYBOX		External battery for absolute encoder function with HCS01.1 and MSM, connected in feedback circuit between RKG0033 and MSM or between RKG0033 and optional RKG0034
SUP-E03-DKC*CS-BATTRY		Replacement battery for SUP-E01-MSM- BATTERYBOX
Module bus extension	**Length in meter**	**Connecting**
RKB0001/002,0 (*******-*******-*******)	2m	Bus cable to transmit control signals whererelatively large distances are between individual control units
RKB0001/005,0 (*******-*******-*******)	5m	

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911296708	IKB0041/002.0 (2m length)	5	5 day(s)
R911335348	RBS0023/Q01 (CP-0012P-ROUN-SCREW-****)	5	5 day(s)
R911335793	RHS0014/C03 (CN-0014S-SQUA-CLIP*-750V)	3	5 day(s)
R911343983	RKB0001/002,0 (*******-*******-*******)	1	10 day(s)
R911343984	RKB0001/005,0 (*******-*******-*******)	1	10 day(s)
R911342086	RKB0011/001,0 (RBS0016-REB0400-RBS0016)	5	10 day(s)
R911342087	RKB0011/002,0 (RBS0016-REB0400-RBS0016)	5	10 day(s)
R911342088	RKB0011/003,0 (RBS0016-REB0400-RBS0016)	5	10 day(s)
R911321548	RKB0011/005.0 (5m length)	5	5 day(s)
R911338772	RKB0011/010,0 (RBS0016-REB0400-RBS0016)	5	10 day(s)
R911340235	RKB0011/015,0 (RBS0016-REB0400-RBS0016)	5	10 day(s)
R911342096	RKB0011/020,0 (RBS0016-REB0400-RBS0016)	5	10 day(s)
R911329741	RKB0013/00,19 (*******-*******-*******)	5	5 day(s)
R911317800	RKB0013/00,35 (*******-*******-*******)	5	5 day(s)
R911317801	RKB0013/00,55 (*******-*******-*******)	5	5 day(s)
R911317797	RKB0013/00.25 (0.25m length)	5	5 day(s)
R911340679	RKB0013/001,0 (*******-*******-*******)	5	5 day(s)
R911338023	RKB0013/002,0 (*******-*******-*******)	5	5 day(s)
R911334865	RKB0033/001,5 (*******-*******-*******)	5	10 day(s)
R911335718	RKB0033/010,0 (*******-*******-*******)	5	10 day(s)
R911341092	RKB0051/00,25 (*******-*******-*******)	5	10 day(s)
R911341100	RKB0051/00,35 (*******-*******-*******)	5	10 day(s)
R911341093	RKB0051/00,55 (*******-*******-*******)	5	10 day(s)
R911341079	RKB0052/001,0 (*******-*******-*******)	5	10 day(s)
R911342494	RKG0033/005,0 (INS0753-INK0448-INS0760)	5	10 day(s)
R911342495	RKG0033/010,0 (INS0753-INK0448-INS0760)	5	10 day(s)
R911342508	RKG0034/005,0 (INS0753-INK0448-INS0758)	5	10 day(s)
R911342491	RKG0034/010,0 (INS0753-INK0448-INS0758)	5	10 day(s)
R911340295	RKG0036/005,0 (INS0379-INK0532-INS0760)	5	10 day(s)
R911340300	RKG0036/010,0 (INS0379-INK0532-INS0760)	5	10 day(s)
R911310646	RKG4200 10 mtrs	5	10 day(s)
R911310645	RKG4200 5 mtrs	5	10 day(s)
R911338976	RKG4200/002,0 (RGS1001-INK0448-INS0760)	5	10 day(s)
R911336966	RKG4200/003,0 (RGS1001-INK0448-INS0760)	5	10 day(s)
R911317223	RKG4200/004,0 (RGS1001-INK0448-INS0760)	5	10 day(s)
R911313036	RKG4200/006,0 (RGS1001-INK0448-INS0760)	5	10 day(s)
R911313019	RKG4200/008,0 (RGS1001-INK0448-INS0760)	5	10 day(s)
R911310647	RKG4200/015,0 (RGS1001-INK0448-INS0760)	5	10 day(s)
R911313021	RKG4200/016,0 (RGS1001-INK0448-INS0760)	5	10 day(s)
R911338989	RKG4201/003,0 (RGS1001-INK0448-RGS1002)	5	10 day(s)
R911375076	RKG4201/005,0 (RGS1001-INK0448-RGS1002)	5	10 day(s)
R911374640	RKG4201/010,0 (RGS1001-INK0448-RGS1002)	5	10 day(s)
R911343791	RKH0011/001,0 (RHS0011-REH0800-RHS0011)	5	10 day(s)
R911343793	RKH0011/003,0 (RHS0011-REH0800-RHS0011)	5	10 day(s)
R911343795	RKH0011/005,0 (RHS0011-REH0800-RHS0011)	5	10 day(s)
R911343799	RKH0011/010,0 (RHS0011-REH0800-RHS0011)	5	10 day(s)
R911343923	RKH0311/003,0 (RHS0005-REH0800-RHS0011)	5	10 day(s)
R911343924	RKH0311/005,0 (RHS0005-REH0800-RHS0011)	5	10 day(s)
R911343928	RKH0311/010,0 (RHS0005-REH0800-RHS0011)	5	10 day(s)
R911341663	RKL0013/005,0 (INS0751-INK0670-RLS0745)	5	10 day(s)
R911341664	RKL0013/010,0 (INS0751-INK0670-RLS0745)	5	10 day(s)
R911342674	RKL0014/005,0 (RLS1101-INK0653-RLS0745)	5	10 day(s)

R911343931	RKL0014/010,0 (RLS1101-INK0653-RLS0745)	5	10 day(s)
R911331349	RKL0019 10 mtrs	5	10 day(s)
R911331348	RKL0019 5 meters	5	10 day(s)
R911341793	RKL0019/015,0 (RLS1101-INK0653-RLS0746)	5	10 day(s)
R911347947	RKL0050/005,0 (RLS1201-INK0650-RLS0749)	5	10 day(s)
R911347959	RKL0050/010,0 (RLS1201-INK0650-RLS0749)	5	10 day(s)
R911310648	RKL4302/005.0 (5m length)	5	10 day(s)
R911310649	RKL4302/010.0 (10m length)	5	10 day(s)
R911310651	RKL4302/015,0 (RLS1101-INK0653-RLS0722)	5	10 day(s)
R911310652	RKL4303/005.0 (5m length)	5	10 day(s)
R911310653	RKL4303/010.0 (10m length)	5	10 day(s)
R911338842	RKL4305/003,0 (RLS1101-INK0653-RLS1102)	5	10 day(s)
R911375077	RKL4305/005,0 (RLS1101-INK0653-RLS1102)	5	10 day(s)
R911372031	RKL4305/010,0 (RLS1101-INK0653-RLS1102)	5	10 day(s)
R911310655	RKL4306/005,0 (RLS1201-INK0650-RLS0722)	5	10 day(s)
R911310656	RKL4306/010,0 (RLS1201-INK0650-RLS0722)	5	10 day(s)
R911312873	RKL4308/010,0 (RLS1201-INK0602-RLS0722)	5	10 day(s)
R911312869	RKL4308/015,0 (RLS1201-INK0602-RLS0722)	5	10 day(s)
R911312870	RKL4309/005.0 (5m length)	5	10 day(s)
R911312871	RKL4309/010,0 (RLS1201-INK0602-RLS0721)	5	10 day(s)
R911337986	RKL4321/005,0 (RLS1301-INK0602-RLS0721)	5	10 day(s)
R911337555	RKL4321/010,0 (RLS1301-INK0602-RLS0721)	5	10 day(s)
R911337991	RKL4324/005.0 (5m length)	5	10 day(s)
R911375078	RKL4324/010,0 (RLS1301-INK0605-RLS0721)	5	10 day(s)
R911337990	RKL4329/005,0 (RLS1301-INK0605-RLS0723)	5	10 day(s)
R911337557	RKL4329/010,0 (RLS1301-INK0605-RLS0723)	5	10 day(s)
R911308248	RKO0100/00.25 (0.25m length)	5	5 day(s)
R911308242	RKO0101/005.0 (5m length)	5	5 day(s)
R911308243	RKO0101/010.0 (10m length)	5	5 day(s)
R911324240	SUP-E01-MSM-BATTERYBOX	5	10 day(s)
R911295648	SUP-E03-DKC*CS-BATTRY	5	10 day(s)

Motion Control PAC - IndraControl L

IndraControl L the rack-based platform from Rexroth allows easy and consistent automation for all centralized and distributed architectures.

IndraControl L is the flexible configurable hardware platform for open control architectures. Whether you intend to implement a motion control, a CNC or a PLC application - it is always the same hardware you use. Your application is only defined by the software.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToMotionControl_PAC***

Features

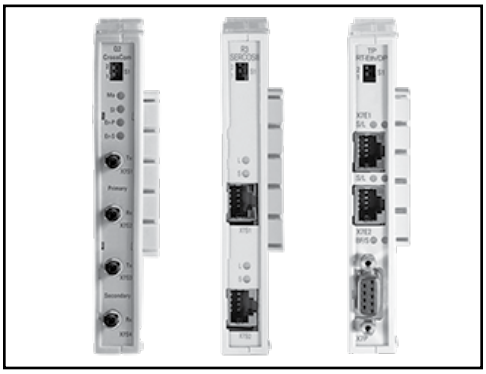
- Scalable hardware platform
- Standardized communication interfaces
- Optional expansion through function and technology modules
- Ideal for centralized and distributed control
- Individually expandable with high-grade Human-Machine Interface (HMI) components
- Modular I/O units

Technical Data

Control hardware		L25 IndraLogic 2G	L45 IndraLogic 2G	L75 IndraLogic 2G
Memory				
Application:		128 MB	256 MB	4 GB
Retentive memory:		256 kB	256 kB	256 kB
Buffered:		–	8 MB – optional / standard	16 MB
Flash size:		1 GB	1 GB	1 GB
Interfaces				
Ethernet:		1 x Ethernet TCP/IP (Standard)		
Ready:		1 x ready contact (Standard)		
Others		–	2 x Ethernet TCP/IP	
I/O				
Digital inputs		–	8 DC-decoupled inputs (with interrupt capability)	
Digital outputs		–	8 DC-decoupled outputs	
Channels, used	Max.	256		
I/O extension	Max. no. of Inline modules	63		
	Max. no. of bytes	64		
Function Modules	Max.	2	4	4
Fieldbus				
Sercos III		1 x Sercos III	1 x Sercos III	
ProfiNet		–	1 x ProfiNet IO Controller/-Device (Option)	
EtherNet/IP		–	1 x EtherNet/IP Scanner/-Adapter (Option)	
Profibus		–	1 x Profibus-Master/-Slave	

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911171363	CML25.1-3N-400-NN-NNC1-NW	1	5 day(s)
R911170828	CML45.1-3P-500-NA-NNNN-NW	1	5 day(s)
R911170827	CML45.1-3P-504-NA-NNNN-NW	1	5 day(s)
R911173004	CML75.1-3P-900-NA-NNNN-NW	1	5 day(s)
R911174057	CML75.1-3P-905-NA-NNNN-NW	1	5 day(s)
R911299856	R-IB IL CML S01-PLSET	10	5 day(s)

Motion Control PAC - IndraControl L - Function Modules



IndraControl L function modules provide additional technology functions or fieldbus interfaces to the IndraControl L platform.

The number of function modules that can be used simultaneously depends on the control hardware and the IndraMotion system being utilized for the application.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToMotionControl_PAC***

Features

- See Technical Data for more information.

