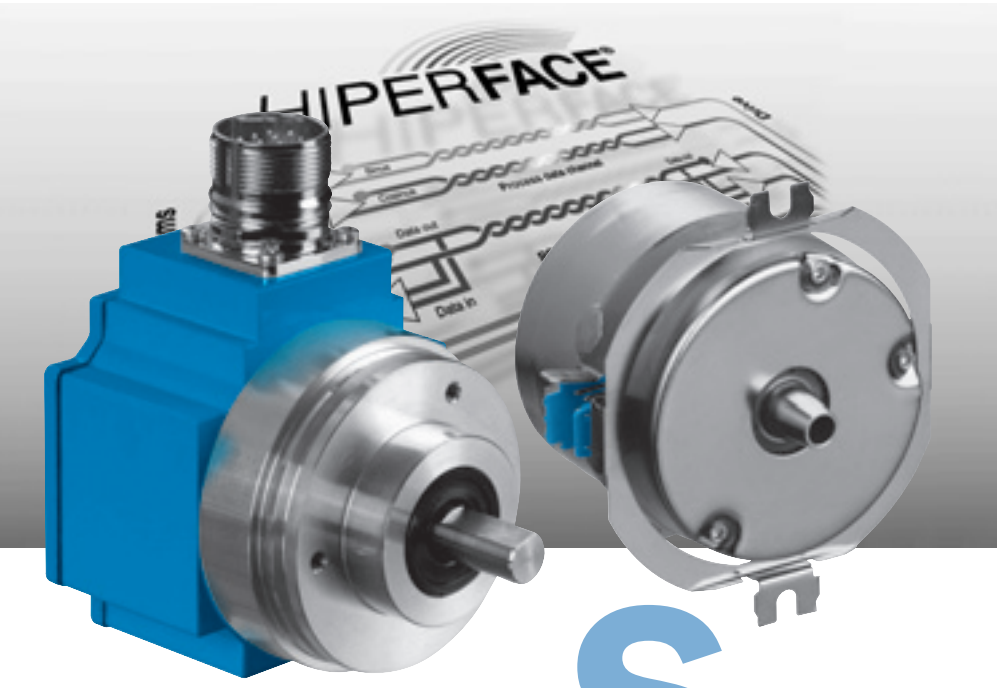
DATA SHEET

SinCos® SRS50, SRM50, SRS60, SRM60 SRS50 Standalone, SRM50 Standalone: Motor Feedback Systems with HIPERFACE®-Interface for Servo Motors



Writing motor-specific data to the electronic type label and programming are important features of these series.

Select the motor feedback system to suit your individual requirements.
Possible product variations:

- Plug-in shaft or tapered shaft with different stator supports
- 6 mm or 10 mm shaft with connector or cable exit
- Versions for integration, attachment, or standalone versions

1,024 sine/ cosine periods

Motor Feedback Systems

HIPERFACE® by SICK|STEGMANN

SRS/SRM series of motor feedback systems are used worldwide in many different applications and environments.
Absolute positioning with 32,768 steps per revolution and a maximum of 4,096 revolutions give a total resolution of 134,217,728 steps.

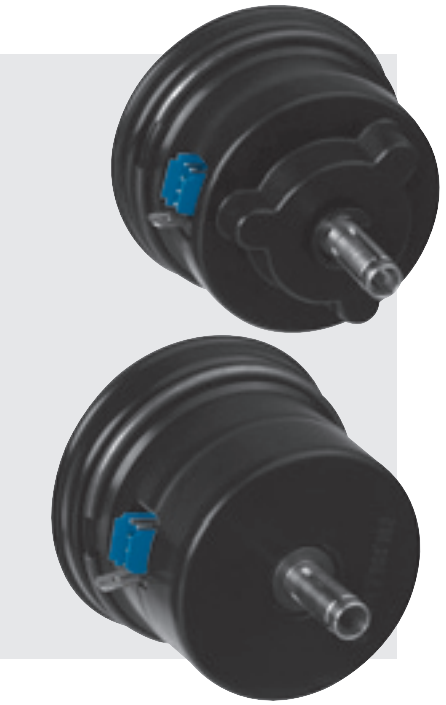
SICK|STEGMANN

12-2007

1,024 sine/ cosine periods

Motor Feedback Systems

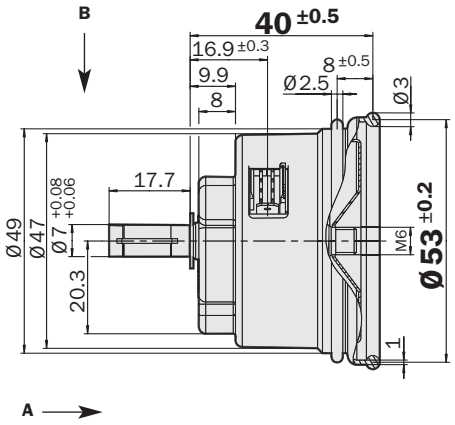
- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

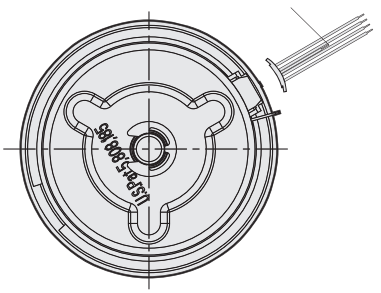


Accessories

- Connection technology
- Fixing technology
- Programming tool

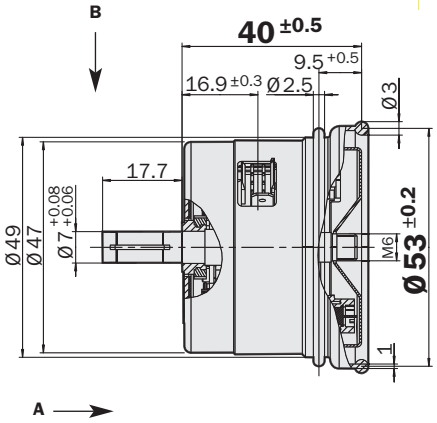
Dimensional drawing SRS50, rubber support Ø 50

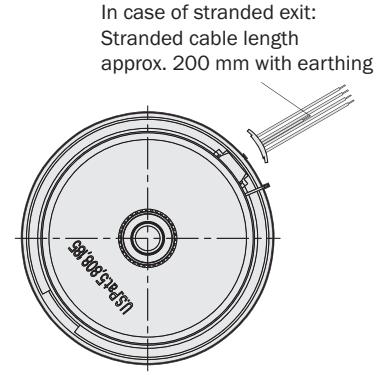




General tolerances to DIN ISO 2768-mk

Dimensional drawing SRM50, rubber support Ø 50





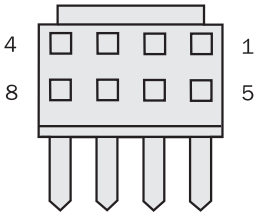
General tolerances to DIN ISO 2768-mk

PIN and wire allocation

PIN	Signal	Colour of Wires	Explanation
1	U_S	red	Supply voltage 7 ... 12 V
2	GND	blue	Ground connection
3	REFSIN	brown	Process data channel
4	REFCOS	black	Process data channel
5	Data +	grey or yellow	RS-485-parameter channel
6	Data –	green or purple	RS-485-parameter channel
7	+ SIN	white	Process data channel
8	+ COS	pink	Process data channel

Caution: To ensure proper function, the screen connection strand (200 mm) MUST be connected. It is included in the supply.

U_S and GND are internally connected to the screen by capacitors of 2.2 nF.



Direction of view "B"

Technical Data acc. to DIN 32878		Plug-in Shaft SRS/SRM50	SRS	SRM
Number of sine/cosine periods per revolution		1,024		
Dimensions		mm (see dimensional drawing)		
Mass		0.2 kg		
Inertial rotor moment		10 gcm^2		
Type of code for the absolute value		Binary		
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)		Increasing		
Measurement step after generating arctan with 12 bit resolution		0.3 angular seconds		
Total number of steps	Single SRS	32,768		
	Multi SRM	134,217,728 = 32,768 x 4,096		
Error limits for the digital absolute value				
via RS 485		± 90 angular seconds		
Error limits for evaluating the "1,024" signals,				
integral non-linearity		± 45 angular seconds		
Non-linearity within a sine/cosine period				
differential non-linearity		± 7 angular seconds		
Output frequency for sine/cosine signals		0 ... 200 kHz		
Working speed up to which the absolute position can be reliably produced		6,000 min^{-1}		
Max. operating speed		12,000 min^{-1}		
Max. angular acceleration		0.2 x 10^6 rad/s^2		
Operating torque		0.2 Ncm		
Starting torque		0.4 Ncm		
Permissible shaft movement				
static	radial/axial	± 0.5 mm/± 0.75 mm		
dynamic	radial/axial	± 0.1 mm/± 0.2 mm		
Angular motion, perpendicular to the rotational axis				
static		± 0.005 mm/mm		
dynamic		± 0.0025 mm/mm		
Life of ball bearings		3.6 x 10^9 rotations		
Working temperature range		– 20 ... + 115 °C		
Storage temperature range (without packaging)		– 40 ... + 125 °C		
Permissible relative humidity [1]		90 %		
Resistance				
to shocks [2]		100/10 g/ms		
to vibration [3]		20/10 ... 2000 g/Hz		
Protection to IEC 60529 [4]		IP 40		
EMC [5]				
Operating voltage range		7 ... 12 V		
Recommended supply voltage		8 V		
Max. operating current, no load		80 mA		
Available memory area				
within EEPROM 512 [6]		128 bytes		
within EEPROM 2048 [6]		1,792 bytes		
Interface signals				
Process data channel = SIN, REFSIN, COS, REFCOS		Analogue, differential		
Parameter channel = RS 485		Digital		

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and 61000-6-3
The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. This is also where the GND (0 V) connection of the supply voltage is linked to earth.
Users must perform their own tests when other screen designs are used.

