

## **Read/Write Devices**

# **5**

## 5.1 Introduction

**Application area** The read/write devices (i.e., SLGs) provide inductive communication with the mobile data memories (i.e., MDSs) and the serial link to the interfaces (i.e., ASMs).

Various SLG models – for short, medium and long distances to the MDS – are available to meet customer requirements.

**Layout and functions** The SLG executes commands received from the interface. These commands for reading and writing data are converted via a modulator/demodulator circuit.

Communication between MDS and SLG takes place via inductive alternating fields.

The amount of data which can be transferred between SLG and MDS depends on the factors listed below.

- The speed at which the MDS moves through the transmission window of the SLG
- The length of the transmission window
- The type of MDS (i.e., RAM, FRAM, EEPROM)

### Overview table

Table 5-1 Overview table of the SLG

SLG Type	Operating Distance $S_a$ (Depending on MDS)	Limit Distance $S_g$	Temperature Range (During Operation)	Dimensions (WxHxD) in mm	Protection Rating
SLG 40	2 to 8 mm	10 mm	-25 to +70° C	Ø 30 x 54 (head)	IP65
SLG 40-S	2 to 6 mm	8 mm	-25 to +70° C	Ø 18 x 30 (head)	IP65
SLG 41/41-S	0 to 15 mm	25 mm	-25 to +70° C	120 x 40 x 40	IP65
SLG 41C/41CC	0 to 15 mm	25 mm	-25 to +70° C	55 x 75 x 30	IP67
SLG 42	0 to 55 mm	70 mm	-25 to +70° C	75 x 40 x 75	IP65
SLG 43	0 to 100 mm	150 mm	-25 to +70° C	238 x 40 x 80	IP65
SLG 44	100 to 800 mm	1000 mm	-25 to +70° C	238 x 40 x 80	IP63

## 5.2 SLG 40

### Application area

The SLG 40 is extremely suited for use on small assembly lines. The short installation distance between several SLG 40 antennas is a special feature. With the 2 included screw nuts, the antenna head can be positioned with extreme precision for each application.



Figure 5-1 Read/write device SLG 40

### Ordering data

Table 5-2 Ordering data for SLG 40

Read/write device SLG 40 up to 10 mm (low power), incl. screw nuts	6GT2 001-0EA10
Accessories: SLG plug connector and stub lines Mounting clamp	See chapter 3.10 3SX6 284

### Technical data

Table 5-3 Technical data of SLG 40

Inductive interface to MDS Data transmission speed Read/write distance SLG to MDS (max.) Transmission frequency	19200 baud 10 mm (see field data table) 134 kHz 1.81 MHz
• Power • Data	
Serial interface to ASM Transmission speed Line length, ASM to SLG (max.) at 24 V DC	6-pin SLG plug connector in acc. w. DIN 43651 19200 baud, RS 422 360 m
Supply voltage (via serial interface) Nominal value Permissible range Current consumption Idle/operation	24 V DC 20 to 30 V DC 25 mA/90 mA
MTBF	2 x 10 <sup>6</sup>

Table 5-3 Technical data of SLG 40

Housing	
Dimensions (in mm)	
For antenna head ( $\varnothing$ x threading x L)	M30 x 1.5 x 54
For electronics w/o plug (WxHxD)	125 x 40 x 75
Color	Antenna SLG housing
	Anthracite with orange head Ergo-gray
Material	Antenna SLG housing
	“Crastin” Polyamide 12
Plug connection	DIN 43651
Protection rating	
Antenna and SLG housing	IP65
Shock	50 g
Vibration	20 g
Mounting of SLG	4 M5 screws
Turning moment (at room temperature)	$\leq 2$ Nm
Ambient temperature	
During operation	-25° to +70° C
During transportation and storage	-40° to +85° C
Weight (approx.)	215 g
Certifications	EN 300 330 FCC Part 15 UL/CSA

**Field data**

Applicable for MDS 402/401

Table 5-4 Field data of SLG 40

Operating distance ( $S_a$ )	2 to 8 mm
Limit distance ( $S_g$ )	10 mm
Median deviation ( $L_d$ )	18 mm ( $\pm 9$ mm from middle)
Minimum distance from SLG to SLG (D)	$D_a \geq 50$ mm $D_b \geq 80$ mm

**FCC information**

Made in Germany  
SIEMENS MOBY I SLG 40

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES: OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

**Note**

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment:  
Such modifications could void the user’s authority to operate the equipment.