Technical Data

Description	**CFL01.1-Q2** Cross communication	**CFL01.1-R3** sercos III Interface	**CFL01.1-TP** Real-time-Ethernet / PROFIBUS
	sercos II fieldbus interface for real-time communication with drives or for redundant control cross communication	sercos III fieldbus interface for Ethernet-based real-time communication with drives and I/O peripherals, or for control cross communication	Fieldbus interface RT Ethernet (PROFINET RT, EtherNet/IP) and PROFIBUS
Adjustable ring cycle time	–	2 ms, 4 ms, 8 ms	–
Max. number of slaves	–	15, 31, 63	–
Power supply			
Internal	System bus		
Internal power consumption	2.05 W	2.3 W	1.65 W
Mechanical data			
Dimensions (W x H x D)	120 x 20 x 70 mm		
Protection category	IP20		

Technical Data

Description	CFL01.1-N1 Programmable Limit Switch
	Function interface, programmable limit switch, with 16 high-speed outputs for implementation of high speed cams for motion control applications
Adjustable ring cycle time	–
Max. number of slaves	–
Power supply	
Internal	System bus
Internal power consumption	2.8 W
External	24 V DC
Tolerance (without residual ripple)	–15/+20
Residual ripple	±5
Umax	30 V
Umin	19.2 V
Power consumption (max.)	4 A
Digital outputs	
Number	16
Connection method	1-wire
Output type	Semiconductor, no retaining
Output voltage, nominal	24 V DC
Rated output current	0.5 A
Lamp load at 8 Hz	5 W
Inductive load at 1 Hz	6.2 W (SG 1)
Mechanical data	
Dimensions (W x H x D)	120 x 20 x 70 mm
Protection category	IP20

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170012	CFL01.1-N1	1	5 day(s)
R911170009	CFL01.1-Q2	1	5 day(s)
R911170008	CFL01.1-R3	1	5 day(s)
R911170832	CFL01.1-TP	1	5 day(s)

GoTo Focused Delivery Program: Motion Control PAC

Motion Control PAC - IndraMotion MLC

IndraMotion MLC is the integrated controller-based system solution from Rexroth. It uses PLC programming according to IEC 61131-3 with object oriented programming such as: Function Block Diagrams (FBD), Ladder Diagrams (LD), Sequential Function Chart (SFC), and Structured Text (ST). The compact Rexroth IndraMotion MLC motion logic system gives you any freedom you wish for your consistent and modern machine automation. Innovative software and firmware functions, easy engineering and open system interfaces provide maximum flexibility in all motion applications.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToMotionControl_PAC***

Features

- Programmed via the same software that is used to program the IndraControl L PLCs - IndraWorks
- Access to PLC control, HMI, and SCADA functionality
- WinCE OS
- Communicates to standard Inline I/O via built-in Profifibus Master

Technical Data

Control Hardware		MLC L25	MLC L45	MLC L75
PLC runtime system				
IndraLogic 2G kernel	Conforming with IEC 61131-3 with extensions	●	●	●
Task management				
Freely projectable tasks (priority 0-20)	Cyclic, free-running, event-controlled, extern event-controlled	10	20	20
Cycle-synchronous processing of the I/O process image			●	
Sercos III synchronous processing of the I/O process image			●	
Min. PLC cycle time	Synchronous with system cycle		1 ms	
Min. Motion cycle time	Setpoint generator	2 ms	1 ms	1 ms
PLC processing time				
Typical processing time for 1,000 instructions/µs	Command mix (Real, Integer, Bool etc.)	35	30	5
	Bool-Operation	20	30	5
	Word-Operation	20	30	5
Motion Control				
Number of axes	Real, virtual, encoder, grouping	16	32	64
Synchronization (ELS – electronic line shaft)	Real axes (Servo drives)		●	
	Virtual axes (Virtual masters)		●	
	Encoder axes (Real masters)		●	
	Real axes (Cross-communication)		●	
	Dynamic synchronization		●	
	Master axis cascading		●	
Positioning	Single-axis		●	
Electronic gears			●	
	Intermediate point tables (In the drive, max. 1,024 intermediate points)		4	
	Electronic Motion Profile (in the output drive, motion profiles with max. 16 segments)		2	
	FlexProfile (In the control, master-/time-based motion profiles with max. 16 segments)		4	
Drive systems				
IndraDrive		●	●	●
IndraDrive Mi	Firmware MPB	●	●	●
IndraDrive Cs		●	●	●
SERCOS Pack-Profile		●	●	●
VT-HMC-1-1x (Sercos) / IAC (Multi-ET)	Hydraulic drive	●	●	●

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911371275	CML75.1-3P-905-NA-NNNN-NW	1	5 day(s)
R911334607	FWA-CML25*-MLC-12VRS-D0	1	5 day(s)
R911337429	FWA-CML25*-MLC-13VRS-D0	1	5 day(s)
R911334609	FWA-CML45*-MLC-12VRS-D0	1	5 day(s)
R911337431	FWA-CML45*-MLC-13VRS-D0	1	5 day(s)

Motion Control PAC - IndraLogic XLC

IndraLogic XLC (eXtended Logic Control) PLC system implements the latest PLC technology to provide substantial advantages for the intelligent automation. Object-oriented language extensions in programming enhance the quality of user programs through simplified modularization and accelerate the generation of machine variants.

Scaling and open design of the IndraControl device families - L25 and L45 - are the basis for flexible and application-oriented solutions in central or distributed control topologies. The universal, open real-time communications system Sercos III is the high-performance, highfunctioning backbone among the system peripherals.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToMotionControl_PAC***

Features

- See Technical Data for more information.

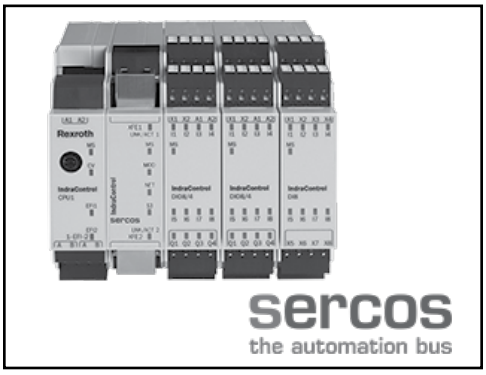
Technical Data

Control Hardware		XLC L25	XLC L45
PLC runtime system			
IndraLogic 2G kernel	Conforming with IEC 61131-3 with extensions	●	●
Task management			
Freely projectable tasks (priority 0-20)	Cyclic, free-running, event-controlled, extern event-controlled	8	
Cycle-synchronous processing of the I/O process image		●	
Sercos III synchronous processing of the I/O process image		●	
Min. PLC cycle time	Synchronous with system cycle	1 ms	
Min. Motion cycle time	Setpoint generator	2 ms	1 ms
PLC processing time			
Typical processing time for 1,000 instructions/µs	Command mix (Real, Integer, Bool etc.)	35	30
	Bool-Operation	20	30
	Word-Operation	20	30
Motion Control			
Number of axes	Real, virtual, encoder, grouping	16	32
Synchronization (ELS – electronic line shaft)	real axes (Servo drives)	●	
	Virtual axes (Virtual masters)	●	
	Encoder axes (Real masters)	●	
	real axes (Cross-communication)	●	
	Dynamic synchronization	●	
	Master axis cascading	●	
Positioning	Single-axis	●	
Electronic gears		●	
	Intermediate point tables (In the drive, max. 1,024 intermediate points)	4	
	Electronic Motion Profile (in the output drive, motion profiles with max. 16 segments)	2	
	FlexProfile (In the control, master-/time-based motion profiles with max. 16 segments)	4	
Drive systems			
IndraDrive C/M		●	●
IndraDrive Mi	Firmware MPB	●	●
IndraDrive Cs		●	●

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911334606	FWA-CML25*-XLC-12VRS-D0	1	5 day(s)
R911337428	FWA-CML25*-XLC-13VRS-D0	1	5 day(s)
R911334608	FWA-CML45*-XLC-12VRS-D0	1	5 day(s)
R911337430	FWA-CML45*-XLC-13VRS-D0	1	5 day(s)

GoTo Focused Delivery Program: Safety Control

Safety Control - SafeLogic compact



SafeLogic compact is a small safety control which features modular scalability, open architecture, user-friendly programming, and intuitive paramaterization. It is designed for deployment in small and mid-size machines for a range of applications including machine tools, printing and processing, assembly and handling, packaging, and general automation.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToSafety***

Features

- SafeLogic compact consists of the following:
  - main module SLC-3-CPU0 or SLC-3-CPU1
  - memory plug
  - up to 2 gateways
  - up to 12 additional extension modules (SLC-3-XTIO & SLC-3-XTID)
  - up to 8 UE410-2RO relay output modules and/or 4 UE410-4RO relay output modules

Technical Data

Main System	
Type	**Description**
SLC-3-CPU000300	Main module CPU0, dual level spring clamp terminals
SLC-3-CPU130302	Main module CPU1, 2 EFI connections, dual level spring clamp terminals
SLC-3-GS3S00300	Sercos III Gateway (CSoS)
SLC-3-XTIO84302	Input/output extension, 8 inputs/4 outputs, dual level spring clamp terminals
SLC-3-XTDI80302	Input extension, 8 inputs, dual level spring clamp terminals
SLC-A-UE410-2RO4	Output module, 2 NO contacts and 1 24 V DC signal output, plug-in block terminals
SLC-A-UE410-4RO4	Output module, 4 NO contacts and 2 24 V DC signal output, plug-in block terminals

Accessories	
Type	
SLC-A-UE10-2FG3D0	Safety relay: 2 NO, 1 NC, removable screw terminals
SLC-A-UE12-2FG3D0	Cascadable safety relay: 2 NO, 1 NC, removable screw terminals, with cascade plug
SLC-3-MPL000301	Memory plug
SLC-A-PLSET01	Connectors for I/O and relay modules, screw terminals
SLC-A-PLSET02	Connectors for I/O and relay modules, dual level spring clamp terminals
SLC-A-RS232/A/2.0	Configuration Cable, 2m, M8, Sub D
SWA-SLC**-SLD-01VRS-D0-CD650-COPY	SafeLogic Designer tool installation CD

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911172284	SLC-3-CPU000300	1	10 day(s)
R911172285	SLC-3-CPU130302	1	10 day(s)
R911172765	SLC-3-GS3S00300	2	10 day(s)
R911172286	SLC-3-MPL000301	2	10 day(s)
R911172292	SLC-3-XTDI80302	5	10 day(s)
R911172291	SLC-3-XTIO84302	5	10 day(s)
R911172297	SLC-A-PLSET01	5	10 day(s)
R911172298	SLC-A-PLSET02	5	10 day(s)
R911172299	SLC-A-RS232/A/2.0	1	10 day(s)
R911172295	SLC-A-UE10-2FG3D0	2	10 day(s)
R911172296	SLC-A-UE12-2FG3D0	3	10 day(s)
R911172293	SLC-A-UE410-2RO4	2	10 day(s)
R911172294	SLC-A-UE410-4RO4	2	10 day(s)
R911334897	SWA-SLC***-SLD-01VRS-D0-CD650-COPY	1	1 day(s)

GoTo Focused Delivery Program: CNC

CNC - IndraMotion MTX micro

IndraMotion MTX micro is the compact, simple, powerful, and nevertheless low-cost CNC solution from Rexroth for standard turning and milling machines. It consists of a custom HMI interface and a compact multi-axis drive controller with high-capacity CNC control and PLC.

