

IndraDrive Cs compact multi-protocol drive system



IndraDrive Cs – compact drives with Ethernet-based communication

With the new, compact IndraDrive Cs drive system, Rexroth is expanding the lower power range of the IndraDrive drive platform that has enjoyed worldwide success. In addition to its space-saving design and outstanding performance data the IndraDrive Cs also offers an extensive range of Ethernet-based communication interfaces.

The newly developed communication hardware with multiple protocol compatibility enables the IndraDrive Cs to meet today's higher requirements for openness and consistency. sercos, PROFINET IO, EtherNet/IP and EtherCat are available even in the first expansion level. These Ethernet-based interfaces are connected via universal communication hardware which is easily configured by means of software.

Rexroth has thus given users a high degree of flexibility in communication with minimal engineering work. Combined with the new multiple encoder interface for evaluating all standard encoder types and an additional vacant slot, it is possible to confidently cover very specific drive tasks. With IEC-compliant motion logic and industry-specific technology functions the IndraDrive Cs is ideally suitable for a wide variety of applications.



▲ **IndraDrive Cs is the intelligent and multi-protocol-capable compact drive system to increase the efficiency of machines and plants.**

The drives – universal and intelligent



Multiple Ethernet

The new communication interface with multiple protocol compatibility enables IndraDrive Cs to be used on a universal basis with a wide range of Ethernet-based communication protocols – without even requiring any changes to the hardware.

IndraDrive Cs supports the following protocols:

- ▶ sercos III
- ▶ PROFINET IO
- ▶ EtherNet/IP
- ▶ EtherCat

Alternatively, IndraDrive Cs can also be equipped with a conventional communication interface such as PROFIBUS or CANopen.

Multiple Encoder

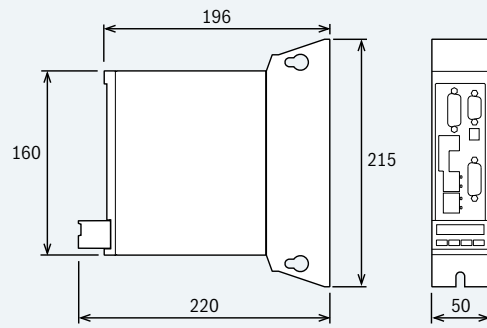
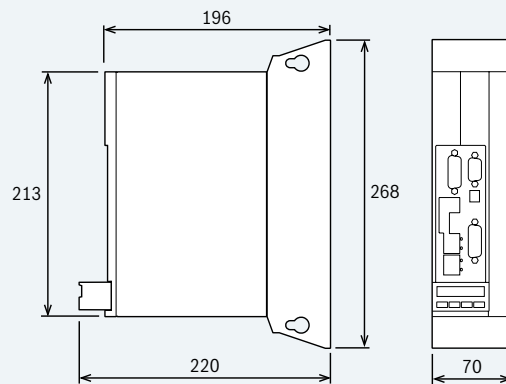
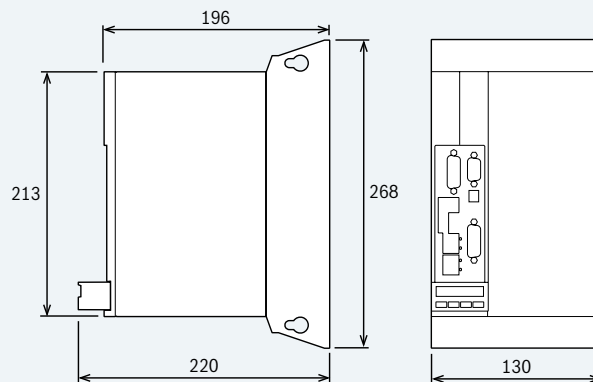
With its multiple encoder interface, IndraDrive Cs is able to support the most common encoder types – which gives you total freedom to select the encoder and motor system of your choice.