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information

SRS/SRM50; plug-in shaft Ø 7mm; rubber support

Type	Part no.	Description
SRS50-HAA0-K01	1034170	Single, 512 EEprom, connector
SRS50-HAV0-K01	1034174	Single, 512 EEprom, stranded cable
SRS50-HAA0-K02	1034171	Single, 2048 EEprom, connector
SRS50-HAV0-K02	1034175	Single, 2048 EEprom,stranded cable
SRM50-HAA0-K01	1034104	Multi, 512 EEprom, connector
SRM50-HAV0-K01	1034109	Multi, 512 EEprom, stranded cable
SRM50-HAA0-K02	1034105	Multi, 2048 EEprom, connector
SRM50-HAV0-K02	1034110	Multi, 2048 EEprom, stranded cable

1,024 sine/ cosine periods

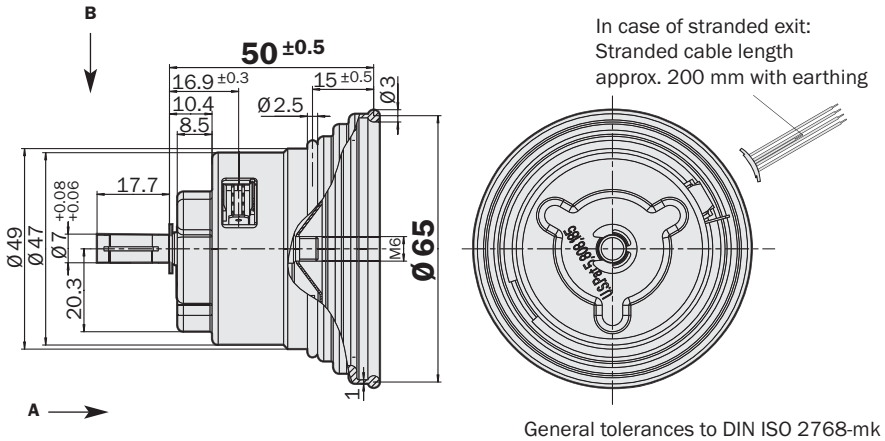
Motor Feedback Systems

- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

Accessories

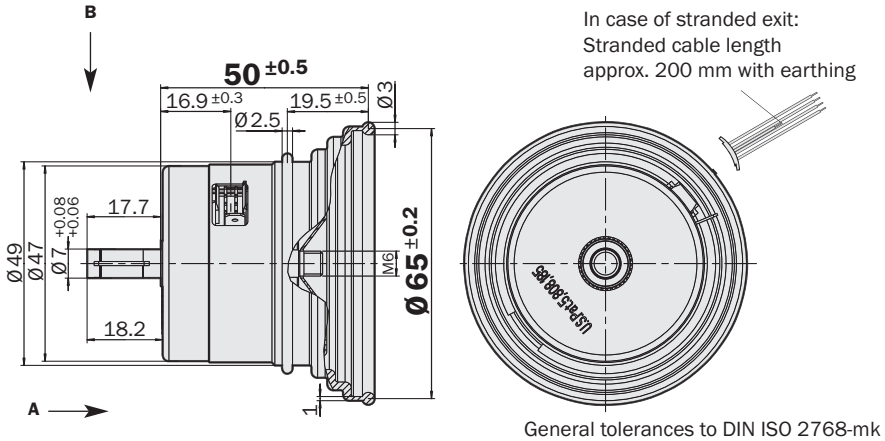
- Connection technology
- Fixing technology
- Programming tool

Dimensional drawing SRS60, rubber support Ø 60



General tolerances to DIN ISO 2768-mk

Dimensional drawing SRM60, rubber support Ø 60



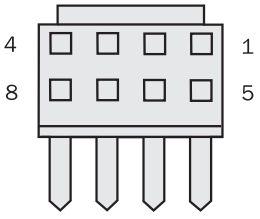
General tolerances to DIN ISO 2768-mk

PIN and wire allocation

PIN	Signal	Colour of Wires	Explanation
1	U_S	red	Supply voltage 7 ... 12 V
2	GND	blue	Ground connection
3	REFSIN	brown	Process data channel
4	REFCOS	black	Process data channel
5	Data +	grey or yellow	RS-485-parameter channel
6	Data –	green or purple	RS-485-parameter channel
7	+ SIN	white	Process data channel
8	+ COS	pink	Process data channel

Caution: To ensure proper function, the screen connection strand (200 mm) MUST be connected. It is included in the supply.

U_S and GND are internally connected to the screen by capacitors of 2.2 nF.



Direction of view "B"

Technical Data acc. to DIN 32878		Plug-in Shaft SRS/SRM60	SRS	SRM
Number of sine/cosine periods per revolution		1,024		
Dimensions		mm (see dimensional drawing)		
Mass		0.2 kg		
Inertial rotor moment		10 gcm^2		
Type of code for the absolute value		Binary		
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)		Increasing		
Measurement step after generating arctan with 12 bit resolution		0.3 angular seconds		
Total number of steps	Single SRS	32,768		
	Multi SRM	134,217,728 = 32,768 x 4,096		
Error limits for the digital absolute value				
via RS 485		± 90 angular seconds		
Error limits for evaluating the "1,024" signals,				
integral non-linearity		± 45 angular seconds		
Non-linearity within a sine/cosine period				
differential non-linearity		± 7 angular seconds		
Output frequency for sine/cosine signals		0 ... 200 kHz		
Working speed up to which the absolute position can be reliably produced		6,000 min^{-1}		
Max. operating speed		12,000 min^{-1}		
Max. angular acceleration		0.2 x 10^6 rad/s^2		
Operating torque		0.2 Ncm		
Starting torque		0.4 Ncm		
Permissible shaft movement				
static	radial/axial	± 0.5 mm/± 0.75 mm		
dynamic	radial/axial	± 0.1 mm/± 0.2 mm		
Angular motion, perpendicular to the rotational axis				
static		± 0.005 mm/mm		
dynamic		± 0.0025 mm/mm		
Life of ball bearings		3.6 x 10^9 rotations		
Working temperature range		– 20 ... + 115 °C		
Storage temperature range (without packaging)		– 40 ... + 125 °C		
Permissible relative humidity [1]		90 %		
Resistance				
to shocks [2]		100/10 g/ms		
to vibration [3]		20/10 ... 2000 g/Hz		
Protection to IEC 60529 [4]		IP 40		
EMC [5]				
Operating voltage range		7 ... 12 V		
Recommended supply voltage		8 V		
Max. operating current, no load		80 mA		
Available memory area				
within EEPROM 512 [6]		128 bytes		
within EEPROM 2048 [6]		1,792 bytes		
Interface signals				
Process data channel = SIN, REFSIN, COS, REFCOS		Analogue, differential		
Parameter channel = RS 485		Digital		

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and 61000-6-3
The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. This is also where the GND (0 V) connection of the supply voltage is linked to earth.
Users must perform their own tests when other screen designs are used.

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information

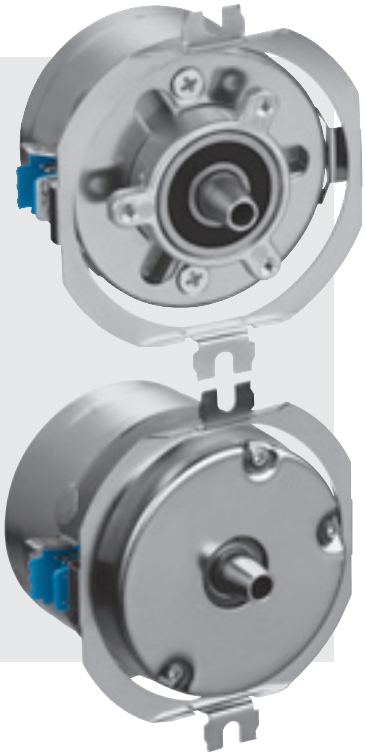
SRS/SRM60; plug-in shaft Ø 7mm; rubber support

Type	Part no.	Description
SRS60-HAA0-K01	1034213	Single, 512 EEprom, connector
SRS60-HAV0-K01	1034215	Single, 512 EEprom, stranded cable
SRS60-HAA0-K02	1034214	Single, 2048 EEprom, connector
SRS60-HAV0-K02	1034216	Single, 2048 EEprom,stranded cable
SRM60-HAA0-K01	1034153	Multi, 512 EEprom, connector
SRM60-HAV0-K01	1034155	Multi, 512 EEprom, stranded cable
SRM60-HAA0-K02	1034154	Multi, 2048 EEprom, connector
SRM60-HAV0-K02	1034156	Multi, 2048 EEprom, stranded cable

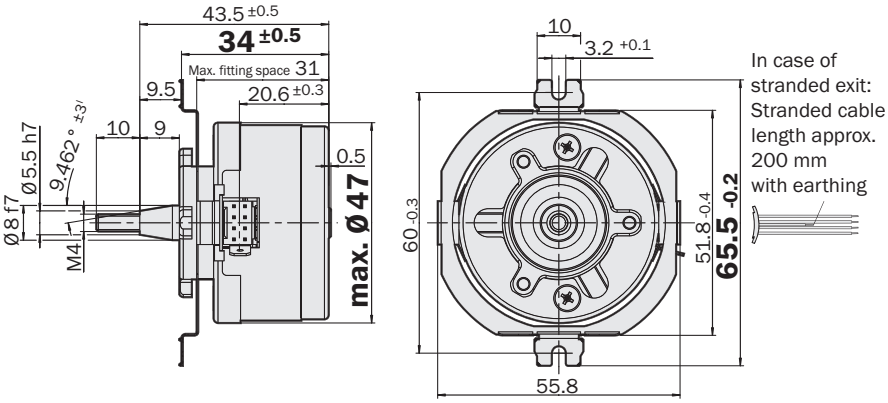
1,024 sine/ cosine periods

Motor Feedback Systems

- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

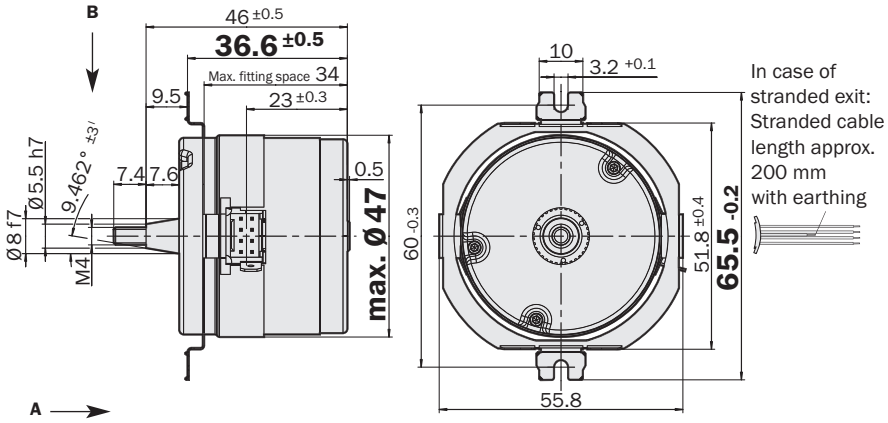


Dimensional drawing SRS50, spring mounting plate Ø 66



General tolerances to DIN ISO 2768-mk

Dimensional drawing SRM50, spring mounting plate Ø 66



General tolerances to DIN ISO 2768-mk

PIN and wire allocation

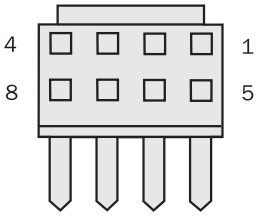
PIN	Signal	Colour of Wires	Explanation
1	U_s	red	Supply voltage 7 ... 12 V
2	GND	blue	Ground connection
3	REFSIN	brown	Process data channel
4	REFCOS	black	Process data channel
5	Data +	grey or yellow	RS-485-parameter channel
6	Data –	green or purple	RS-485-parameter channel
7	+ SIN	white	Process data channel
8	+ COS	pink	Process data channel

Caution: To ensure proper function, the screen connection strand (200 mm) MUST be connected. It is included in the supply.