All of the functions required in small CNC machines are available. Up to 6 axes can be controlled in 2 CNC channels with minimum startup effort.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToCNC***

Features

- For detailed list of technical features for IndraMotion MTX micro go to http://www.boschrexroth.com/mtxmicro

Technical Data

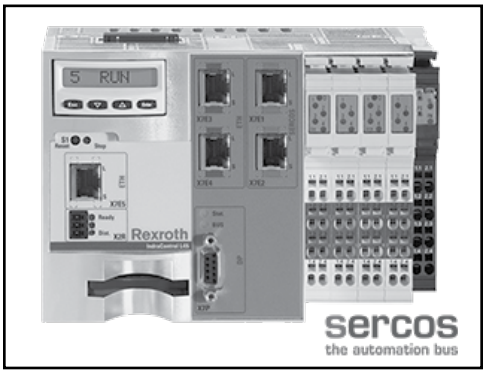
Type	Description
HCT02.1E-W0025-A-03-B-L8-2S-NN-NN-NN-FW	3-axis unit w/o I/O module [3]
HCT02.1E-W0025-A-03-B-L8-2S-D1-NN-NN-FW	3-axis unit with 1x I/O module
HCQ02.1E-W0025-A-03-B-L8-1S-NN-NN-NN-FW	4-axis unit w/o I/O module [3]
HCQ02.1E-W0025-A-03-B-L8-1S-D1-D1-NN-FW	4-axis unit with 2x I/O modules
CFM01.1-01G0-N-LBA-01-FW	Compact Flash card – requires FWA [1]
FWA-MICRO*-MTX-13VRS-NN	Firmware MTX13 [1]
FWA-MICRO*-MTX-14VRS-NN	Firmware MTX14 [1]
SWL-IWORKS-MTX-NNVRS-D0-MICRO	Engineering software license – single license [1]
VDP80.1FKN-C1-NN-EN	Display panel Universal – requires VCH02-handwheel unit
VCH02.2NNN-000RS	Handwheel box, incl. cable and connector for VDP80.1
VDP80.1FGN-C1-NN-EN	Display panel for turning machines
RKB0030/000.0	Firewire cable – (connection HCQ/HCT to VDP) – configurable length [2] 1 – 10 meter
DEA40.1H	Digital I/O module for HCQ/HCT [3]
HLR01.1N-02K0-N15R0-A-007-NNNN	Bleeder resistor 2kW
HNL01.2E-0400-N0051-A-480-NNNN	Choke

1) Required items with MTX micro multi-axis unit
2) Cables referenced as configurable lengths can be ordered based on length needed within the range given and 0.5m increments
3) I/O module for add to existing I/O count on MTX micro unit or replacement

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911337003	CFM01.1-01G0-N-LBA-01-FW	1	15 day(s)
R911320704	DEA40.1H	2	15 day(s)
R911337488	FWA-MICRO*-MTX-13VRS-NN	1	15 day(s)
R911342885	FWA-MICRO*-MTX-14VRS-NN	1	15 day(s)
R911329660	HCQ02.1E-W0025-A-03-B-L8-1S-D1-D1-NN-FW	1	15 day(s)
R911329658	HCQ02.1E-W0025-A-03-B-L8-1S-NN-NN-NN-FW	1	15 day(s)
R911329652	HCT02.1E-W0025-A-03-B-L8-2S-D1-NN-NN-FW	1	15 day(s)
R911329657	HCT02.1E-W0025-A-03-B-L8-2S-NN-NN-NN-FW	1	15 day(s)
R911306870	HLR01.1N-02K0-N15R0-A-007-NNNN	2	5 day(s)
R911335903	HNL01.2E-0400-N0051-A-480-NNNN	1	5 day(s)
R911327086	RKB0030/000,0 (INS0756-REB0404-INS0756)	2	15 day(s)
R911331698	SWL-IWORKS-MTX-NNVRS-D0-MICRO	1	15 day(s)
R912006061	VCH02.2NNN-000RS	1	15 day(s)
R911172168	VDP80.1FGN-C1-NN-EN	1	15 day(s)
R911172321	VDP80.1FKN-C1-NN-EN	1	15 day(s)

GoTo Focused Delivery Program: CNC

CNC - IndraMotion MTX



A complete CNC with integrated PLC for DIN rail mounting characterizes this control. Based on version chosen offering outstanding performance with a wide range of technology functions for special requirements.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToCNC***

Features

- For detailed list of technical features for IndraMotion MTX standard and IndraMotion MTX performance go to http://www.boschrexroth.com/mtx

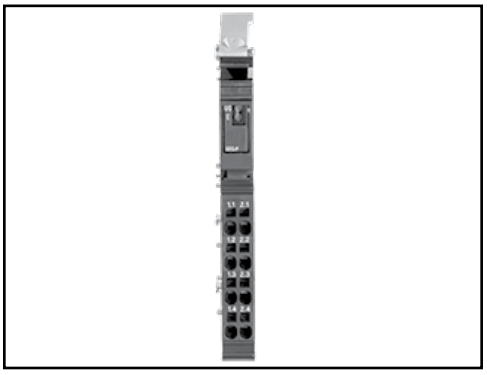
Technical Data

IndraMotion MTX	Standard – universal CNC control	Performance – high-performance CNC control
Max. number of axes	8	64
Max. number of spindles	4	32
Max. number of independent channels	2	12
Control hardware	CML45.1-3P-504-NA-NNNN-NW	CML75.1-3P-905-NA-NNNN-NW

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170827	CML45.1-3P-504-NA-NNNN-NW	1	5 day(s)
R911174057	CML75.1-3P-905-NA-NNNN-NW	1	5 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Power Modules



Compact modules utilizing spring-cage I/O connectors. Provide either 24 V DC to all PLC busses (Logic, Input, Output, Analog). Segment modules create separate "zone" of I/O to which power can be selectively cut-off.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- 2 available DC power modules to add only the power needed
- Wiring terminals easily removed, to allow module replacement without rewiring
- Single power module can provide up to 8A of 24 V DC power to PLC busses

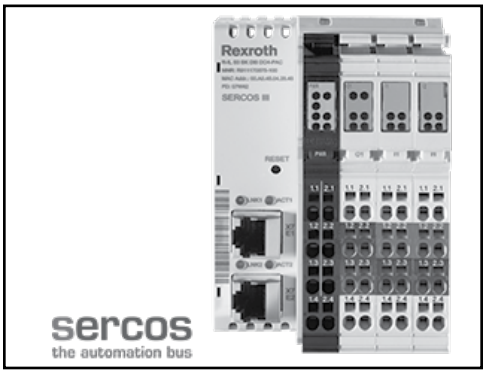
Technical Data

		R-IB IL PWR IN-PAC	R-IB IL 24 SEG/F-PAC	R-IB IL 24 SEG/F-D-PAC
24-V power supply for generation of U_L and U_{ANA}				
Rated value		–	–	
Permissible range		–	–	
Power consumption at nominal voltage				
24-V module supply		–	–	
Logic supply	Rated value	–	–	
	Max. output current	–	–	
Analog supply	Rated value	–	–	
	Max. output current	–	–	
Rated value		24 V DC	Permissible total current in the potential terminals of the main and segment circuits	
Permissible range		19.2 to 30 V		
Permissible current		Max. 8 A		
Nominal terminal current		–	6.0 A	
Max. permissible value		–	8.0 A	
Electric data				
Transmission speed		500 kbaud		
Error message to the higher level control system		–		Yes
Mechanical data				
Dimensions (W x H x D)		12.2 x 120 x 71.5 mm		
Weight (without plug)		44 g		
Protection category		IP20		
Protection class		Class 3 according to VDE 0106, IEC 60536		–
Safety classification		–		Class 3 according to VDE 0106, IEC 60536
Accessories		Connectors and labels included		

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170789	R-IB IL 24 PWR IN-PAC	5	3 day(s)
R911170710	R-IB IL 24 SEG/F-D-PAC	5	3 day(s)
R911170790	R-IB IL 24 SEG/F-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Bus Couplers



Sercos III, Profibus and Modbus TCP available. Bus couplers provide network drops that are expandable with using the same Inline I/O that is used locally with a PLC.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Wiring terminals easily removed to allow module replacement without rewiring
- Sercos III bus coupler for an entire Sercos III fieldbus architechture
- Confifigurable network speeds

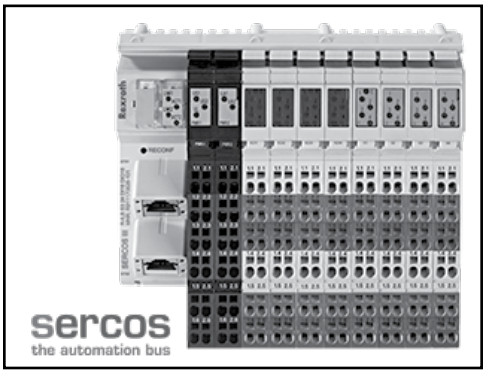
Technical Data

	R-IL S3 BK DI8 DO4-PAC	R-IL PB BK DI8 DO4/CN-PAC	R-IL PB BK DP/V1-PAC
Communication			
Interfaces	Sercos III	PROFIBUS DP	PROFIBUS DP
	Local bus		
System data			
Number of segments per station	Max. 63 (incl. 2 at bus coupler)		Max. 63
Total of all I/O data per station	Max. 244 bytes		max 176/184 bytes, dep. mode
Transmission speed in the local bus	500 kbaud		Auto. to master speed
Digital outputs			
Number	4		–
Nominal output voltage UOut	24 VDC		–
Total current	2 A		–
Protection	Short-circuit, overload		–
Actuator connection type	2-, 3-wire connection		–
Digital inputs			
Number	8		–
Nominal input voltage UINom	24 VDC		–
Permissible nominal input voltage range	–30 < UINom < +30 VDC		–
Nominal input current at UINom	Typ. 3 mA		–
Permissible line length	30 m		–
Sensor connection type	2-, 3-wire connection		–
Segment feed US/UM			
Nominal value	24 VDC		
Tolerances	–15/+20 %		
Load current	Max. 8 A		
Mechanical data			
Dimensions (W x H x D)	80 x 121 x 70 mm		91 x 120 x 71.5 mm
Protection category	IP20		
Protection class	Class 3 according to VDE 0106, IEC 60536		
Accessories			
	Connectors and labels included		

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911172194	R-IL PB BK DI8 DO4/CN-PAC	5	3 day(s)
R911170971	R-IL PB BK DP/V1-PAC	5	3 day(s)
R911170875	R-IL S3 BK DI8 DO4-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Block I/O



Rexroth Inline Block is the ideal solution for applications with Block I/O requirements. The bus couplers have built-in inputs and outputs. The compact design saves space and gives you additional options when you develop your automation solution.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Cost-effective multi-wire connection technique
- Configurable network speeds
- Provide 16 inputs and 16 outputs (Sercos III configurable 16 Inputs or Outputs)
- Sercos III Block I/O provides 16 inputs and 16 configurable input/outputs

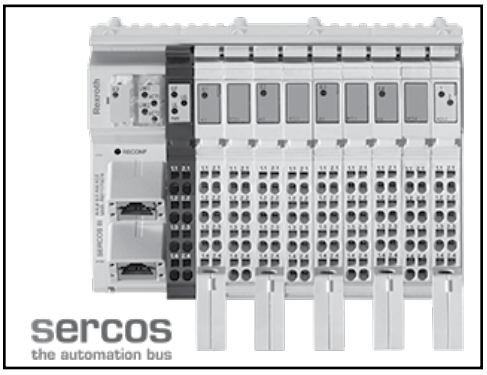
Technical Data

		R-ILB S3 24 DI16 DIO16
Communication		
Interfaces		SERCOS III
Digital inputs		
Number		32 (16 fixed, 16 freely configurable)
Switching thresholds	Max. voltage at low level ULmax	< 5 V
	Max. voltage at high level UHmax	> 15 V
Nominal input voltage UINom		24 VDC
Permissible nominal input voltage range		−30 < UINom < +30 VDC
Nominal input current at UINom		Min. 3 mA
Permissible line length		30 m
Sensor connection type		2-, 3- wire connection
Digital outputs		
Number		16
Nominal output voltage UOut		24 VDC
Total current		8 A
Protection		Short-circuit/overload
Signal delay on activation of a		
nominal resistive load (12 Ω/48 W)		Typ. 500 µs
nominal lamp load (48 W)		Typ. 100 ms
nominal inductive load (1.2 H, 12 Ω)		Typ. 100 ms
Actuator connection type		2-, 3- wire connection
Mechanical data		
Dimensions (W x H x D)		156 x 141 x 55 mm
Protection category		IP20
Protection class		Class 3 according to VDE 0106, IEC 60536
Accessories		
		Connectors and labels included

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170826	R-ILB S3 24 DI16 DIO16	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Block I/O Analog