IndraDrive Cs supports the following encoder types:

- ▶ EnDat 2.1 and 2.2 absolute encoders
- ▶ Hiperface® absolute encoders
- ▶ Rexroth MSM motors absolute encoders
- ▶ 1 V_{pp} incremental signals
- ▶ 5 V TTL incremental signals
- ▶ SSI encoder
- ▶ Resolver

Technical features

- ▶ 2 series for direct connection to 110 - 230 VAC or 200 - 500 VAC line
- ▶ suitable for motors with continuous outputs of 0.05 to 9 kW
- ▶ complete range of scalable drives
- ▶ compatible with the IndraDrive family
- ▶ digital inputs/outputs and analog input on board
- ▶ intelligent operating panel with programming module function
- ▶ IEC-compliant motion logic (option)
- ▶ integrated safety technology Safe Torque Off, Safe Brake Control and Safe Motion – up to category 4, PL e according to EN ISO 13849-1 and SIL 3 according to EN 62061 (option)
- ▶ flexible activation of safety functions via CIP safety on sercos or via discrete signals

Dimensions size 1**Dimensions size 2****Dimensions size 3**

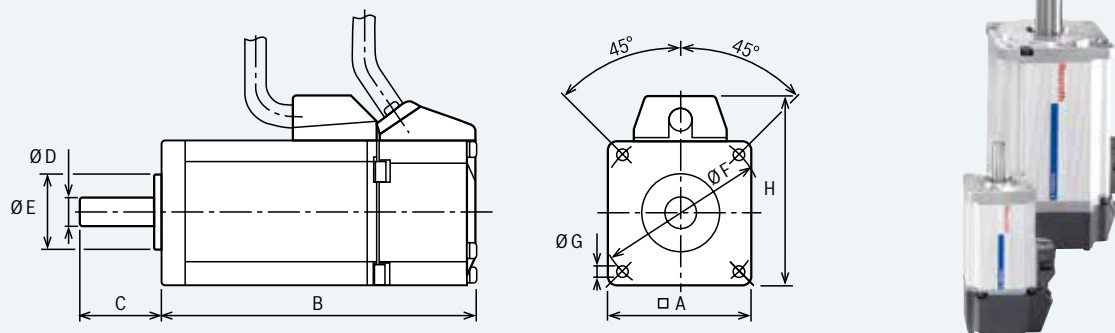
Performance data	Mains connection voltage [V]	Dimensions size	Continuous current [A _{eff}]	Maximum current [A _{eff}]	DC bus continuous power without/with choke [kW]
HCS01.1E-W0003-A-02	3 AC 110 ... 230 V ¹⁾	1	1.4	3.3	0.15/-
HCS01.1E-W0006-A-02		1	2.4	6.0	0.25/-
HCS01.1E-W0009-A-02		1	3.0	9.0	0.46/-
HCS01.1E-W0013-A-02		1	4.4	13.0	0.80/-
HCS01.1E-W0018-A-02		2	7.6	18.0	1.80/-
HCS01.1E-W0005-A-03	3 AC 200 ... 500 V	1	2.0	5.0	0.46/-
HCS01.1E-W0008-A-03		1	2.7	8.0	0.86/-
HCS01.1E-W0018-A-03		2	7.6	18.0	1.70/-
HCS01.1E-W0028-A-03		2	11.5	28.0	2.60/4.00
HCS01.1E-W0054-A-03		3	21.0	54.0	9.00/14.00

¹⁾ Operation with single-phase power supply, derating at HCS01.1E-W0013 and -W0018

The motors – dynamic and compact

The maintenance-free MSM motors are available in five sizes with continuous mechanical outputs of up to 750 W. Thanks to their high power density in combination with a short length and minimal flange size they are suitable for use in a wide variety of applications. The motors designed to protection category IP54 are equipped with an absolute encoder and can be supplied optionally either with or without a holding brake. They are absolutely ideal for use on IndraDrive Cs drives with 3 AC 230 V line input. For higher mains connection voltages and continuous ratings of up to 9 kW, please choose from our comprehensive range of IndraDyn motors.

Dimensions

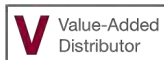


Motor	Continuous rating	Continuous standstill torque	Maximum torque	Maximum speed	Dimensions								Protection category
	P_N [W]	M_O [Nm]	M_{max} [Nm]	n_{max} [rpm]	A [mm]	B without/with brake [mm]	C [mm]	Ø D [mm]	Ø E [mm]	Ø F [mm]	Ø G [mm]	H [mm]	
MSM 019A	50	0.16	0.48	5,000	38	72/102	25	8	30	45	3.4	51	IP54 (shaft IP40)
MSM 019B	100	0.32	0.95	5,000	38	92/122	25	8	30	45	3.4	51	
MSM 031B	200	0.64	1.91	5,000	60	79/115.5	30	11	50	70	4.5	73	
MSM 031C	400	1.3	3.8	5,000	60	98.5/135	30	14	50	70	4.5	73	
MSM 041B	750	2.4	7.1	4,500	80	112/149	35	19	70	90	6	93	

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