U_s and GND are internally connected to the screen by capacitors of 2.2 nF.

Accessories

- Connection technology
- Fixing technology
- Programming tool



Direction of view "B"

Screening:
The encoder housing for the integrated encoder is connected to the motor, via the torque support. The connection space is thus screened via the motor housing such that, within the connection space, unscreened connection strands can be used.

Technical Data acc. to DIN 32878		Tapered Shaft SRS/SRM50	SRS	SRM
Number of sine/cosine periods per revolution		1,024	■	■
Dimensions		mm (see dimensional drawing)	■	■
Mass		0.2 kg	■	■
Inertial rotor moment		10 gcm^2	■	■
Type of code for the absolute value		Binary	■	■
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)		Increasing	■	■
Measurement step after generating arctan with 12 bit resolution		0.3 angular seconds	■	■
Total number of steps	Single SRS	32,768	■	
	Multi SRM	134,217,728 = 32,768 x 4,096		■
Error limits for the digital absolute value				
via RS 485		± 90 angular seconds	■	■
Error limits for evaluating the "1,024" signals,				
integral non-linearity		± 45 angular seconds	■	■
Non-linearity within a sine/cosine period				
differential non-linearity		± 7 angular seconds	■	■
Output frequency for sine/cosine signals		0 ... 200 kHz	■	■
Working speed up to which the absolute position can be reliably produced		6,000 min^{-1}	■	■
Max. operating speed		12,000 min^{-1}	■	■
Max. angular acceleration		0.2 x 10^6 rad/s^2	■	■
Operating torque		0.2 Ncm	■	■
Starting torque		0.4 Ncm	■	■
Permissible shaft movement				
static	radial/axial	± 0.5 mm/± 0.75 mm	■	■
dynamic	radial/axial	± 0.1 mm/± 0.2 mm	■	■
Angular motion, perpendicular to the rotational axis				
static		± 0.005 mm/mm	■	■
dynamic		± 0.0025 mm/mm	■	■
Life of ball bearings		3.6 x 10^9 rotations	■	■
Working temperature range		– 20 ... + 115 °C	■	■
Storage temperature range (without packaging)		– 40 ... + 125 °C	■	■
Permissible relative humidity [1]		90 %	■	■
Resistance				
to shocks [2]		100/10 g/ms	■	■
to vibration [3]		20/10 ... 2000 g/Hz	■	■
Protection to IEC 60529 [4]		IP 40	■	■
EMC [5]			■	■
Operating voltage range		7 ... 12 V	■	■
Recommended supply voltage		8 V	■	■
Max. operating current, no load		80 mA	■	■
Available memory area				
within EEPROM 512 [6]		128 bytes	■	■
within EEPROM 2048 [6]		1,792 bytes	■	■
Interface signals				
Process data channel = SIN, REFSIN, COS, REFCOS		Analogue, differential	■	■
Parameter channel = RS 485		Digital	■	■

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and 61000-6-3
The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. This is also where the GND (0 V) connection of the supply voltage is linked to earth.
Users must perform their own tests when other screen designs are used.

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information

SRS/SRM50; tapered shaft; spring mounting plate

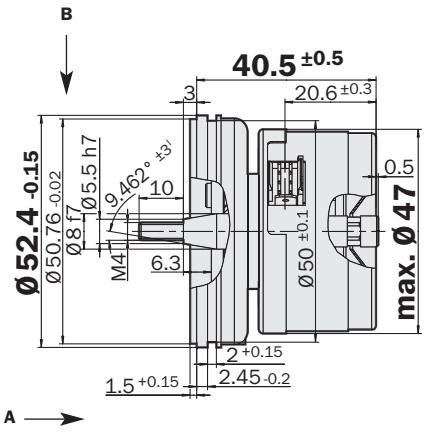
Type	Part no.	Description
SRS50-HFA0-K01	1034222	Single, 512 EEprom, connector
SRS50-HFV0-K01	1034185	Single, 512 EEprom, stranded cable
SRS50-HFA0-K02	1034182	Single, 2048 EEprom, connector
SRS50-HFV0-K02	1034186	Single, 2048 EEprom,stranded cable
SRM50-HFA0-K01	1034118	Multi, 512 EEprom, connector
SRM50-HFV0-K01	1034122	Multi, 512 EEprom, stranded cable
SRM50-HFA0-K02	1034119	Multi, 2048 EEprom, connector
SRM50-HFV0-K02	1034123	Multi, 2048 EEprom, stranded cable

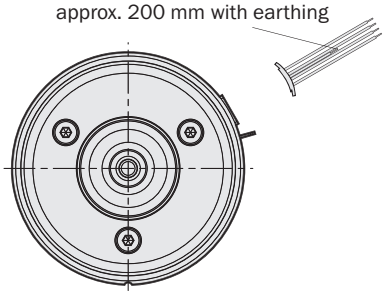
1,024 sine/ cosine periods

Motor Feedback Systems

- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

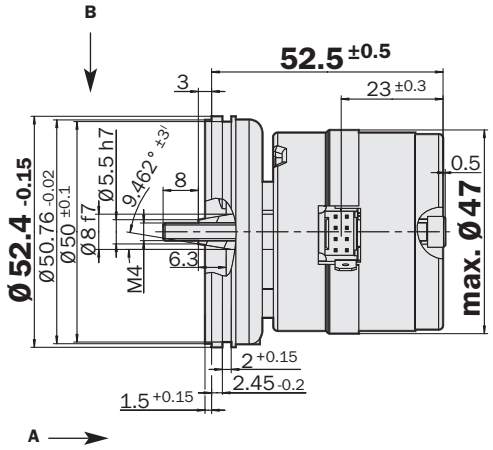
Dimensional drawing SRS50, resolver support Ø 52

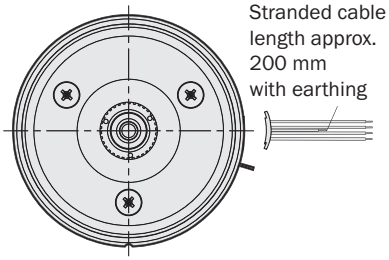




General tolerances to DIN ISO 2768-mk

Dimensional drawing SRM50, resolver support Ø 52





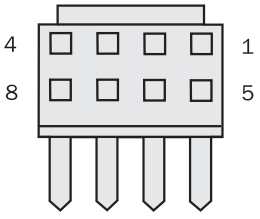
General tolerances to DIN ISO 2768-mk

PIN and wire allocation

PIN	Signal	Colour of Wires	Explanation
1	U_s	red	Supply voltage 7 ... 12 V
2	GND	blue	Ground connection
3	REFSIN	brown	Process data channel
4	REFCOS	black	Process data channel
5	Data +	grey or yellow	RS-485-parameter channel
6	Data –	green or purple	RS-485-parameter channel
7	+ SIN	white	Process data channel
8	+ COS	pink	Process data channel

Caution: To ensure proper function, the screen connection strand (200 mm) MUST be connected. It is included in the supply.

U_s and GND are internally connected to the screen by capacitors of 2.2 nF.



Direction of view "B"

Accessories

- Connection technology
- Fixing technology
- Programming tool

Technical Data acc. to DIN 32878		Tapered Shaft SRS/SRM50	SRS	SRM
Number of sine/cosine periods per revolution		1,024		
Dimensions		mm (see dimensional drawing)		
Mass		0.2 kg		
Inertial rotor moment		10 gcm^2		
Type of code for the absolute value		Binary		
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)		Increasing		
Measurement step after generating arctan with 12 bit resolution		0.3 angular seconds		
Total number of steps	Single SRS	32,768		
	Multi SRM	134,217,728 = 32,768 x 4,096		
Error limits for the digital absolute value				
via RS 485		± 90 angular seconds		
Error limits for evaluating the "1,024" signals,				
integral non-linearity		± 45 angular seconds		
Non-linearity within a sine/cosine period				
differential non-linearity		± 7 angular seconds		
Output frequency for sine/cosine signals		0 ... 200 kHz		
Working speed up to which the absolute position can be reliably produced		6,000 min^{-1}		
Max. operating speed		12,000 min^{-1}		
Max. angular acceleration		0.2 x 10^6 rad/s^2		
Operating torque		0.2 Ncm		
Starting torque		0.4 Ncm		
Permissible shaft movement				
static	radial/axial	± 0.25 mm/± 0.75 mm		
dynamic	radial/axial	± 0.1 mm/± 0.2 mm		
Angular motion, perpendicular to the rotational axis				
static		± 0.005 mm/mm		
dynamic		± 0.0025 mm/mm		
Life of ball bearings		3.6 x 10^9 rotations		
Working temperature range		– 20 ... + 115 °C		
Storage temperature range (without packaging)		– 40 ... + 125 °C		
Permissible relative humidity [1]		90 %		
Resistance				
to shocks [2]		100/10 g/ms		
to vibration [3]		20/10 ... 2000 g/Hz		
Protection to IEC 60529 [4]		IP 40		
EMC [5]				
Operating voltage range		7 ... 12 V		
Recommended supply voltage		8 V		
Max. operating current, no load		80 mA		
Available memory area				
within EEPROM 512 [6]		128 bytes		
within EEPROM 2048 [6]		1,792 bytes		
Interface signals				
Process data channel = SIN, REFSIN, COS, REFCOS		Analogue, differential		
Parameter channel = RS 485		Digital		

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and 61000-6-3
The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. This is also where the GND (0 V) connection of the supply voltage is linked to earth.
Users must perform their own tests when other screen designs are used.