The R-ILB S3 AI4 AO2 module is designed for use within a SERCOS III network. It is used to acquire analog input signals and output analog signals.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- 2 x Ethernet twisted pair according to 802.3u with auto negotiation and auto crossing
- Transmission speed of 100 Mbps
- I/O areas can be parameterized individually for each channel
- 4 analog inputs
- 2 analog outputs

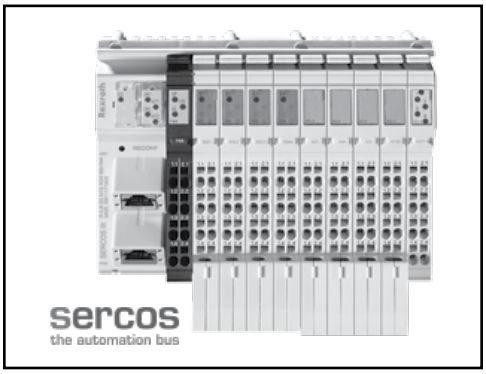
Technical Data

		R-ILB S3 AI4 A02
Communication		
Interfaces		Sercos III
Analog inputs		
Number		4 analog differential inputs
Conversion time of A/D converter		180 µs
Signal connection type		2-, 3- and 4-wire connection
Analog differential voltage inputs		
Number		4
Input range		0 to 10 V, ±10 V, 0 to 5 V, ±5 V
Input resistance		> 240 kΩ
Analog differential current inputs		
Number		4
Input range		0 to 20 mA, ±20 mA, 4 to 20 mA
Input resistance		< 100 Ω
Analog differential RTD inputs		
Number		4
Input range		PT 100, PT 500, PT 1,000, Ni 100, Ni 1,000 L&G, 0 to 2,500 Ω, 0 to 9.500 Ω
Analog outputs		
Number		2
Conversion time of D/A converter		Max. 70 µs
Output load :	Voltage ouput RLmin	2 kΩ
	Current output RLB	0 to 500 Ω
Signal connection type		2-wire connection
Mechanical data		
Dimensions (W x H x D)		156 x 141 x 55 mm
Protection category		IP20
Protection class		Class 3 according to VDE 0106, IEC 60536
Accessories		
		Connectors and labels included

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170874	R-ILB S3 AI4 A02	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Block I/O Analog SSI



The R-ILB S3 AI12 AO4 SSI-IN4 module is designed for use within a SERCOS III network and acquiring analog input signals and output analog signals. The SSI interfaces are used to read data from absolute encoders with SSI interface up to 31 bits. They support encoders with gray and binary code.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- 2 x Ethernet twisted pair according to 802.3u with auto negotiation and auto crossing
- Transmission speed of 100 Mbps
- I/O areas can be parameterized individually for each channel
- 12 analog inputs
- 4 analog outputs

Technical Data

	R-ILB S3 AI12 AO4 SSI-IN4
Communication	
Interfaces	Sercos III
Absolute value encoder inputs	
Number	4
Encoder signals	Clock pulse, inverted clock pulse, data, inverted data (acc. to RS-422)
Encoder types	
Types	single-turn or multi-turn
Resolution	8 to 31 bits
Code type	2-, 3- and 4-wire connection
Encoder Supply	24 V DC
Current carrying capacity	Max. 200 mA
Transmission frequency	67.5 kHz, 100kHz, 125 kHz, 200 kHz, 250kHz, 300 kHz, 400 kHz, 500kHz, 600 kHz, 700 kHz, 800 kHz, 900kHz, 1 MHz, 2MHz, 4 MHz, (configurable)
Analog differential inputs	
Number	12
Input filter	10 kHz HW filter, averaging via software filter
Conversion time of A/D converter	75 µs
Resolution of measurement	16 bits
Signal connection type	2-, 3- and 4-wire connection, shielded cable, twisted in pairs
Voltage inputs	
Measuring ranges	0 to 10 V, ±10 V
Input resistance	> 260 kΩ
Current inputs	
Measuring ranges	+10mA, 0 to 20 mA, ±20 mA, 4 to 20 mA
Input resistance	< 240 Ω

continued on next page

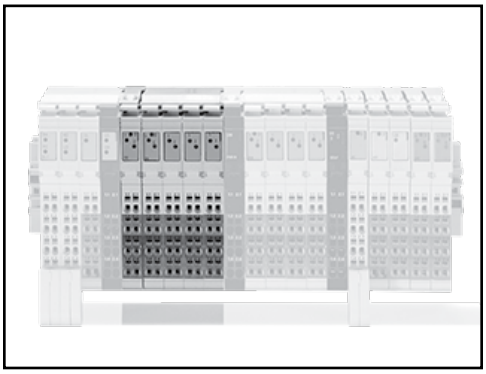
Technical Data (continued)

		R-ILB S3 AI12 AO4 SSI-IN4
Analog outputs		
Number		4
Current ranges		+10mA, 0 to 20 mA, ±20 mA, 4 to 20 mA
Voltage ranges		0 to 10 V, ±10 V
Output load :	Voltage ouput RL_{min}	2 kΩ
	Current output R_{LB}	0 to 500 Ω
Signal connection type		2-wire connection
Mechanical data		
Dimensions (W x H x D)		156 x 141 x 59 mm
Protection category		IP20
Protection class		Class 3 according to VDE 0106, IEC 60536
Accessories		
		Connectors and labels included

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911171949	R-ILB S3 AI12 AO4 SSI-IN4	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Digital Input Modules



Modules of varying input counts, utilizing spring-cage I/O connectors. Buy only what you need. Only 24 V DC is available through GoTo program, but AC I/O is available.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Input modules with up to 32 inputs available
- EDI module includes diagnostic LEDs
- Wiring terminals easily removed, to allow module replacement without rewiring
- 2-, 3-, 4-wire inputs available depending on your needs

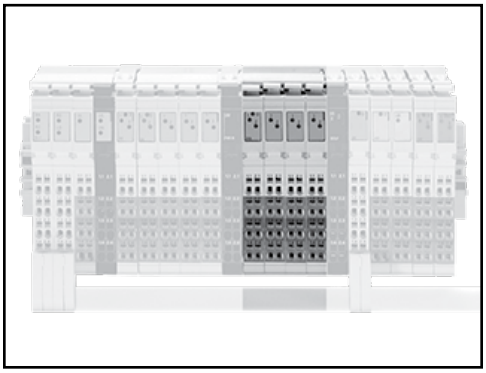
Digital Inputs

Technical data	S67-DI8-M8	S67-DI8-M12
Digital inputs		
Number	8	4
Connection type	M8 connectors, A coded, 3 poles	M12 connectors, A coded, 5 poles
Sensor connection type	2-, 3-wire connection	2-, 3-wire connection
Input filter	Parametrizable	Parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2	Type 2, acc. to IEC 61131-2
Signal voltage (0)	–30 to +5 V DC	–30 to +5 V DC
Signal voltage (1)	+11 to +30 V DC	+11 to +30 V DC
Input circuit	High-side switching	High-side switching
Input voltage	24 VDC (–30 V DC < U_{IN} < +30 V DC)	24 VDC (–30 V DC < U_{IN} < +30 V DC)
Input current	Typ. 7.3 mA	Typ. 7.3 mA
Cable length, unshielded	≤ 30 m	≤ 30 m
Configurable functions		
Input filter (per channel)	0.1/0.5/3/15/20 ms/filter off	0.1/0.5/3/15/20 ms/filter off
Online simulation (per channel)	Lock/unlock; simulation value: 0/1	Lock/unlock; simulation value: 0/1
Diagnostics (per module)	Overload and short circuit (sensor supply), Undervoltage (U_{LS} + U_A)	Overload and short circuit (sensor supply), Undervoltage (U_{LS} + U_A)
Process image		
Process data width	1 byte data + status	1 byte data + status
Ambient conditions		
Permissible temperature (operation)	–25 to +60 °C	–25 to +60 °C
Permissible relative humidity (operation)	5 to 95 %	5 to 95 %
Permissible air pressure (operation)	795 to 1,080 hPa	795 to 1,080 hPa
Mechanical data		
Dimensions (W x H x D)	50 x 117 x 35 mm	50 x 117 x 35 mm

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170752	R-IB IL 24 DI 16-PAC	5	3 day(s)
R911170753	R-IB IL 24 DI 32/HD-PAC	5	3 day(s)
R911170750	R-IB IL 24 DI 4-PAC	5	3 day(s)
R911170751	R-IB IL 24 DI 8-PAC	5	3 day(s)
R911171972	R-IB IL 24 DI 8/HD-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Digital Output Modules



Modules of varying output counts, utilizing spring-cage I/O connectors. Buy only what you need. 24 V DC, 120 V AC and 240 V AC available.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Output modules with up to 32 outputs available
- Transistor, Triac, Relay outputs available
- Wiring terminals easily removed to allow module replacement without rewiring
- Single-, 2-, 3-, 4-wire outputs available depending on your needs

Technical Data

		R-IB IL 24 DO 2-2A	R-IB IL 24 DO 4-PAC	R-IB IL 24 DO 8-PAC	R-IB IL 24 DO 8/HD-PAC	R-IB IL 24 DO 8-2A-PAC	R-IB IL 24 DO 16-PAC	R-IB IL 24 DO 32/HD-PAC
Digital outputs								
Number		2	4	8			16	32
Nominal output voltage U_{Out}		24 V DC						
Nominal current I_{Nom} per channel		2 A	0.5 A			2 A	0.5 A	
Total current		4 A	2 A	4 A		8 A (at 50 % synchronism)	8 A	
Protection		Short-circuit/overload						
Signal delay upon power on of	nominal resistive load (12 Ω/48 W)	Typ. 200 µs	Typ. 100 µs		Typ. 500 µs	Typ. 50 µs	Typ. 500 µs	
	nominal lamp load (48 W)	Typ. 200 ms	Typ. 100 ms			Typ. 75 ms	Typ. 100 ms	
	nominal inductive load (1.2 H, 12 Ω)	Typ. 250 ms	Typ. 100 ms			Typ. 50 ms	Typ. 100 ms	
Signal delay upon power down of	nominal resistive load (12 Ω/48 W)	Typ. 200 µs	Typ. 1 ms			Typ. 500 µs	Typ. 1 ms	
	nominal lamp load (48 W)	Typ. 200 µs	Typ. 1 ms			Typ. 500 µs	Typ. 1 ms	
	nominal inductive load (1.2 H, 12 Ω)	Typ. 250 ms	Typ. 50 ms			Typ. 150 ms	Typ. 50 ms	
Actuator connection type		2-, 3- or 4-wire	2-, 3-wire	2-, 3- or 4-wire	1-wire	2-, 3- or 4-wire	2-, 3-wire	1-wire
Electric data								
Logic voltage		7.5 V						
Power consumption from local bus U_L		Max. 35 mA	Max. 44 mA	Max. 60 mA	Max. 45 mA	Max. 60 mA	Max. 90 mA	Max. 140 mA
Segment supply voltage U_S		24 V DC (nominal value)						
Nominal current consumption from U_S		Max. 4 A (2 x 2 A)	Max. 2 A (2 x 0.5 A)	Max. 4 A (8 x 0.5 A)		Max. 8 A	Max. 8 A (16 x 0.5 A)	Max. 8 A (16 x 0.5 A or 32 x 0.25 A)
Error message to the higher level control system		Short-circuit/overload of an output				–	Short-circuit/overload of an output	

See index Page 81 for GoTo product and accessory part numbers

continued on next page

Technical Data (continued)