**Transmission window**

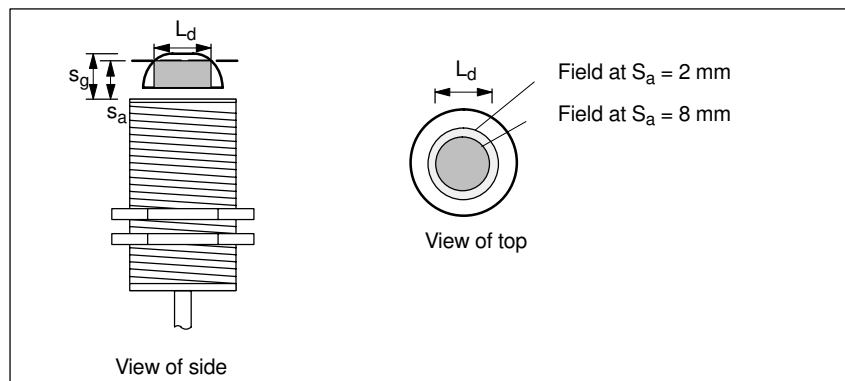


Figure 5-2 View of the antenna

**Transmission window:**

To ensure reliable data communication, the antenna of the MDS must be positioned within this field. A diameter of  $L_d = 18$  mm can be configured for the operating distance (2 to 8 mm).