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information

SRS/SRM50; tapered shaft; resolver support

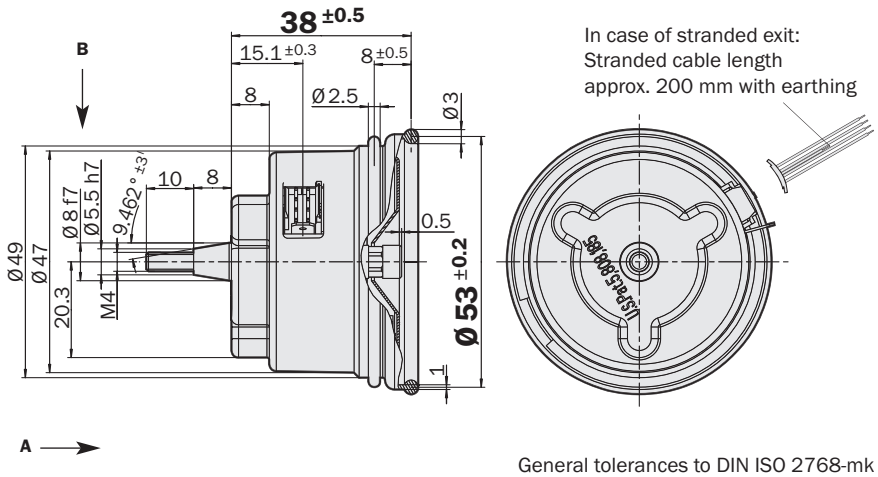
Type	Part no.	Description
SRS50-HGA0-K01	1034187	Single, 512 EEprom, connector
SRS50-HGV0-K01	1034189	Single, 512 EEprom, stranded cable
SRS50-HGA0-K02	1034188	Single, 2048 EEprom, connector
SRS50-HGV0-K02	1034190	Single, 2048 EEprom,stranded cable
SRM50-HGA0-K01	1034124	Multi, 512 EEprom, connector
SRM50-HGV0-K01	1034127	Multi, 512 EEprom, stranded cable
SRM50-HGA0-K02	1034125	Multi, 2048 EEprom, connector
SRM50-HGV0-K02	1034128	Multi, 2048 EEprom, stranded cable

1,024 sine/ cosine periods

Motor Feedback Systems

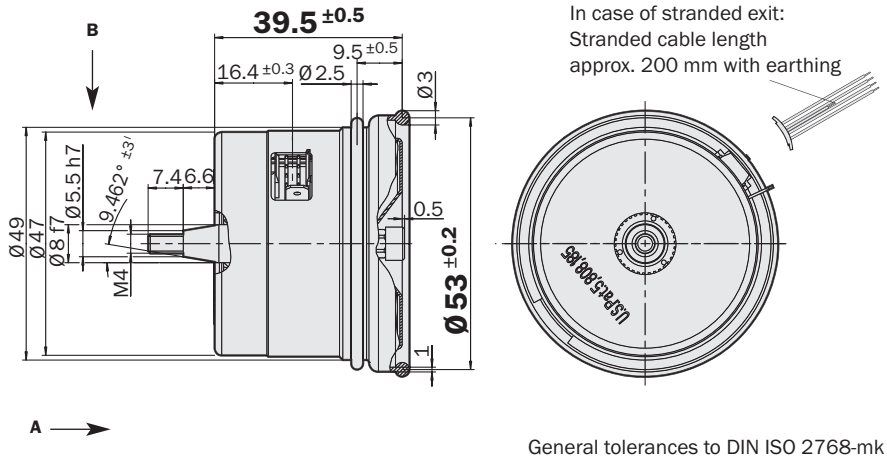
- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

Dimensional drawing SRS50, rubber support Ø 50



General tolerances to DIN ISO 2768-mk

Dimensional drawing SRM50, rubber support Ø 50



General tolerances to DIN ISO 2768-mk

PIN and wire allocation

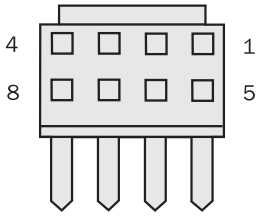
PIN	Signal	Colour of Wires	Explanation
1	U_s	red	Supply voltage 7 ... 12 V
2	GND	blue	Ground connection
3	REFSIN	brown	Process data channel
4	REFCOS	black	Process data channel
5	Data +	grey or yellow	RS-485-parameter channel
6	Data –	green or purple	RS-485-parameter channel
7	+ SIN	white	Process data channel
8	+ COS	pink	Process data channel

Caution: To ensure proper function, the screen connection strand (200 mm) MUST be connected. It is included in the supply.

U_s and GND are internally connected to the screen by capacitors of 2.2 nF.

Accessories

- Connection technology
- Fixing technology
- Programming tool



Direction of view "B"

Technical Data acc. to DIN 32878		Tapered Shaft SRS/SRM50	SRS	SRM
Number of sine/cosine periods per revolution		1,024		
Dimensions		mm (see dimensional drawing)		
Mass		0.2 kg		
Inertial rotor moment		10 gcm^2		
Type of code for the absolute value		Binary		
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)		Increasing		
Measurement step after generating arctan with 12 bit resolution		0.3 angular seconds		
Total number of steps	Single SRS	32,768		
	Multi SRM	134,217,728 = 32,768 x 4,096		
Error limits for the digital absolute value				
via RS 485		± 90 angular seconds		
Error limits for evaluating the "1,024" signals,				
integral non-linearity		± 45 angular seconds		
Non-linearity within a sine/cosine period				
differential non-linearity		± 7 angular seconds		
Output frequency for sine/cosine signals		0 ... 200 kHz		
Working speed up to which the absolute position can be reliably produced		6,000 min^{-1}		
Max. operating speed		12,000 min^{-1}		
Max. angular acceleration		0.2 x 10^6 rad/s^2		
Operating torque		0.2 Ncm		
Starting torque		0.4 Ncm		
Permissible shaft movement				
static	radial/axial	± 0.5 mm/± 0.75 mm		
dynamic	radial/axial	± 0.1 mm/± 0.2 mm		
Angular motion, perpendicular to the rotational axis				
static		± 0.005 mm/mm		
dynamic		± 0.0025 mm/mm		
Life of ball bearings		3.6 x 10^9 rotations		
Working temperature range		– 20 ... + 115 °C		
Storage temperature range (without packaging)		– 40 ... + 125 °C		
Permissible relative humidity [1]		90 %		
Resistance				
to shocks [2]		100/10 g/ms		
to vibration [3]		20/10 ... 2000 g/Hz		
Protection to IEC 60529 [4]		IP 40		
EMC [5]				
Operating voltage range		7 ... 12 V		
Recommended supply voltage		8 V		
Max. operating current, no load		80 mA		
Available memory area				
within EEPROM 512 [6]		128 bytes		
within EEPROM 2048 [6]		1,792 bytes		
Interface signals				
Process data channel = SIN, REFSIN, COS, REFCOS		Analogue, differential		
Parameter channel = RS 485		Digital		

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and 61000-6-3
The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. This is also where the GND (0 V) connection of the supply voltage is linked to earth.
Users must perform their own tests when other screen designs are used.

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information

SRS/SRM50; tapered shaft; rubber support Ø 50 mm

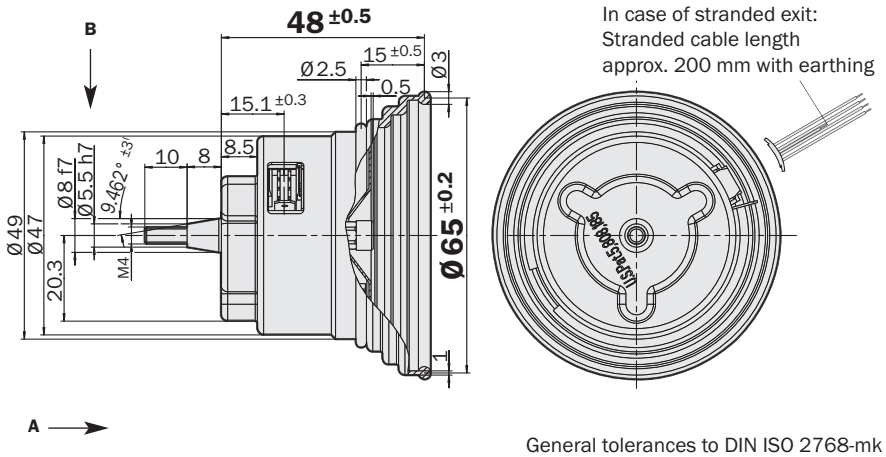
Type	Part no.	Description
SRS50-HEA0-K01	1034176	Single, 512 EEprom, connector
SRS50-HEV0-K01	1034178	Single, 512 EEprom, stranded cable
SRS50-HEA0-K02	1034177	Single, 2048 EEprom, connector
SRS50-HEV0-K02	1034179	Single, 2048 EEprom,stranded cable
SRM50-HEA0-K01	1034111	Multi, 512 EEprom, connector
SRM50-HEV0-K01	1034114	Multi, 512 EEprom, stranded cable
SRM50-HEA0-K02	1034112	Multi, 2048 EEprom, connector
SRM50-HEV0-K02	1034115	Multi, 2048 EEprom, stranded cable