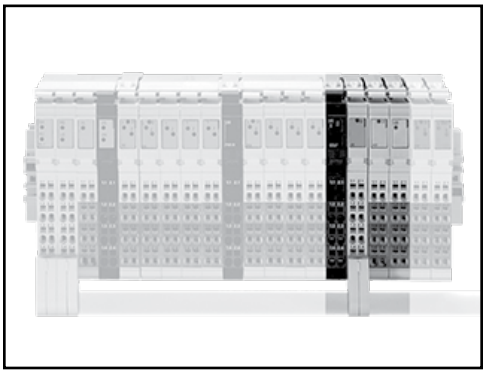
	R-IB IL 24 DO 2-2A	R-IB IL 24 DO 4-PAC	R-IB IL 24 DO 8-PAC	R-IB IL 24 DO 8/HD-PAC	R-IB IL 24 DO 8-2A-PAC	R-IB IL 24 DO 16-PAC	R-IB IL 24 DO 32/HD-PAC
Mechanical data							
Dimensions (W x H x D)	12.2 x 120 x 71.5 mm	12.2 x 141 x 71.5 mm	48.8 x 120 x 71.5 mm	12.2 x 120 x 71.5 mm	48.8 x 120 x 71.5 mm	48.8 x 141 x 71.5 mm	48.8 x 120 x 71.5 mm
Protection category	IP20						
Protection class	Class 3 according to VDE 0106, IEC 60536						
Accessories	Connectors and labels included						

	R-IB IL 24/230 DOR 1/W-PAC	R-IB IL 24/230 DOR 4/W-PAC
Relay output		
Number	1	4
Max. switching voltage	253 V AC, 250 V DC	
Max. switching capacity	750 VA	
Electric data		
Logic voltage U_L	7.5 V	
Power consumption from local bus U_L	Max. 60 mA	Max. 187 mA
Operating mode: process data mode	2 bits	2 bits
Transmission speed	500 kbaud	
Ambient conditions		
Permissible temperature (operation)	–25 to +55 °C	
Permissible temperature (storage)	–25 to +85 °C	
Permissible relative humidity (operation)	5 to 90 %	
Permissible relative humidity (storage)	5 to 95 %	
Mechanical data		
Dimensions (W x H x D)	12.2 x 120 x 71.5 mm	
Weight (without plug)	46 g	
Protection category	IP20	
Protection class	Class 3 according to VDE 0106, IEC 60536	
Accessories	Connectors and labels included	

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170757	R-IB IL 24 DO 16-PAC	5	3 day(s)
R911170754	R-IB IL 24 DO 2-2A-PAC	5	3 day(s)
R911170768	R-IB IL 24 DO 32/HD-PAC	5	3 day(s)
R911170755	R-IB IL 24 DO 4-PAC	5	3 day(s)
R911170759	R-IB IL 24 DO 8-2A-PAC	5	3 day(s)
R911170756	R-IB IL 24 DO 8-PAC	5	3 day(s)
R911171973	R-IB IL 24 DO 8/HD-PAC	5	3 day(s)
R911170769	R-IB IL 24/230 DOR 1/W-PAC	5	3 day(s)
R911170758	R-IB IL 24/230 DOR4/W-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Analog Input Modules



1 - 8 channel modules available. Spring-cage wired. Voltage and Current I/O available.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Wiring terminals easily removed to allow module replacement without rewiring
- Adjustable resolution
- Programmable output formats
- High-speed processing available

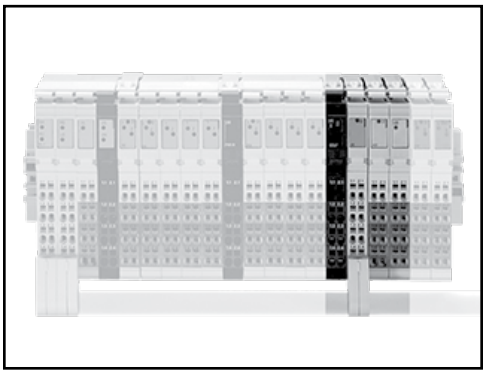
Technical Data

	R-IB IL AI 2/SF-PAC	R-IB IL AI 8/IS-PAC	R-IB IL AI 8/SF-PAC
Analog inputs			
Number	2 anlog single-ended inputs	8 analog single-ended inputs	
Digital filtering (averaging)	Across 16 measurement values (can be switched off)	None or across 4, 16 or 32 measurement values	
Conversion time of A/D converter	Typ. 120 µs	Max. 10 µs	
Voltage inputs			
Measuring ranges	0 to 10 V, ±10 V	–	0 to 10 V, ±10 V, 0 to 5 V, ±5 V, 0 to 25 V, ±25 V, 0 to 50 V
Process data update of either channel	< 1.5 ms	–	< 1.5 ms
Current inputs			
Measuring ranges	0 to 20 mA, ±20 mA, 4 to 20 mA	0 to 20 mA, 4 to 20 mA, ±20 mA, 0 to 40 mA, ±40 mA	
Process data update of either channel	< 1.5 ms	Synchronous with the bus	< 1.5 ms
Max. permissible current in each input	±100 mA		
Resolution	16 Bit		
Sensor connection type	2-, 3-wire connection		2-wire connection
Electric data			
Logic voltage U_L	7.5 V		
Power consumption from local bus U_L	Typ. 45 mA	Typ. 52 mA, max. 65 mA	Typ. 48 mA, max. 55 mA
Peripheral supply voltage U_{ANA}	24 V DC		
Power consumption at U_{ANA}	Typ. 12 mA	Typ. 31 mA, max. 40 mA	Typ. 30 mA, max. 35 mA
Mechanical data			
Dimensions (W x H x D)	12.2 x 135 x 71.5 mm	48.8 x 135 x 71.5 mm	48.8 x 120 x 71.5 mm
Protection category	IP20		
Protection class	Class 3 according to VDE 0106, IEC 60536		
Accessories	Connectors and labels included		

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170784	R-IB IL AI 2/SF-PAC	5	3 day(s)
R911308494	R-IB IL AI 8/IS-PAC	5	3 day(s)
R911308493	R-IB IL AI 8/SF-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Analog Output Modules



1 or 2 channel modules available. Spring-cage wired. Voltage and Current Output available. 16-bit resolution. Easy to set up.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Wiring terminals easily removed to allow module replacement without rewiring
- Adjustable resolution
- Programmable output formats
- High-speed processing available
- Only 1 data register required to configure module

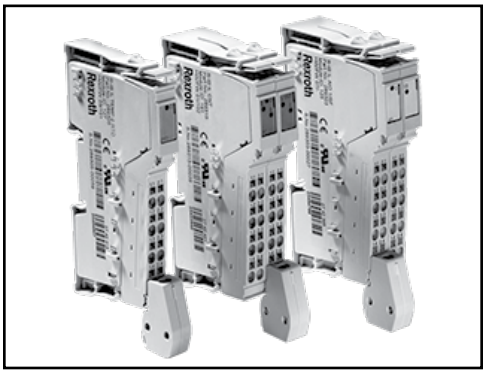
Technical Data

	R-IB IL AO 2/U/BP-PAC	R-IB IL AO 1/SF-PAC	R-IB IL AO 2/SF-PAC
Analog outputs			
Number	2 single-ended outputs	1, automatically configured in relation to the terminal point used	2, automatically configured in relation to the terminal point used
Current ranges	–	0 to 20 mA, 4 to 20 mA	
Voltage ranges	–10 to +10 V/0 to +10 V	0 to 10 V	
Output load			
Resolution	16 bits		
Process data update including conversion time of D/A converter	< 1 ms		
Actuator connection type	2-wire connection		
Electric data			
Logic voltage U_L	7.5 V		
Power consumption from local bus U_L	Typ. 33 mA, max. 40 mA		Typ. 36 mA, max. 45 mA
Peripheral supply voltage U_{ANA}	24 V DC		
Power consumption at U_{ANA}	Typ. 25 mA, max. 35 mA	Typ. 50 mA, max. 65 mA	Typ. 75 mA, max. 95 mA
Error message to the higher level control system	Failure or logic voltage U_L not reached		Failure of supply voltage U_{ANA}
Mechanical data			
Dimensions (W x H x D)	12.2 x 135 x 71.5 mm	24.4 x 135 x 71.5 mm	48.8 x 135 x 71.5 mm
Protection category	IP20		
Protection class	Class 3 according to VDE 0106, IEC 60536		
Accessories	Connectors and labels included		

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170787	R-IB IL AO 1/SF-PAC	5	3 day(s)
R911170436	R-IB IL AO 2/SF-PAC	5	3 day(s)
R911170786	R-IB IL AO 2/U/BP-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Temperature Modules



2, 4, 8 channel modules available. Can read full range of standard thermocouples and resistive inputs. Spring-cage I/O connectors utilized for easy wiring.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Pt, Ni, Cu, KTY, linear resistors can be used with RTD modules
- B, C, E, J, K, L, N, R, S, T, U, W, thermocouples can be used with UTH
- 2-, 3-wire inputs available depending on your needs

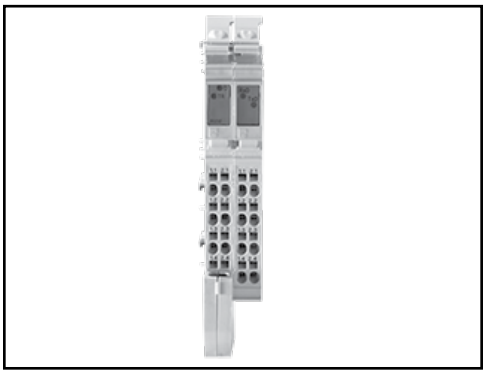
Technical Data

	R-IB IL TEMP 2 RTD-PAC	R-IB IL TEMP 2 UTH-PAC
Analog inputs		
Number	2 inputs for resistive temperature sensors	2 inputs for thermocouples or linear voltages
Usable sensor types	Pt, Ni, Cu, KTY	B, C, E, J, K, L, N, R, S, T, U, W, HK
Conversion time of A/D converter	Typ. 120 µs	Typ. 120 µs
Voltage input range	–	–15 to +85 mV
Process data update	Depending on connection method	Max. 30 ms for either channel
Both channels acc. to two-wire principle	20 ms	–
One channel acc. to two-wire principle, one channel acc. to four-wire principle	20 ms	–
Both channels acc. to three-wire principle	32 ms	–
Limit frequency of analog filter	–	48 Hz
Sensor connection type	2-, 3- or 4-wire connection	2-wire connection
Electric data		
Logic voltage U_L	7.5 V	
Power consumption from local bus U_L	Typ. 43 mA	
Peripheral supply voltage U_{ANA}	24 V DC	
Power consumption at U_{ANA}	Typ. 11 mA	
Error message to the higher level control system	Failure of supply voltage U_{ANA}, peripheral/user error	
Mechanical data		
Dimensions (W x H x D)	12.2 x 135 x 71.5 mm	
Protection category	IP20	
Protection class	Class 3 according to VDE 0106, IEC 60536	
Accessories	Connectors and labels included	

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170785	R-IB IL TEMP 2 RTD-PAC	5	3 day(s)
R911170431	R-IB IL TEMP 2 UTH-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Communication Modules



These Communication modules are designed for use within an Inline station. It is used to operate standard I/O devices with serial interfaces on a bus system Parameterization and data exchange is carried out via the bus using process data.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- 4 KB receive buffer and 1 KB transmit buffer
- Wiring terminals easily removed to allow module replacement without rewiring
- Serial modules can be configured to read and write different frames and baud rates
- Diagnostic and status indicators

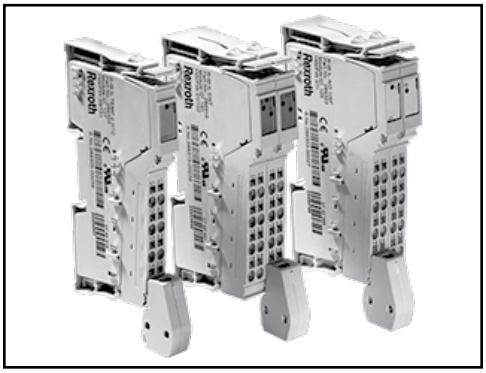
Technical Data

	R-IB IL RS 232-PRO-PAC	R-IB IL RS 485/422-PRO-PAC
Serial interface		
Type	V.24 interface with DTR/CTS handshake, designed as data terminal equipment (DTE), electric data acc. to EIA (RS) 232, CCITT V.28, DIN 66259 Part 1	Half-duplex RS485 or full-duplex RS422, electrical data acc. to EIA (RS) 485, EIA (RS) 422, CCITT V.11
Transmission rate adjustable to	38.4 kbaud	37.5 kbaud
Receiver buffer	4 kbytes	
Transmitter buffer	1 kbyte	
24 V infeed for generation of U_L and U_{ANA}		
Rated value	–	
Permissible range	–	
24 V peripheral supply (main circuit U_M)		
Rated value	–	
Permissible range	–	
Permissible current	–	
Electric data		
Logic voltage U_L	7.5 V	
Power consumption from local bus U_L	Typ. 170 mA	
Mechanical data		
Dimensions (W x H x D)	24.4 x 120 x 71.5 mm	24.4 x 135 x 71.5 mm
Protection category	IP20	
Protection class	Class 3 according to VDE 0106, IEC 60536	
Accessories	Connectors and labels included	