**Metal-free space**

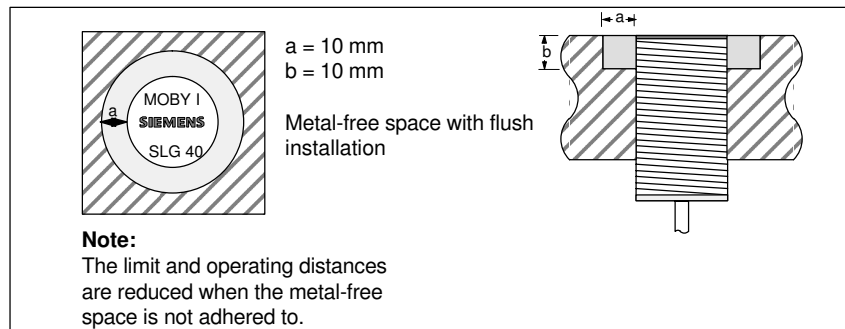


Figure 5-3 Metal-free space for SLG 40

**Optional mounting clamp**

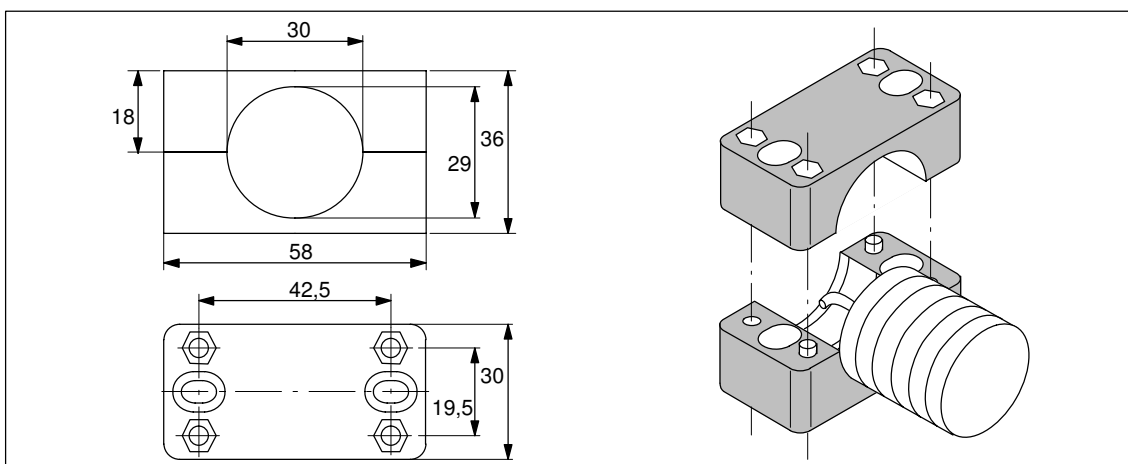


Figure 5-4 Mounting diagram and dimensions of SLG 40 with mounting clamp

**Definition of distance D**

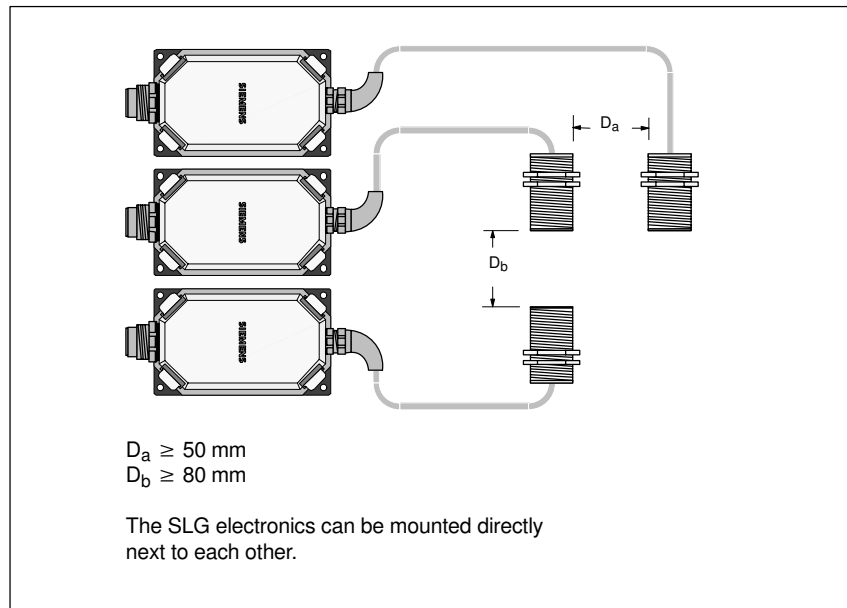


Figure 5-5 Distance D for SLG 40

**Dimensions (in mm)**

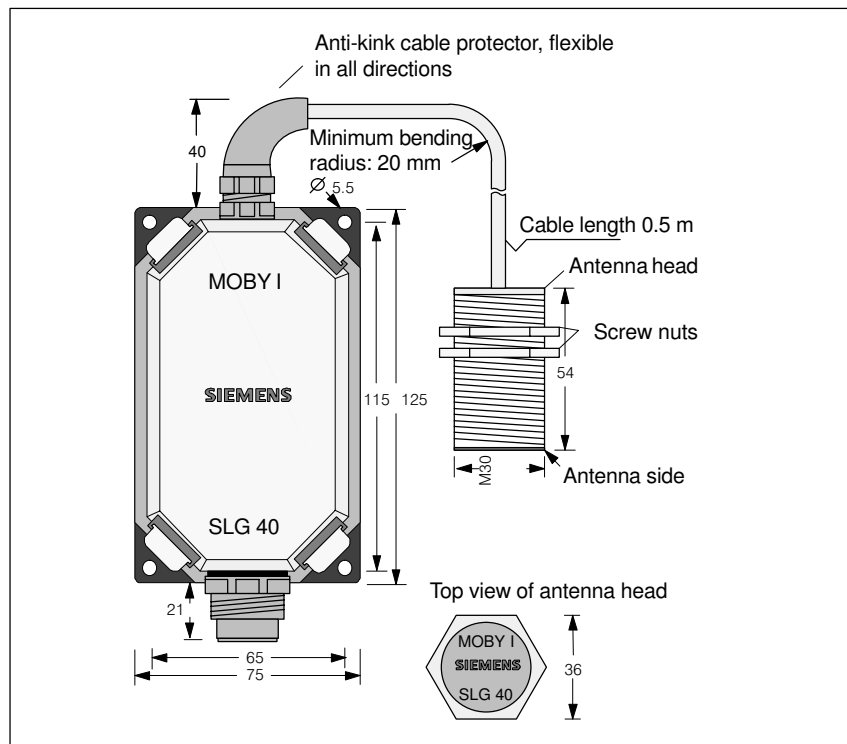


Figure 5-6 Dimensional diagram of SLG 40

## 5.3 SLG 40-S

**Application area** The SLG 40 is extremely suited to use in small assembly lines. The short installation distance between several SLG 40-S antennas is a special feature. With the 2 included screw nuts, the antenna head can be positioned with extreme precision for each application.

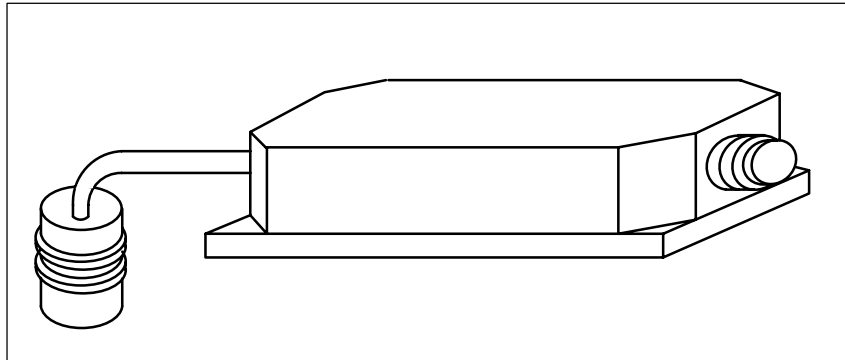


Figure 5-7 Read/write device SLG 40-S

**Ordering data** Table 5-5 Ordering data for SLG 40-S

Read/write device SLG 40-S up to 8 mm (low power), incl. screw nuts SLG plug connector and stub lines	6GT2 001-0EB00  See chapter 3.10
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**Technical data** Table 5-6 Technical data of SLG 40-S