1,024 sine/ cosine periods

Motor Feedback Systems

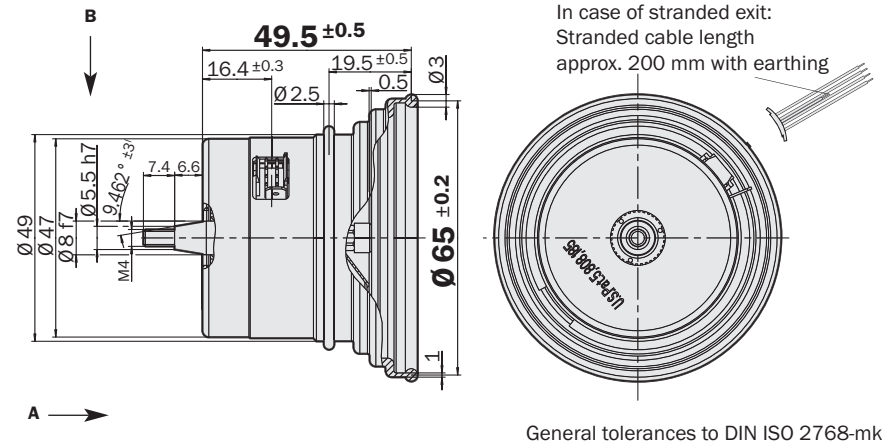
- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

Dimensional drawing SRS60, rubber support Ø 60



General tolerances to DIN ISO 2768-mk

Dimensional drawing SRM60, rubber support Ø 60



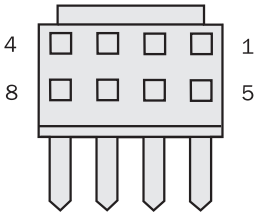
General tolerances to DIN ISO 2768-mk

PIN and wire allocation

PIN	Signal	Colour of Wires	Explanation
1	U_S	red	Supply voltage 7 ... 12 V
2	GND	blue	Ground connection
3	REFSIN	brown	Process data channel
4	REFCOS	black	Process data channel
5	Data +	grey or yellow	RS-485-parameter channel
6	Data –	green or purple	RS-485-parameter channel
7	+ SIN	white	Process data channel
8	+ COS	pink	Process data channel

Caution: To ensure proper function, the screen connection strand (200 mm) MUST be connected. It is included in the supply.

U_S and GND are internally connected to the screen by capacitors of 2.2 nF.



Direction of view "B"

Accessories

- Connection technology
- Fixing technology
- Programming tool

Technical Data acc. to DIN 32878		Tapered Shaft SRS/SRM60	SRS	SRM
Number of sine/cosine periods per revolution		1,024	■	■
Dimensions		mm (see dimensional drawing)	■	■
Mass		0.2 kg	■	■
Inertial rotor moment		10 gcm²	■	■
Type of code for the absolute value		Binary	■	■
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)		Increasing	■	■
Measurement step after generating arctan with 12 bit resolution		0.3 angular seconds	■	■
Total number of steps	Single SRS	32,768	■	
	Multi SRM	134,217,728 = 32,768 x 4,096		■
Error limits for the digital absolute value				
via RS 485		± 90 angular seconds	■	■
Error limits for evaluating the "1,024" signals,				
integral non-linearity		± 45 angular seconds	■	■
Non-linearity within a sine/cosine period				
differential non-linearity		± 7 angular seconds	■	■
Output frequency for sine/cosine signals		0 ... 200 kHz	■	■
Working speed up to which the absolute position can be reliably produced		6,000 min^{-1}	■	■
Max. operating speed		12,000 min^{-1}	■	■
Max. angular acceleration		0.2 x 10^6 rad/s^2	■	■
Operating torque		0.2 Ncm	■	■
Starting torque		0.4 Ncm	■	■
Permissible shaft movement				
static	radial/axial	± 0.5 mm/± 0.75 mm	■	■
dynamic	radial/axial	± 0.1 mm/± 0.2 mm	■	■
Angular motion, perpendicular to the rotational axis				
static		± 0.005 mm/mm	■	■
dynamic		± 0.0025 mm/mm	■	■
Life of ball bearings		3.6 x 10^9 rotations	■	■
Working temperature range		– 20 ... + 115 °C	■	■
Storage temperature range (without packaging)		– 40 ... + 125 °C	■	■
Permissible relative humidity [1]		90 %	■	■
Resistance				
to shocks [2]		100/10 g/ms	■	■
to vibration [3]		20/10 ... 2000 g/Hz	■	■
Protection to IEC 60529 [4]		IP 40	■	■
EMC [5]			■	■
Operating voltage range		7 ... 12 V	■	■
Recommended supply voltage		8 V	■	■
Max. operating current, no load		80 mA	■	■
Available memory area				
within EEPROM 512 [6]		128 bytes	■	■
within EEPROM 2048 [6]		1,792 bytes	■	■
Interface signals				
Process data channel = SIN, REFSIN, COS, REFCOS		Analogue, differential	■	■
Parameter channel = RS 485		Digital	■	■

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and 61000-6-3
The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. This is also where the GND (0 V) connection of the supply voltage is linked to earth.
Users must perform their own tests when other screen designs are used.

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information

SRS/SRM60; tapered shaft; rubber support Ø 60 mm

Type	Part no.	Description
SRS60-HEA0-K01	1034217	Single, 512 EEprom, connector
SRS60-HEV0-K01	1034220	Single, 512 EEprom, stranded cable
SRS60-HEA0-K02	1034218	Single, 2048 EEprom, connector
SRS60-HEV0-K02	1034221	Single, 2048 EEprom,stranded cable
SRM60-HEA0-K01	1034157	Multi, 512 EEprom, connector
SRM60-HEV0-K01	1034160	Multi, 512 EEprom, stranded cable
SRM60-HEA0-K02	1034158	Multi, 2048 EEprom, connector
SRM60-HEV0-K02	1034161	Multi, 2048 EEprom, stranded cable

1,024 sine/ cosine periods

Motor Feedback Systems

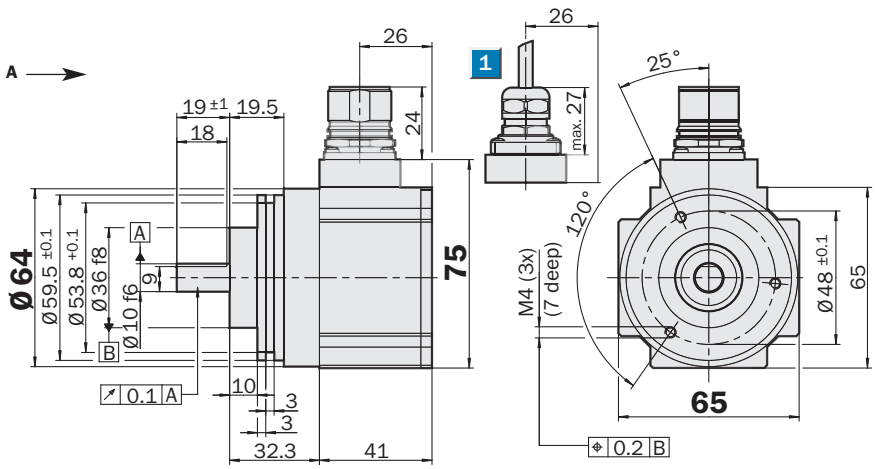
- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

CE

Accessories

- Connection technology
- Fixing technology
- Programming tool

Dimensional drawing SRS50 standalone, rectangular housing, face mount flange

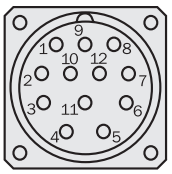


1 R = min. bending radius 40 mm

General tolerances to DIN ISO 2768-mk

PIN and wire allocation

PIN	Signal	Colour of Wires	Explanation
1	REFCOS	black	Process data channel
2	Data +	grey or yellow	RS-485-parameter channel
3	N. C.	–	N. C.
4	N. C.	–	N. C.
5	SIN	white	Process data channel
6	REFSIN	brown	Process data channel
7	Data –	green or purple	RS-485-parameter channel
8	COS	pink	Process data channel
9	N. C.	–	N. C.
10	GND	blue	Ground connection
11	N. C.	–	N. C.
12	U_s	red	7 ... 12 V Supply voltage



View of the plug-in face

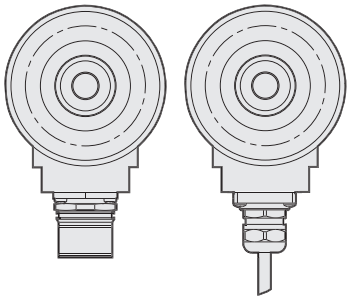
Screen connection on connector housing

N. C. = Not connected

U_S and GND are internally connected to the screen by capacitors of 2.2 nF.

Type of connection

M23 Connector radial | Cable radial



Technical Data acc. to DIN 32878	Standalone, Face Mount Fl. SRS/SRM50	SRS	SRM
Number of sine/cosine periods per revolution	1,024		
Dimensions	mm (see dimensional drawing)		
Mass	0.550 kg		
Inertial rotor moment	25 gcm^2		
Type of code for the absolute value	Binary		
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)	Increasing		
Measurement step after generating arctan with 12 bit resolution	0.3 angular seconds		
Total number of steps Single SRS	32,768		
Multi SRM	134,217,728 = 32,768 x 4,096		
Error limits for the digital absolute value via RS 485	± 90 angular seconds		
Error limits for evaluating the "1,024" signals, integral non-linearity	± 45 angular seconds		
Non-linearity within a sine/cosine period differential non-linearity	± 7 angular seconds		
Output frequency for sine/cosine signals	0 ... 200 kHz		
Working speed up to which the absolute position can be reliably produced	6,000 min^{-1}		
Max. operating speed	6,000 min^{-1}		
Max. angular acceleration	0.2 x 10^6 rad/s^2		
Operating torque with shaft sealing ring	1 Ncm		
Starting torque with shaft sealing ring	1,5 Ncm		
Load capacity of shaft radial/axial	40 N/20 N		
Life of ball bearings	3.6 x 10^9 rotations		
Working temperature range	– 20 ... + 85 °C		
Storage temperature range	– 30 ... + 90 °C		
Permissible relative humidity [1]	90 %		
Resistance to shocks [2]	30/11 g/ms		
to vibration [3]	20/10 ... 2000 g/Hz		
Protection to IEC 60529 [4]	IP 65		
EMC [5]			
Operating voltage range	7 ... 12 V		
Recommended supply voltage	8 V		
Max. operating current, no load	80 mA		
Available memory area within EEPROM 512 [6]	128 bytes		
within EEPROM 2048 [6]	1,792 bytes		
Interface signals Process data channel = SIN, REFSIN, COS, REFCOS	Analogue, differential		
Parameter channel = RS 485	Digital		