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170440	R-IB IL RS232-PRO-PAC	5	3 day(s)
R911170442	R-IB IL RS485/422-PRO-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - Motion and Counter Modules



Compact modules utilizing spring-cage I/O connectors. Provide the capability to do basic motion control without resorting to complex motion-controller PLCs. Step and direction control of steppers is also available.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Wiring terminals easily removed to allow module replacement without rewiring
- Inputs can read from 5 V DC to 24 V DC inputs
- Incremental and Absolute Encoder Input modules available
- CNT module can count events, calculate frequency and generate pulse streams

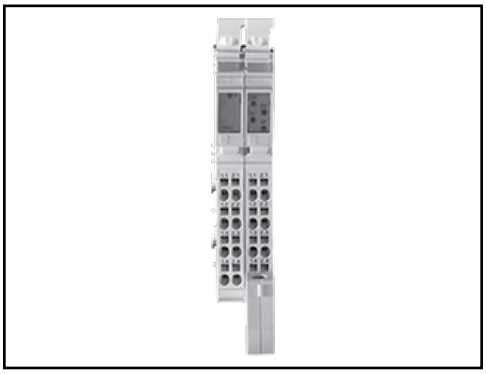
Technical Data

	R-IB IL CNT-PAC— counter module	R-IB IL INC-IN-PAC— incremental-encoder module	R-IB IL SSI-PAC— SSI module
Digital inputs			
Number	4	3	4
Nominal input voltage U_{In}	24 V DC		
Nominal input current U_{In}	5 mA	Typ. 2.7 mA	Typ. 5 mA
Switching output			
Number	1	–	
Digital outputs			
Number	–	1 (double assignment of input E3)	4
Nominal output voltage U_{Out}	–		24 V DC
Nominal current per output I_{Nom}	–		0.5 A
Electric data			
Logic voltage U_L	7.5 V		
Power consumption from local bus U_L	Typ. 40 mA, max. 50 mA	Max. 70 mA	Max. 60 mA
Nominal voltage U_S	24 V DC	Typ. 24 V DC	24 V DC
Nominal current consumption at U_S	Max. 1 A	Typ. 340 mA	Max. 2 A
Error message to the higher level control system	Short-circuit/overload of sensor supply		Failure or overload of encoder supply/no encoder connected/core break at one of the encoder lines
Mechanical data			
Dimensions (W x H x D)	24.4 x 135 x 71.5 mm	24.4 x 141 x 71.5 mm	48.8 x 141 x 71.5 mm
Protection category	IP20		
Protection class	Class 3 according to VDE 0106, IEC 60536		

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170788	R-IB IL CNT-PAC	5	3 day(s)
R911308491	R-IB IL INC-IN-PAC	5	3 day(s)
R911308594	R-IB IL SSI-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - Inline - Cabinet Mount (IP20) - PWM Output Module



The terminal is designed for use within an inline station. It can be used in the four different operating modes: PWM (pulse width modulation), frequency generator, single shot (single pulse generator), and pulse direction signal.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Two independently operating channels
- Output signals as 5 V or 24 V signals
- Short-circuit protected and overload protected outputs
- Diagnostic and status indicators

Technical Data

		R-IB IL PWM/2-PAC
Digital outputs 24 V DC		
Number		2
Nominal output voltage U_{Out}		24 V DC
Differential voltage at I_{Nom}		≤ 1 V
Nominal current I_{Nom} per channel		0.5 A
Nominal current tolerances		10%
Protection		Short-circuit/overload
Signal delay upon power up of:	Nominal resistive load (12 Ω/48 W)	Typ. 80 µs
	Nominal lamp load (48 W)	Typ. 100 µs
	Nominal inductive load (1.2 H, 12 Ω)	Typ. 150 µs
Signal delay upon power down of:	Nominal resistive load (12 Ω/48 W)	Max. 500 Hz
	Nominal lamp load (48 W)	Max. 500 Hz
	Nominal inductive load (1.2 H, 12 Ω)	Max. 0.3 Hz
Actuator connection type		2-wire and 3-wire connection
Digital outputs 5 V DC		
Number		2
Nominal output voltage U_{Out}		5 V DC
Differential voltage at I_{Nom}		0.5 V
Nominal current I_{Nom} per channel		10 mA
Nominal current tolerances		10%
Protection		Short-circuit/overload
Signal delay upon power up of nominal resistive load		2 µs
Signal delay upon power down of nominal resistive load		2 µs
Switching frequency at a nominal resistive load		50 kHz

continued on next page

Technical Data (continued)

Electrical data	
Logic voltage U_L	7.5 V
Power consumption from local bus U_L	130 mA
Nominal voltage U_S	24 V DC
Nominal current consumption from U_S	Max. 1 A
Error message to the higher-level control system	Short-circuit/overload of sensor supply
Mechanical data	
Dimensions (W x H x D)	24.4 x 135 x 71.5 mm
Protection category	IP20
Protection class	Class 3 according to VDE 0106, IEC 60536
Accessories	Connectors and labels included

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911170444	R-IB IL PWM/2-PAC	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - IndraControl S67 - Machine Mount (IP67) - Power Dividers

Feed Module - For supplying IndraControl S67 components mounted on the machine with 24 V DC for expansion of the I/O system.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Allow for one 24V DC cable run out to the machine for I/O power distribution
- IP 67 rating for harsh machine environments

Technical Data

Power Divider	S67-PWR-IN-M12
Connection type	M23 connectors, 6 poles
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (–25 to +30%)
Actuator Voltage U_A	24 V DC (–25 to +30%)
Supply current	
Logic and sensor current I_{LS}	Typ. 4 mA
Actuator current I_A	Typ. 4 mA
Supply outputs	
Number	6
Connection type	M12 connectors, A coded, 4 poles
Current carrying capacity (connector)	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Current carrying capacity (module)	Max. 24 A (U_{LS}: msx. 8 A, U_A: max. 16 A)
Short circuit protection	No
Electrical isolation	
U_{LS} – U_A	500 V DC
Ambient conditions	
Permissible temperature (operation)	–25 to +80 °C
Permissible relative humidity (operation)	5 to 95 %
Permissible air pressure (operation)	795 to 1,080 hPa
Mechanical data	
Dimensions (W x H x D)	50 x 117 x 35 mm
Dimensional drawing	Type 2
Weight	240 g
Protection class	IP67 (NEMA 6&6P), DIN40050 (EN60529)
Vibration resistance	According to IEC 60068-2-6
Shock resistance (temporary)	According to IEC 60068-2-27
LED indicators	
U_{LS} + U_A – Supply status	LED (green)
LED indicators	Non-latching

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911171796	S67-PWR-IN-M12	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - IndraControl S67 - Machine Mount (IP67) - Bus Couplers

IP67 Fieldbus Coupler - Mounted on the machine for connecting local I/O modules to a higher-level fieldbus system.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- 8 on board inputs included with the Profi bus bus coupler
- Built in status light to troubleshoot module out on the machine
- Up to 64 I/O modules can be operated from a single Fieldbus coupler

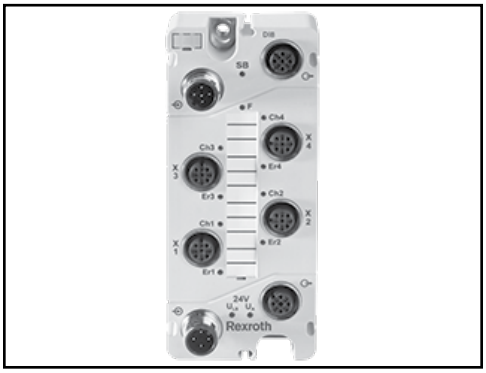
Technical Data

Fieldbus coupler	S67-PB-BK-DI8-M8	S67-S3-BK-DI8-M8
Type	PROFIBUS slave	sercos
Connection type	M12 connectors, B coded, 5 poles	
Transmission speed	12 Mbit/s (automatic recognition)	
Digital inputs		
Number	8	
Connection type	M8 connectors, A coded, 3 poles	
Sensor connection type	2-, 3-wire connection	
Input filter	Parametrizable	
Input characteristic	Type 1, acc. to IEC 61131-2	
Signal voltage (0)	–30 to +5 V DC	
Signal voltage (1)	+11 to +30 V DC	
Input circuit	High-side switching	
Input voltage	24 V DC ($-30 < U_{IN} < +30$ V DC)	
Input current	Typ. 2.8 mA	
Cable length, unshielded	≤ 30 m	
Process image		
Input process image	244 byte	
Output process image	244 byte	
Ambient conditions		
Permissible temperature (operation)	–25 to +60 °C	
Permissible relative humidity (operation)	5 to 95 %	
Permissible air pressure (operation)	795 to 1,080 hPa	
Mechanical data		
Dimensions (W x H x D)	75 x 117 x 35 mm	
Dimensional drawing	Type 1	
Weight	330 g	
Protection class	IP67 (NEMA 6&6P), DIN40050 (EN60529)	
Vibration resistance	According to IEC 60068-2-6	
Shock resistance (temporary)	According to IEC 60068-2-27	

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911171782	S67-PB-BK-DI8-M8	5	3 day(s)
R911172899	S67-S3-BK-DI8-M8	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - IndraControl S67 - Machine Mount (IP67) - Digital Input Modules



IP67 Digital Input Modules - Mounted on the machine for acquiring digital signals, e.g. buttons limit or proximity switches.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Expandable to 500 m per I/O station
- M12 and M8 connection technology in compact housing design

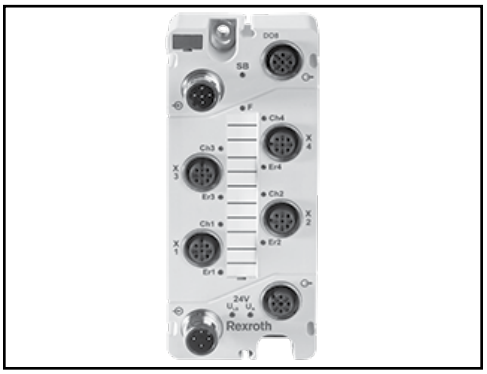
Digital Inputs

Technical data	S67-DI8-M8	S67-DI8-M12
Digital inputs		
Number	8	4
Connection type	M8 connectors, A coded, 3 poles	M12 connectors, A coded, 5 poles
Sensor connection type	2-, 3-wire connection	2-, 3-wire connection
Input filter	Parametrizable	Parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2	Type 2, acc. to IEC 61131-2
Signal voltage (0)	–30 to +5 V DC	–30 to +5 V DC
Signal voltage (1)	+11 to +30 V DC	+11 to +30 V DC
Input circuit	High-side switching	High-side switching
Input voltage	24 VDC (–30 V DC < U_{IN} < +30 V DC)	24 VDC (–30 V DC < U_{IN} < +30 V DC)
Input current	Typ. 7.3 mA	Typ. 7.3 mA
Cable length, unshielded	≤ 30 m	≤ 30 m
Configurable functions		
Input filter (per channel)	0.1/0.5/3/15/20 ms/filter off	0.1/0.5/3/15/20 ms/filter off
Online simulation (per channel)	Lock/unlock; simulation value: 0/1	Lock/unlock; simulation value: 0/1
Diagnostics (per module)	Overload and short circuit (sensor supply), Undervoltage (U_{LS} + U_A)	Overload and short circuit (sensor supply), Undervoltage (U_{LS} + U_A)
Process image		
Process data width	1 byte data + status	1 byte data + status
Ambient conditions		
Permissible temperature (operation)	–25 to +60 °C	–25 to +60 °C
Permissible relative humidity (operation)	5 to 95 %	5 to 95 %
Permissible air pressure (operation)	795 to 1,080 hPa	795 to 1,080 hPa
Mechanical data		
Dimensions (W x H x D)	50 x 117 x 35 mm	50 x 117 x 35 mm