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and 61000-6-3

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information

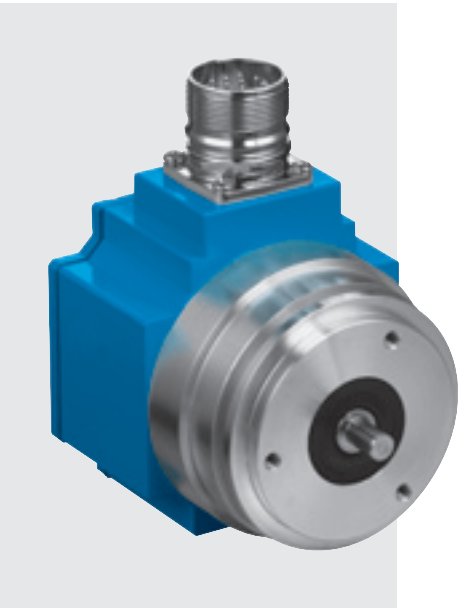
SRS/SRM50 standalone; solid shaft Ø 10 mm; clamping flange

Type	Part no.	Description
SRS50-HWA0-K01	1034192	Single, 512 EEprom, connector M23
SRS50-HWV0-K01	1034194	Single, 512 EEprom, cable 1.5 m
SRS50-HWA0-K02	1034193	Single, 2048 EEprom, connector M23
SRS50-HWV0-K02	1034195	Single, 2048 EEprom, cable 1.5 m
SRM50-HWA0-K01	1034130	Multi, 512 EEprom, connector M23
SRM50-HWV0-K01	1034133	Multi, 512 EEprom, cable 1.5 m
SRM50-HWA0-K02	1034131	Multi, 2048 EEprom, connector M23
SRM50-HWV0-K02	1034134	Multi, 2048 EEprom, cable 1.5 m

1,024 sine/ cosine periods

Motor Feedback Systems

- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

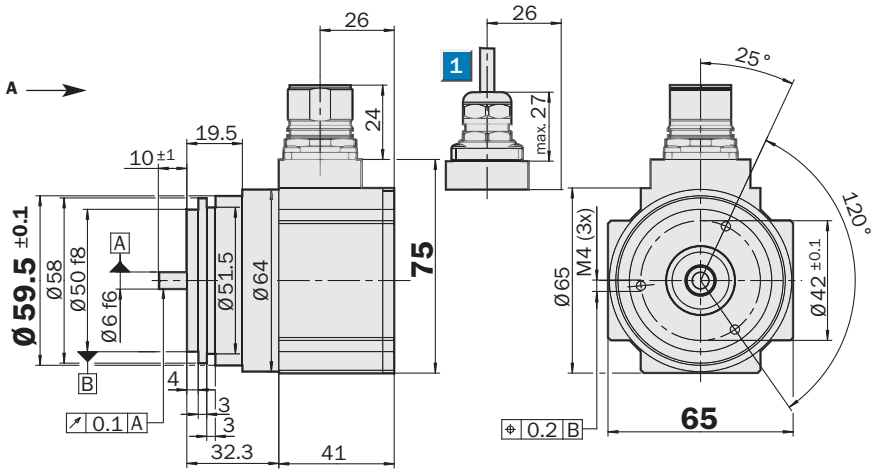


CE

Accessories

- Connection technology
- Fixing technology
- Programming tool

Dimensional drawing SRS50 standalone, rectangular housing, servo flange

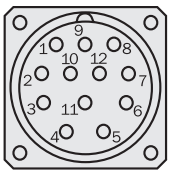


1 R = min. bending radius 40 mm

General tolerances to DIN ISO 2768-mk

PIN and wire allocation

PIN	Signal	Colour of Wires	Explanation
1	REFCOS	black	Process data channel
2	Data +	grey or yellow	RS-485-parameter channel
3	N. C.	–	N. C.
4	N. C.	–	N. C.
5	SIN	white	Process data channel
6	REFSIN	brown	Process data channel
7	Data –	green or purple	RS-485-parameter channel
8	COS	pink	Process data channel
9	N. C.	–	N. C.
10	GND	blue	Ground connection
11	N. C.	–	N. C.
12	U_s	red	7 ... 12 V Supply voltage



View of the plug-in face

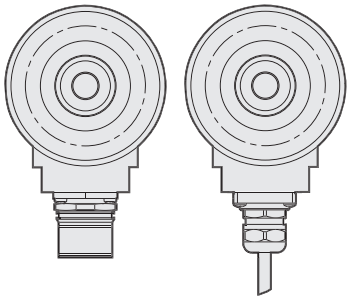
Screen connection on connector housing

N. C. = Not connected

U_s and GND are internally connected to the screen by capacitors of 2.2 nF.

Type of connection

M23 Connector radial | Cable radial



Technical Data acc. to DIN 32878	Standalone, Servo Fl. SRS/SRM50	SRS	SRM
Number of sine/cosine periods per revolution	1,024		
Dimensions	mm (see dimensional drawing)		
Mass	0.550 kg		
Inertial rotor moment	25 gcm^2		
Type of code for the absolute value	Binary		
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)	Increasing		
Measurement step after generating arctan with 12 bit resolution	0.3 angular seconds		
Total number of steps Single SRS	32,768		
Multi SRM	134,217,728 = 32,768 x 4,096		
Error limits for the digital absolute value			
via RS 485	± 90 angular seconds		
Error limits for evaluating the "1,024" signals,			
integral non-linearity	± 45 angular seconds		
Non-linearity within a sine/cosine period			
differential non-linearity	± 7 angular seconds		
Output frequency for sine/cosine signals	0 ... 200 kHz		
Working speed up to which the absolute position can be reliably produced	6,000 min^{-1}		
Max. operating speed	6,000 min^{-1}		
Max. angular acceleration	0.2 x 10^6 rad/s^2		
Operating torque with shaft sealing ring	1 Ncm		
Starting torque with shaft sealing ring	1.5 Ncm		
Load capacity of shaft radial/axial	40 N/20 N		
Life of ball bearings	3.6 x 10^9 rotations		
Working temperature range	– 20 ... + 85 °C		
Storage temperature range	– 30 ... + 90 °C		
Permissible relative humidity [1]	90 %		
Resistance			
to shocks [2]	30/11 g/ms		
to vibration [3]	20/10 ... 2000 g/Hz		
Protection to IEC 60529 [4]	IP 65		
EMC [5]			
Operating voltage range	7 ... 12 V		
Recommended supply voltage	8 V		
Max. operating current, no load	80 mA		
Available memory area			
within EEPROM 512 [6]	128 bytes		
within EEPROM 2048 [6]	1,792 bytes		
Interface signals			
Process data channel = SIN, REFSIN, COS, REFCOS	Analogue, differential		
Parameter channel = RS 485	Digital		

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and 61000-6-3

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information

SRS/SRM50 standalone; solid shaft Ø 6 mm; servo flange

Type	Part no.	Description
SRS50-HXA0-K01	1034197	Single, 512 EEprom, connector M23
SRS50-HXV0-K01	1034199	Single, 512 EEprom, cable 1.5 m
SRS50-HXA0-K02	1034198	Single, 2048 EEprom, connector M23
SRS50-HXV0-K02	1034200	Single, 2048 EEprom, cable 1.5 m
SRM50-HXA0-K01	1034136	Multi, 512 EEprom, connector M23
SRM50-HXV0-K01	1034138	Multi, 512 EEprom, cable 1.5 m
SRM50-HXA0-K02	1034137	Multi, 2048 EEprom, connector M23
SRM50-HXV0-K02	1034139	Multi, 2048 EEprom, cable 1.5 m

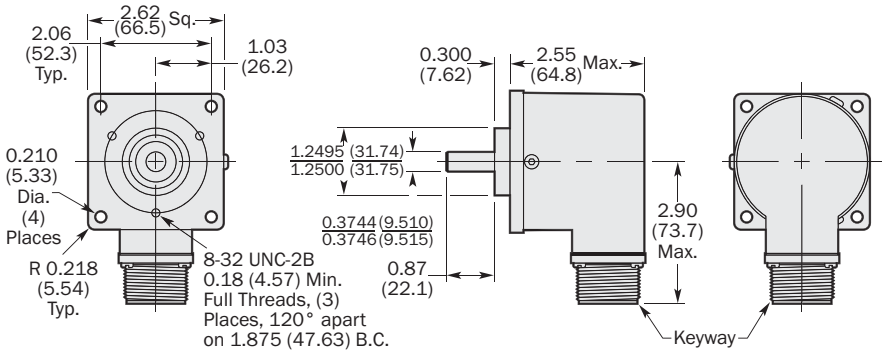
1,024 sine/ cosine periods

Motor Feedback Systems

- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

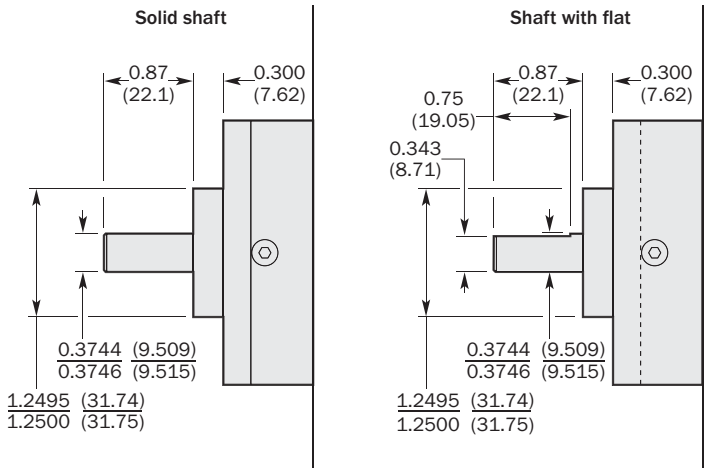
CE

Dimensional drawing SRS/M50 Standalone, square flange mount



All dimensions in inch, dimensions within brackets in mm.

Dimensional Drawing Shaft Options



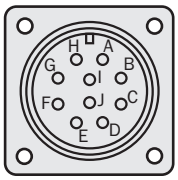
All dimensions in inch, dimensions within brackets in mm.

PIN and wire allocation

PIN	Wire colour	Signal	Explanation
A	Red	+ U_S	7 ... 12 V Supply voltage
B	Blue	GND	Ground connection
C	Brown	Ref SIN	Process data channel
D	Black	Ref COS	Process data channel
E	Grey	Data +	RS 485 parameter channel
F	Green	Data –	RS 485 parameter channel
G	White	SIN	Process data channel
H	Pink	COS	Process data channel
I	N. C.		
J	Case	Case	

Accessories

- Connection technology
- Fixing technology
- Programming tool



Pin side view MS/10

Screen connection on connector housing

N. C. = Not connected

U_S and GND are internally connected to the screen by capacitors of 2.2 nF.

Technical Data acc. to DIN 32878 Standalone, square mount fl. SRS/SRM50		SRS	SRM
Number of sine/cosine periods per revolution	1,024		
Dimensions	mm (see dimensional drawing)		
Mass	0.482 kg		
Inertial rotor moment	28.8 gcm^2		
Type of code for the absolute value	Binary		
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)	Increasing		
Measurement step after generating arctan with 12 bit resolution	0.3 angular seconds		
Total number of steps Single SRS	32,768		
Multi SRM	134,217,728 = 32,768 x 4,096		
Error limits for the digital absolute value			
via RS 485	± 90 angular seconds		
Error limits for evaluating the "1,024" signals,			
integral non-linearity	± 45 angular seconds		
Non-linearity within a sine/cosine period			
differential non-linearity	± 7 angular seconds		
Output frequency for sine/cosine signals	0 ... 200 kHz		
Working speed up to which the absolute position can be reliably produced	6,000 min^{-1}		
Max. operating speed without shaft seal	6,000 min^{-1}		
Max. operating speed with shaft seal	3,000 min^{-1}		
Max. angular acceleration	5 x 10^5 rad/s^2		
Max. Operating torque	1 Ncm		
Starting torque with shaft sealing ring	1.5 Ncm		
Load capacity of shaft radial/axial	155 N/88 N		
Life of ball bearings	3.6 x 10^9 rotations		
Working temperature range	– 20 ... + 85 °C		
Storage temperature range	– 30 ... + 90 °C		
Permissible relative humidity [1]	90 %		
Resistance			
to shocks [2]	100/10 g/ms		
to vibration [3]	20/10 ... 2000 g/Hz		
Protection to IEC 60529 [4]	IP 66		
EMC [5]			
Operating voltage range	7 ... 12 V		
Recommended supply voltage	8 V		
Max. operating current, no load	80 mA		
Available memory area			
within EEPROM 512 [6]	128 bytes		
Interface signals			
Process data channel = SIN, REFSIN, COS, REFCOS	Analogue, differential		
Parameter channel = RS 485	Digital		

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and 61000-6-3

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information		
SRS/SRM50 standalone; solid shaft Ø 3/8"; square flange 2.5"		
Type	**Part no.**	**Description**
SRS50-HTA0-K01	1035765	Single, solid shaft, connector MS/10
SRS50-HUA0-K01	1035766	Single, solid shaft with flat, connector MS/10
SRM50-HTA0-K01	1035762	Multi, solid shaft, connector MS/10
SRM50-HUA0-K01	1035763	Multi, solid shaft with flat, connector MS/10

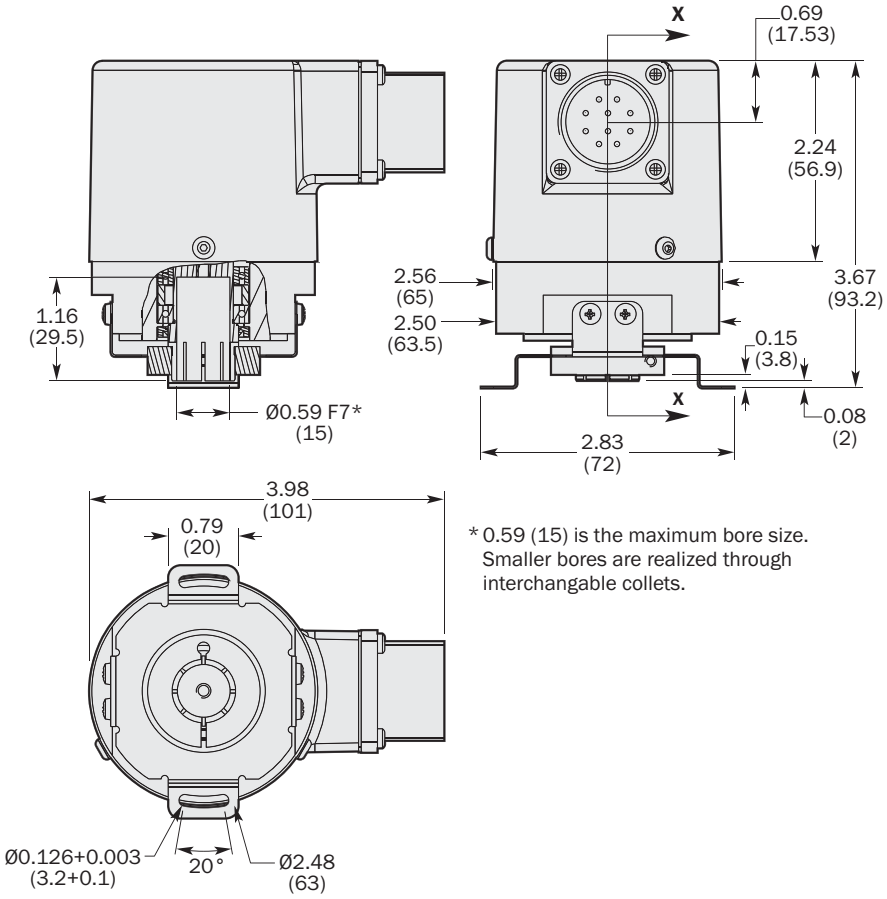
1,024 sine/ cosine periods

Motor Feedback Systems

- 1,024 sine/cosine periods per revolution
- Absolute position with a resolution of 32,768 steps per revolution
- 4,096 revolutions can be measured (Multiturn)
- Programming of the positional value
- Electronic type label

CE

Dimensional drawing SRS/M50 Standalone, blind hollow shaft

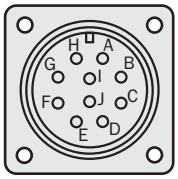


* 0.59 (15) is the maximum bore size. Smaller bores are realized through interchangable collets.

All dimensions in inch, dimensions within brackets in mm.

Accessories

- Connection technology
- Fixing technology
- Programming tool



Pin side view
MS/10

Screen connection on connector housing

N. C. = Not connected

U_S and GND are internally connected to the screen by capacitors of 2.2 nF.

Technical Data acc. to DIN 32878 Standalone, blind hollow shaft, SRS/SRM50		SRS	SRM
Number of sine/cosine periods per revolution	1,024		
Dimensions	mm (see dimensional drawing)		
Mass	0.482 kg		
Inertial rotor moment	50 gcm² max.		
Type of code for the absolute value	Binary		
Code sequence for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)	Increasing		
Measurement step after generating arctan with 12 bit resolution	0.3 angular seconds		
Total number of steps Single SRS	32,768		
Multi SRM	134,217,728 = 32,768 x 4,096		
Error limits for the digital absolute value			
via RS 485	± 90 angular seconds		
Error limits for evaluating the "1,024" signals,			
integral non-linearity	± 45 angular seconds		
Non-linearity within a sine/cosine period			
differential non-linearity	± 7 angular seconds		
Output frequency for sine/cosine signals	0 ... 200 kHz		
Max. operating speed with shaft seal	3,000 min^{-1}		
Max. angular acceleration	5 x 10^5 rad/s^2		
Max. Operating torque	1.8 Ncm		
Starting torque with shaft sealing ring	2.6 Ncm		
Allowable runout			
static/dynamic radial movement	± 0.3/± 0.1 mm		
static/dynamic axial movement	± 0.5/± 0.2 mm		
Life of ball bearings	3.6 x 10^9 rotations		
Working temperature range	– 20 ... + 85 °C		
Storage temperature range	– 30 ... + 90 °C		
Permissible relative humidity [1]	90 %		
Resistance			
to shocks [2]	100/10 g/ms		
to vibration [3]	20/10 ... 2000 g/Hz		
Protection to IEC 60529 [4]	IP 66		
EMC [5]			
Operating voltage range	7 ... 12 V		
Recommended supply voltage	8 V		
Max. operating current, no load	80 mA		
Available memory area			
within EEPROM 512 [6]	128 bytes		
Interface signals			
Process data channel = SIN, REFSIN, COS, REFCOS	Analogue, differential		
Parameter channel = RS 485	Digital		

[1] Condensation not permissible

[2] To EN 60068-2-27

[3] To EN 60068-2-6

[4] With mating connector inserted

[5] To EN 61000-6-2 and DIN 61000-6-3

[6] If applying the elctronic type label, in connection with numeric controllers, attention should be paid to Patent EP 425 912 B 2; Application of the electronic type label in connection with speed regulation is exempt.