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911171788	S67-DI8-M12	5	3 day(s)
R911171787	S67-DI8-M8	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - IndraControl S67 - Machine Mount (IP67) - Digital Output Modules



IP67 Digital Output Modules - Mounted on the machine for outputting digital signals, e.g. status lights or actuators.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Expandable to 500 m per I/O station
- M12 and M8 connection technology in compact housing design

Digital Outputs

Technical data	S67-DO8-M8	S67-DO8-M12	S67-DO8-M8-2A	S67-DO8-M12-2A
Digital outputs				
Number	8	8	8	8
Connection type	M8 connectors, 3 poles	M12 connectors, 5 poles	M8 connectors, 3 poles	M12 connectors, 5 poles
Sensor connection type	2-, 3-wire connection	2-, 3-wire connection	2-, 3-wire connection	2-, 3-wire connection
Output voltage	≤ U_A	≤ U_A	≤ U_A	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)	2.0 A (max. 2.4 A), short-circuit/overload proof (thermal disconnection)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC	Max. 0.2 V DC	Max. 0.2 V DC	Max. 0.2 V DC
Output current (module)	Max. 4 A	Max. 4 A	Max. 8 A	Max. 8 A
Switching-on of overload circuit	Parametrizable	Parametrizable	Parametrizable	Parametrizable
Output circuit	High-side switching	High-side switching	High-side switching	High-side switching
Information on selecting the actuator				
Rise time from 0 to 1	Typ. 40 µs (resistive load)	Typ. 40 µs (resistive load)	Typ. 30 µs (resistive load)	Typ. 30 µs (resistive load)
Rise time from 1 to 0	Typ. 50 µs (resistive load)	Typ. 50 µs (resistive load)	Typ. 50 µs (resistive load)	Typ. 50 µs (resistive load)
Cable length (unshielded)	≤ 30 m	≤ 30 m	≤ 30 m	≤ 30 m
Configurable functions				
Substitute value strategy (per channel)	Switch substitute value/ hold last value	Switch substitute value/ hold last value	Switch substitute value/ hold last value	Switch substitute value/ hold last value
Substitute value (per channel)	0/1 (Default: 0)	0/1 (Default: 0)	0/1 (Default: 0)	0/1 (Default: 0)
Online simulation (per channel)	Lock/unlock; simulation value: 0/1	Lock/unlock; simulation value: 0/1	Lock/unlock; simulation value: 0/1	Lock/unlock; simulation value: 0/1
Diagnostics (per channel)	Short circuit, wire break (actuators)	Short circuit, wire break (actuators)	Short circuit, wire break (actuators)	Short circuit, wire break (actuators)
Diagnostics (per module)	Undervoltage (U_{LS} + U_A)	Undervoltage (U_{LS} + U_A)	Undervoltage (U_{LS} + U_A)	Undervoltage (U_{LS} + U_A)

continued on next page

Digital Outputs (continued)

Process image				
Process data width	1 byte data + status	1 byte data + status	1 byte data + status	1 byte data + status
Ambient conditions				
Permissible temperature (operation)	–25 to +60 °C	–25 to +60 °C	–25 to +60 °C	–25 to +60 °C
Permissible relative humidity (operation)	5 to 95 %	5 to 95 %	5 to 95 %	5 to 95 %
Permissible air pressure (operation)	795 to 1,080 hPa	795 to 1,080 hPa	795 to 1,080 hPa	795 to 1,080 hPa
Mechanical data				
Dimensions (W x H x D)	50 x 117 x 35 mm	50 x 117 x 35 mm	50 x 117 x 35 mm	50 x 117 x 35 mm

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911171790	S67-DO8-M12	5	3 day(s)
R911171792	S67-DO8-M12-2A	5	3 day(s)
R911171789	S67-DO8-M8	5	3 day(s)
R911171791	S67-DO8-M8-2A	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - IndraControl S67 - Machine Mount (IP67) - Analog Input Modules

IP67 Analog Input Modules - Mounted on the machine for acquiring

analog signals from standard sensors, e.g. temperature or pressure sensors.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Extremely fast cycle times thanks to optimized data transmission
- Largest measuring range compared to competitive equivalent

Analog Inputs

Technical data	S67-AI4-U/I-M12
Analog inputs	
Number	4
Connection type	M12 connectors, A coded, 5 poles
Type of signal	Currents and voltages (differential inputs)
Sensor connection type	2- to 4-wire connection (external shield via knurled nut)
Measuring range	0 to 20 mA, 4 to 20 mA, ±20 mA, 0 to 10 V, ±10 V
Cable length	≤ 30 m
Analog value creation	
Resolution	16 bit
Conversion time	1 ms
Sampling delay	1 ms (Modul), < 100 µs (channel/channel)
Sampling repeat time	1 ms
Failures and errors	
Max. measuring error at 25 °C	ca. ±0.2 % the measuring range
Temperature error	ca. ±0.01 % the measuring range/K
Configurable functions	
Measuring range (per channel)	0 to 20 mA, 4 to 20 mA, ±20 mA, 0 to 10 V, ±10 V
Limiting values (per channel)	Lock/unlock
Input filter (per channel)	Low pass
Sampling duration (per channel)	1, 2, 4, 8 ms
Interference frequency suppression (per channel)	50/60 Hz
Online simulation (per channel)	Lock/unlock, simulation value (according to measuring range)

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Analog Inputs (continued)

Configurable functions	
Diagnostics (per module)	Undervoltage (U_{LS} + U_A) Short circuit (sensor power supply) Wire break (sensor power supply) Limit value violation Overrange/measuring range underflow
Process image	
Process data width	8 byte data + status
Ambient conditions	
Permissible temperature (operation)	–25 to +60 °C
Permissible relative humidity (operation)	5 to 95 %
Permissible air pressure (operation)	795 to 1,080 hPa
Mechanical data	
Dimensions (W x H x D)	50 x 177 x 35 mm

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911171793	S67-AI4-U/I-M12	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - IndraControl S67 - Machine Mount (IP67) - Analog Output Modules

IP67 Analog Output Modules - Mounted on the machine for outputting analog signals for external controls.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Online simulation
- Event driven signal substitution
- Largest measuring range compared to competition

Analog Outputs

Technical data	S67-AO4-U/I-M12
Analog outputs	
Number	4
Connection type	M12 connectors, A coded, 5 poles
Type of signal	Currents and voltages
Sensor connection type	2- to 4-wire connection (external shield via knurled nut)
Measuring range	0 to 20 mA, 4 to 20 mA, ±20 mA, 0 to 10 V, ±10 V
Output load (load impedance)	≤ 500 Ω (current) ; ≥ 5 kΩ (voltage)
Maximum capacitive load (at voltage outputs)	10 nF
Maximum inductive load (at current outputs)	1 mH
Cable length	≤ 30 m
Analog value creation	
Resolution	15 bit (unipolar), 16 bit (bipolar)
Monotony	Yes
Cycle time	Typ. 1 ms
Recovery time for resistive, inductive and capacitive loads	Typ. 1 ms
Failures and errors	
Max. measuring error at 25 °C	≤ ±0.2 % the measuring range
Overshooting	Typ. ±0.05 % the measuring range
Output ripple	Typ. ±0.02 % the measuring range
Crosstalk between the channels at DC voltage and AC voltage 50 Hz and 60 Hz	–90 dB
Short circuit protection	Electronic
Nominal output current	Max. 1 A

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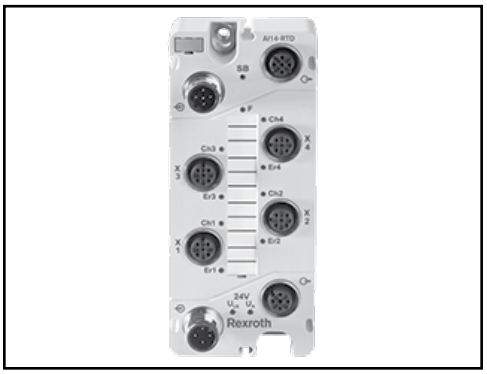
Analog Outputs (continued)

Configurable functions	
Measuring range (per channel)	0 to 20 mA, 4 to 20 mA, ±20 mA, 0 to 10 V, ±10 V
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0 mA or 0 V/substitute value according to measuring range (Default: 0 mA or 0 V)
Online simulation (per channel)	Lock/unlock, simulation value (according to measuring range)
Diagnostics (per module)	Short circuit (actuator supply), wire break (current), undervoltage (U_{LS} + U_A)
Process image	
Process data width	8 byte data + status
Ambient conditions	
Permissible temperature (operation)	–25 to +60 °C
Permissible relative humidity (operation)	5 to 95 %
Permissible air pressure (operation)	795 to 1,080 hPa
Mechanical data	
Dimensions (W x H x D)	50 x 117 x 35 mm

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911171795	S67-AO4-U/I-M12	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - IndraControl S67 - Machine Mount (IP67) - Temperature Modules



IP67 RTD Signal Input Modules - Mounted on the machine for analog signals from temperature sensors.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- Configurable diagnostic threshold
- Online simulation
- Largest measuring range compared to competition

Temperature Modules

Technical data	S67-AI4-RTD-M12
Analog inputs	
Number	4
Connection type	M12 connectors, A coded, 5 poles
Type of signal	Resistance thermometers, resistors, potentiometers
Sensor connection type	2- to 4-wire connection (external shield via knurled nut)
Signal measuring range	Resistance thermometer: PT100, PT200, PT500, PT1000, NI100, NI120, NI1000; Resistors: 1 kΩ and 4 kΩ; Potentiometer: 0 to 100 % setting angle (for 1.25 kΩ and 4 kΩ); Free characteristics: PT 3000, NTC etc.
Temperature range	PT: –200 to +850 °C, NI: –60 to +250 °C
Cable length	≤ 30 m
Analog value creation	
Resolution	16 bit
Input filter	16.7 Hz, 33 Hz, 50 Hz, 60 Hz, 120 Hz, 250 Hz, 500 Hz
Failures and errors	
Max. measuring error at 25 °C	±0.1 % the measuring range
Temperature error	±0.001 % the measuring range/K
Configurable functions	
Measuring range (per channel)	PT100, PT200, PT500, PT1000, NI100, NI120, NI1000; Resistors: 1 kΩ and 4 kΩ; Potentiometer: 0 to 100 % setting angle (for 1 kΩ and 4 kΩ); Free characteristics: PT 3000, NTC
Connection type	2-, 3-, 4-wire connection
Limiting values (per channel)	Lock/unlock, Min1/Min2/Max1/Max2
Input filter (per channel)	16.7 Hz, 33 Hz, 50 Hz, 60 Hz, 120 Hz, 250 Hz, 500 Hz

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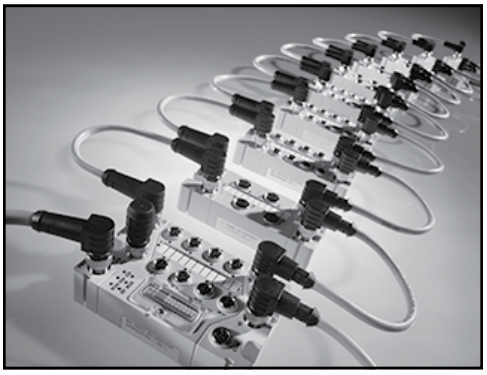
Temperature Modules (continued)

Configurable functions	
Diagnostics (per module)	Undervoltage (U_{LS} + U_A) Wire break (sensor power supply) Limit value violation Overrange/measuring range underflow
Process image	
Process data width	8 byte data + status
Ambient conditions	
Permissible temperature (operation)	–25 to +60 °C
Permissible relative humidity (operation)	5 to 95 %
Permissible air pressure (operation)	795 to 1,080 hPa
Mechanical data	
Dimensions (W x H x D)	50 x 177 x 35 mm

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911171794	S67-AI4-RTD-M12	5	3 day(s)

GoTo Focused Delivery Program: I/O

I/O - IndraControl S67 - Machine Mount (IP67) - Cabling



IP67 ready-made cables for easy system connectivity on the machine.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToIO***

Features

- See Technical Data for more information.