Ordering information

SRS/SRM50 standalone; blind hollow shaft Ø 15 mm

Type	Part no.	Description
SRS50-HPA0-K01	1035764	Single, blind hollow shaft, connector MS/10
SRM50-HPA0-K01	1035761	Multi, blind hollow shaft, connector MS/10

Collets

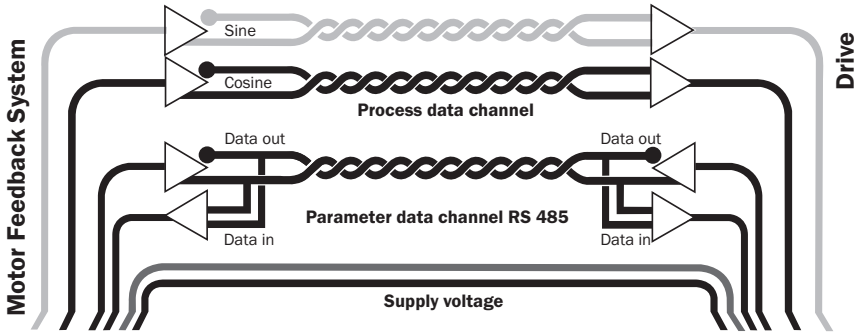
Type	Part no.	Size
SPZ-006-AD-A	2029174	6 mm
SPZ-1E4-AD-A	2029175	1/4"
SPZ-008-AD-A	2029176	8 mm
SPZ-3E8-AD-A	2029177	3/8"
SPZ-010-AD-A	2029178	10 mm
SPZ-012-AD-A	2029179	12 mm
SPZ-1E2-AD-A	2029180	1/2"

Attention: Please order the Collet with required diameter separately

HIPERFACE® by SICK|STEGMANN

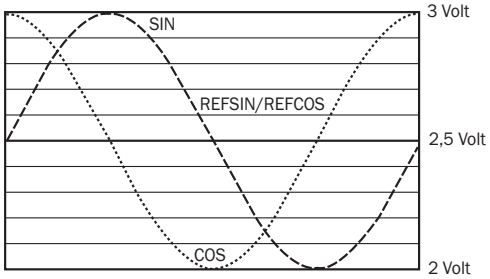
Electrical interface

- Safe data transmission
- High information content
- Electronic type label
- Only 8 leads
- Bus-enabled parameter channel
- Process data channel in real time



Signal specification of the process data channel

Signal diagram for clockwise rotation of the shaft, looking in direction "A"



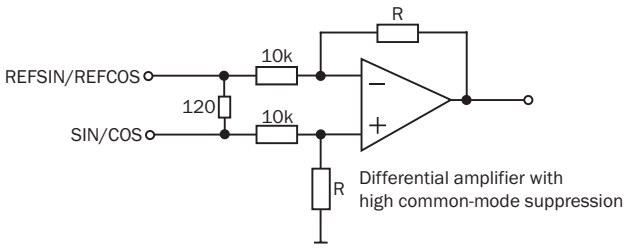
1 periode = 360° : 1024

Access to the process data used for speed control, i.e. to the sine and cosine signals, is practically always "online". When the supply voltage is applied, the speed controller has access to this information at any time.

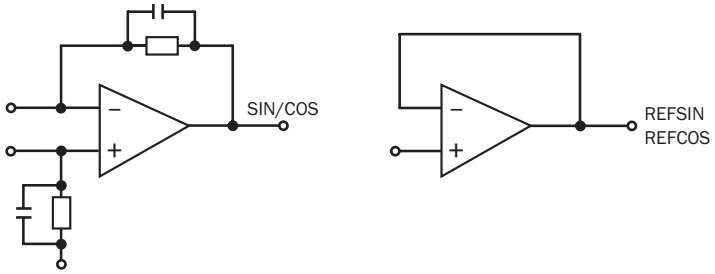
Sophisticated technology guarantees stable amplitudes of the analogue signals across all specified environmental conditions, with a maximum variation of only 20%.

Characteristics applicable to all permissible environmental conditions signal	
Signal	**Values/Units**
Signal peak, peak V_{ss} of SIN, COS	0.9 ... 1.1 V
Signal offset REFSIN, REFCOS	2.2 ... 2.8 V

Recommended receiver circuit for sine and cosine signals



The output circuit of the process data channel within the SinCos encoder



HIPERFACE® by SICK|STEGMANN

Type-specific settings	SRS	SRM
Type ID (command 52h)	22h	27h
Free EEPROM [bytes]	128/1,792	128/1,792
Address	40h	40h
Mode_485	E4h	E4h
Codes 0 ... 3	55h	55h
Counter	0	0

Overview of commands supported			SRS	SRM
Command byte	Function	Code 0 [1]	Comments	Comments
42h	Read position			
43h	Set position	•		
44h	Read analogue value		Channel number 48h	Channel number 48h
			Temperature [°C]	Temperature [°C]
46h	Read counter			
47h	Increase counter			
49h	Reset counter	•		
4Ah	Read data			
4Bh	Save data			
4Ch	Determine status of a data field			
4Dh	Create data field			
4Eh	Determine available memory area			
4Fh	Change access code			
50h	Read encoder status			
52h	Read out name plate		Encoder type = 22h	Encoder type = 27h
53h	Encoder reset			
55h	Allocate encoder address	•		
56h	Read serial number and program version			
57h	Configure serial interface	•		

[1] The commands thus labelled include the parameter "Code 0". Code 0 is a byte inserted into the protocol, for additional safeguarding of vital system parameters against accidental overwriting. When shipped, "Code 0" = 55h

Overview of status messages				
Error type	Status code	Description	SRS	SRM
	00h	The encoder has recognised no error	•	•
Initialisation	01h	Faulty compensating data	•	•
	02h	Faulty internal angular offset	•	•
	03h	Data field partitioning table damaged	•	•
	04h	Analogue limit values not available	•	•
	05h	Internal I²C bus not operational	•	•
	06h	Internal checksum error	•	•
Protocol	07h	Encoder reset occurred as a result of program monitoring	•	•
	09h	Parity error	•	•
	0Ah	Checksum of the data transmitted is incorrect	•	•
	0Bh	Unknown command code	•	•
	0Ch	Number of data transmitted is incorrect	•	•
	0Dh	Command argument transmitted is not allowed	•	•
Data	0Eh	The selected data field must not be written to	•	•
	0Fh	Incorrect access code	•	•
	10h	Size of data field stated cannot be changed	•	•
	11h	Word address stated, is outside data field	•	•
	12h	Access to non-existent data field	•	•
Position	01h	Analogue signals outside specification	•	•
	1Fh	Speed too high, no position formation possible	•	•
	20h	Singleturn position unreliable	•	•
	21h	Positional error Multiturn		•
	22h	Positional error Multiturn		•
	23h	Positional error Multiturn		•
Other	1Ch	Monitoring the value of the analogue signals (process data)		
	1Dh	Transmitter current critical (dirt, transmitter breakage)	•	•
	1Eh	Encoder temperature critical	•	•
	08h	Counter overflow	•	•

Dimensional drawings and ordering information

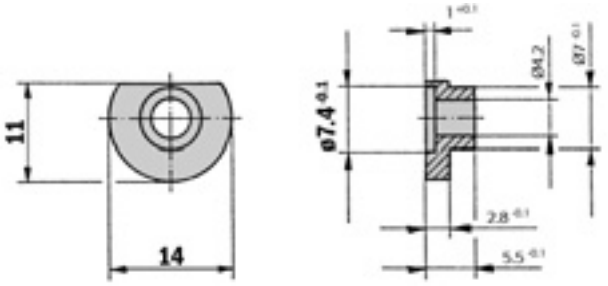
Accessories for SRS/M 50 Standalone

Programming tool for HIPERFACE®-devices

Type	Part no.	Motor Feedback System
PGT-03-S	1034252	SRS/SRM50 standalone

Servo clamp small, set (contents 3 off) for servo flanges

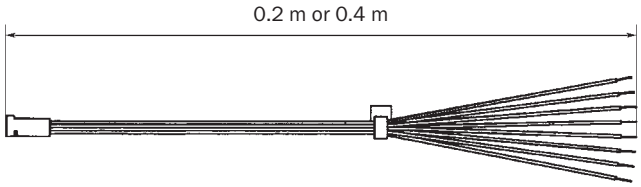
Type	Part no.
BEF-WK-SF	2029166



General tolerances to DIN ISO 2768-mk

Stranded cable/connector, straight, 8 wires, 8 x 0.24 mm²

Type	Part no.	Contacts	Wire length
DOL-0B08-G0M2XB1	2031081	8	0.2 m
DOL-0B08-G0M4XB1	2031083	8	0.4 m

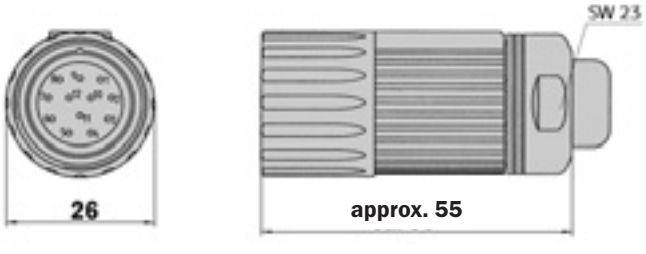


HIPERFACE® cable, 8 wires, supplied by the metre 4 x 2 x 0.15 mm², screened, flexible

Type	Part no.	Cores
LTG-2708-MW	6028361	8

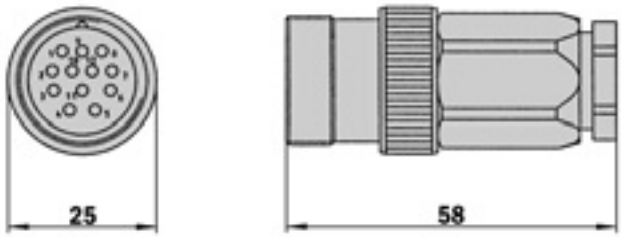
Connector M23 female, 12 pin, straight, screened

Type	Part no.	Contacts
DOS-2312-G	6027538	12



Connector M23 male, 12 pin, straight, screened

Type	Part no.	Contacts
STE-2312-G	6027537	12



Dimensional drawings and ordering information

Cable connector M23, 12 pin, straight, cable 8 core, HIPERFACE®, screened

Type	Part no.	Contacts	Cable length
DOL-2308-G1M5JB2	2031069	12	1.5 m
DOL-2308-G03MJB2	2031070	12	3.0 m
DOL-2308-G05MJB2	2031071	12	5.0 m
DOL-2308-G10MJB2	2031072	12	10.0 m
DOL-2308-G15MJB2	2031073	12	15.0 m

Connection Systems

Mating Connectors fit in for MS/10

Type	Part no.	PIN
DOS-MS10-G	7102129	10 Pin

Cable and Connector Assembly MS/10, 10 pin, straight, cable 8 core

Type	Part no.	Length
DOL-MS10-G1M5MA3	7102160	1.5 m
DOL-MS10-G03MMA3	7102161	3 m
DOL-MS10-G05MMA3	7102162	5 m
DOL-MS10-G10MMA3	7102163	10 m
DOL-MS10-G20MMA3	7102164	20 m
DOL-MS10-G30MMA3	7102165	30 m

Interchangeable Collets fpr Hub Shaft Mounting

Collets

Type	Part no.	Size
SPZ-006-AD-A	2029174	6 mm
SPZ-1E4-AD-A	2029175	1/4”
SPZ-008-AD-A	2029176	8 mm
SPZ-3E8-AD-A	2029177	3/8”
SPZ-010-AD-A	2029178	10 mm
SPZ-012-AD-A	2029179	12 mm
SPZ-1E2-AD-A	2029180	1/2” mm

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