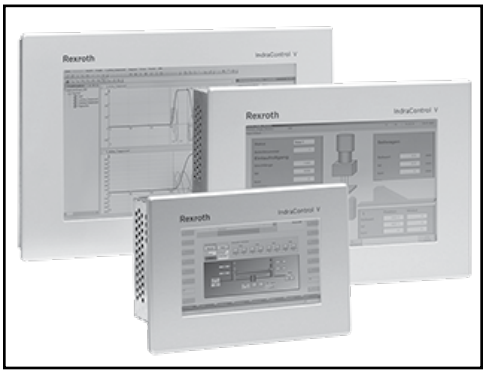
Technical Data

S67 Profibus Cables	Type code	Length in meters
Bus cable PROFIBUS DP, shielded, 5-pin, PUR M12 plug, straight, B-coded – open end	IKB0048/005,0 (*******-*******-*******)	5m
Bus cable PROFIBUS DP, shielded, 5-pin, PUR M12 socket, straight, B-coded – open end	IKB0049/005,0 (*******-*******-*******)	5m
Bus cable PROFIBUS DP, shielded, 5-pin, PUR M12 plug, straight, B-coded – M12 socket, straight, B-coded	IKB0050/000,3 (*******-*******-*******)	0.3m
M12 terminating resistor, PROFIBUS, 5 pins, B-coded	INS0762/CNN (**-*****-****-*****-****)	

Voltage and System Bus Cables	Type code	Length in meters
Voltage cable, unshielded 4-pin, 0.75 mm², PUR M12 socket, straight, A-coded – open end	RKB0047/005,0 (*******-*******-*******)	5m
Voltage cable, not shielded, 4-pin, 0.75 mm², PUR M12 connector, straight, A-coded – M12 socket, straight, A-coded	RKB0046/000,2 (*******-*******-*******)	0.2m
Systembus cable, M12 plug, M12 connector	RKB0041/000,2 (*******-*******-*******)	0.2m
Systembus cable, M12 plug, M12 connector	RKB0041/001,0 (*******-*******-*******)	1m
Systembus termination plug, M12 connector	RBS0020/CNN (**-*****-****-*****-****)	

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911308301	IKB0048/005.0	3	5 day(s)
R911308300	IKB0049/005.0	3	5 day(s)
R911308250	IKB0050/000.3	3	5 day(s)
R911296632	INS0762/CNN	3	5 day(s)
R911171998	RBS0020/CNN	5	3 day(s)
R911171990	RKB0041/000.2	3	5 day(s)
R911171993	RKB0041/001,0 (*******-*******-*******)	3	5 day(s)
R911172102	RKB0046/000.2	3	5 day(s)
R911172100	RKB0047/005.0	3	5 day(s)

HMIs - Standard HMIs



The IndraControl VR series HMI is a compact operator interface with an embedded operating system, configured with Rexroth's WinStudio development software. The modern 16:9 screen ratio is available in 4, 7, and 9 inch sizes.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToHMI***

Features

- Compact size and shallow mounting depth
- 16:9 format - more modern, more usable space, visually appealing
- Uses WinStudio - one software for all Rexroth HMI products

Technical Data

	VR2104	VR2107 AA*	VR2109 AA*
Display	TFT widescreen		
	10.8 cm (4.3")	17.8 cm (7")	22.8 cm (9")
Resolution	480 x 272	800 x 480	800 x 480
Processor / CPU	ARM Cortex A8 800 MHz		
Application memory	512 MB		
Flash memory	256 MB		
Operation type	Touch screen		
Interfaces	1 x Ethernet TCP/IP, 2 x USB-Host		
Supply voltage required	24 V DC		
Front protection degree	IP65		
Dimensions (W x H x D)	140 x 100 x 45 mm	211 x 150 x 50 mm	263 x 178 x 50 mm
Firmware (preloaded)	Operation system Windows Compact 7, WinStudio Lite license with 500 tags included		

WinStudio Runtime License	
SWS-WINSTU-RUN-07VRS-D0-WCE1K5	Winstudio 7 Runtime single license 1.5K variables (Windows CE 6.0)

Power supply (UPS) for use with external 24V supply	
VAU01.1U-024-024-240-NN	Power Supply – UPS (Uninterrupted power supply , 24 V DC, 240 watts)

* AA = resistive touch. Capacitive touch (..CA) versions will be available but are not part of the GoTo portfolio.

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911323620	SWS-WINSTU-RUN-07VRS-D0-WCE1K5	1	1 day(s)
R911171024	VAU01.1U-024-024-240-NN	1	5 day(s)
R911340500	VR2104.01-00-01-N2-NNN-AA	1	5 day(s)
R911340503	VR2107.01-00-01-N2-NNN-AA	1	5 day(s)
R911340051	VR2109.01-00-01-N2-NNN-AA	1	5 day(s)

GoTo Focused Delivery Program: HMIs

HMIs - Embedded HMI

Powerful HMIs with great networking and 3rd party connectivity. Recipes, trending and other MES-like functionality available and easily implemented.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToHMI***

Features

- Touchscreens
- Mulitple ports including USB, Ethernet, Serial and Profi bus available onboard
- Allows for connection to any product that supports OPC

Technical Data

	VEP 30.5	VEP 40.5	VEP15.6
Display	8.4" - TFT	12.1" – TFT	15" - TFT
Resolution	800 x 600	800 x 600	1366 × 768
Touchscreen	Yes	Yes	10 finger Mult-Touch
Processor	Intel ATOM, N455, 1.6 GHz	Intel ATOM N455, 1.6 GHz	Intel Atom Bay Trail E3845, 1,9Ghz
RAM	2 GB	2 GB	4 GB RAM (32GB flash onboard)
Compact flash	2 x (XCF1, XCF2)	2 (XCF1, XCF2)	1x CFast
USB		3 (1 x Front)	3 (1x USB3.0, 2x USB2.0
Ethernet TCP/IP	1	1	2 x Gigabit
Supply voltage	24 V DC		
Operating system	Windows 7		
Approvals	CE/UL/CSA		
Front protection degree	IP65		
Dimensions (W x H x D)	296 x 200 x 75 mm	350 x 290 x 51 mm	422 x 275 x 62.5 mm
Firmware required	FWA-VEP*05-W7*-01VRS-D0-A* 32	FWA-VEP*05-W7*-01VRS-D0-A* 32	FWA-VEP*06-W7*-01VRS-D0-A4 32

Firmware	
FWA-VEP*05-W7*-01VRS-D0-A* 32	Firmware for IndraControl VEPxx.5-Atom (Windows 7)
FWA-VEP*06-W7*-01VRS-D0-A4 32	Firmware for IndraControl VEPxx.6 (WES7 and Intel Atom Bay Trail E3845 CPU

Software w/ license option	
SWA-IWORKS-ML*-13VRS-D0-INST*	Software Installation WinStudio 7.3 SP2 (Windows 7) with VEPxx.5
SWL-IWORKS-ML*-NNVRS-D0-COM	Single license – OPC / WinStudio lite (Windows Xpe or Windows 7)

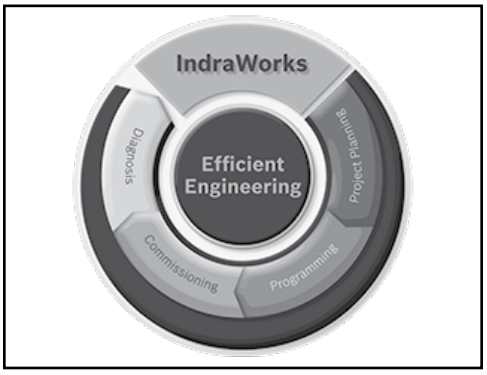
WinStudio Runtime License	
SWS-WINSTU-RUN-07VRS-D0-1K5	Winstudio 07VRS Runtime single license 1.5K variables (Windows Xpe or Windows 7)

Power supply (UPS) for use with external 24V supply	
VAU01.1U-024-024-240-NN	Power Supply – UPS (Uninterrupted power supply , 24 V DC, 240 watts)

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911337389	FWA-VEP*05-W7*-01VRS-D0-A* 32	1	5 day(s)
R911370518	FWA-VEP*06-W7*-01VRS-D0-A4 32	1	5 day(s)
R911337435	SWA-IWORKS-ML*-13VRS-D0-INST*	1	5 day(s)
R911332867	SWL-IWORKS-ML*-NNVRS-D0-COM	1	5 day(s)
R911323607	SWS-WINSTU-RUN-07VRS-D0-1K5	1	1 day(s)
R911171024	VAU01.1U-024-024-240-NN	1	5 day(s)
R911173984	VEP15.6GAN-4G02E-A4D-32G-NN-FW	1	5 day(s)
R911173754	VEP30.5EFN-2G0NE-A3D-NNN-NN-FW	1	5 day(s)
R911173150	VEP40.5DBN-2G0NE-A3D-NNN-NN-FW	1	5 day(s)

GoTo Focused Delivery Program: Software

Software - IndraWorks



IndraWorks - a complete software suite can program HMIs, PLCs, drives and I/O systems in one IEC61131-3 environment. Rexroth IndraWorks allows you to solve all tasks in a uniform and in tuitive software environment - from project planning and programming to visualization and diagnostics.

The uniform engineering framework IndraWorks is consistently available for all systems from the Rexroth Automation House. You, as a user, profit from the fast and transparent access to all functions and system data of the automation components. The standardized tools and interfaces help you to solve all engineering tasks centrally with a single piece of software.

For complete engineering and design information: ***GoTo www.boschrexroth-us.com/GoToSoftware***

Features

- Your benefits:
- Available for all systems and solutions from the Rexroth Automation House
- Integrated framework for all engineering tasks
- Consistent operating environment for project planning, programming, visualization and diagnostics
- Central project management with intuitive system navigation
- Intelligent operation with wizard support
- Comprehensive online help
- Uniform programming according to the PLC standard IEC 61131-3
- PLCopen-conforming function block and technology libraries
- Standardized interfaces for communication
- Transparent access to all system components
- Integrated FDT/DTM interface for integration of the DTM of third party manufacturers
- Software programs all Bosch Rexroth PLCs and VEP HMIs
- Optional IndraWorks Tool CamBuilder for IndraMotion available

Part Number	Description	Max. Quantity	Shipment (Business Days)
R911334632	SWA-IWORKS-ML*-12VRS-D0-DVD**	1	1 day(s)
R911337434	SWA-IWORKS-ML*-13VRS-D0-DVD**	1	1 day(s)
R911342952	SWA-IWORKS-ML*-14VRS-D0-DVD**	1	1 day(s)
R911335358	SWA-IWORKS-MLD-12VRS-D0-DVD**-COPY	1	1 day(s)
R911337640	SWA-IWORKS-MLD-13VRS-D0-DVD**-COPY	1	1 day(s)
R911334627	SWL-IWORKS-ML*-12VRS-D0-ENG	1	1 day(s)
R911337436	SWL-IWORKS-ML*-13VRS-D0-ENG	1	1 day(s)
R911342954	SWL-IWORKS-ML*-14VRS-D0-ENG	1	1 day(s)
R911334612	SWL-IWORKS-XLC-12VRS-D0-ENG	1	1 day(s)
R911337442	SWL-IWORKS-XLC-13VRS-D0-ENG	1	1 day(s)
R911334634	SWS-IWORKS-CAM-12VRS-D0	1	1 day(s)
R911337453	SWS-IWORKS-CAM-13VRS-D0	1	1 day(s)

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