Housing	
Dimensions (in mm)	
For antenna head ( $\varnothing$ x threading x L)	M18 x 1.0 x 30
For electronics w/o plug (L x W x H)	75 x 75 x 40
Color	Antenna SLG housing
	Anthracite with orange head Ergo-gray
Material	Antenna SLG housing
	“Crastin” Polyamide 12
Plug connection	DIN 43651
Protection rating	
Antenna and SLG housing	IP65
Shock	50 g
Vibration	20 g
Storage temperature	-40° to +85° C
Operation temperature	-25° to +70° C

Table 5-6 Technical data of SLG 40-S

Operating voltage	17 to 30 V DC
Current consumption	25 mA
Idle	
Operation	90 mA
Serial interface	RS 422
Transmission speed	19200 baud
Max. cable length (cf. chap. 3.10.1; standard cable)	360 m
MTBF	$2 \times 10^6$
Transmission frequency	
• Power	134 kHz
• Data	1.81 MHz
Mounting of SLG	4 M5 screws
Turning moment (at room temperature)	$\leq 2 \text{ Nm}$
Mounting of SLG head (included)	2 nuts (M18 x 1.0)
Weight (approx.)	200 g
Certifications	EN 300 330 FCC Part 15 UL/CSA

**Field data**

Applicable for MDS 401/402

Table 5-7 Field data of SLG 40-S

Operating distance ( $S_a$ )	2 to 6 mm
Limit distance ( $S_g$ )	8 mm
Diameter of transmission window ( $L_d$ )	9 mm
Median deviation	$\pm 4.5 \text{ mm}$ from middle
Minimum distance from SLG to SLG (D)	$D_a \geq 50 \text{ mm}$ $D_b \geq 80 \text{ mm}$

**FCC information**

Made in Germany  
SIEMENS MOBY I SLG 40S

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**Note**

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**Transmission window**

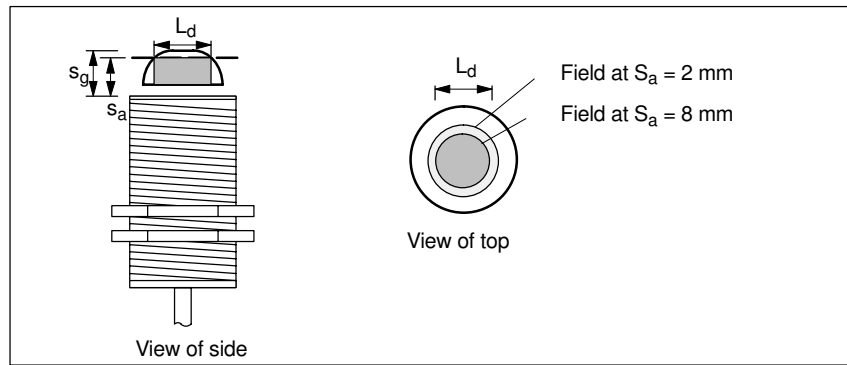


Figure 5-8 View of the antenna

**Transmission window:**

To ensure reliable data communication, the antenna of the MDS must be positioned within this field.

**Metal-free space**

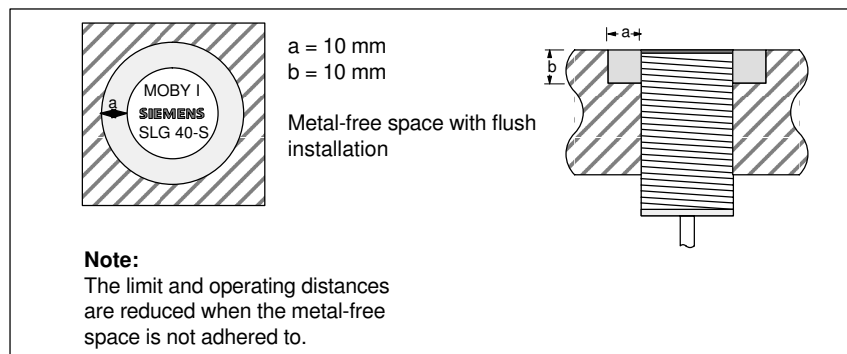


Figure 5-9 Metal-free space for SLG 40-S

**Definition of distance D**

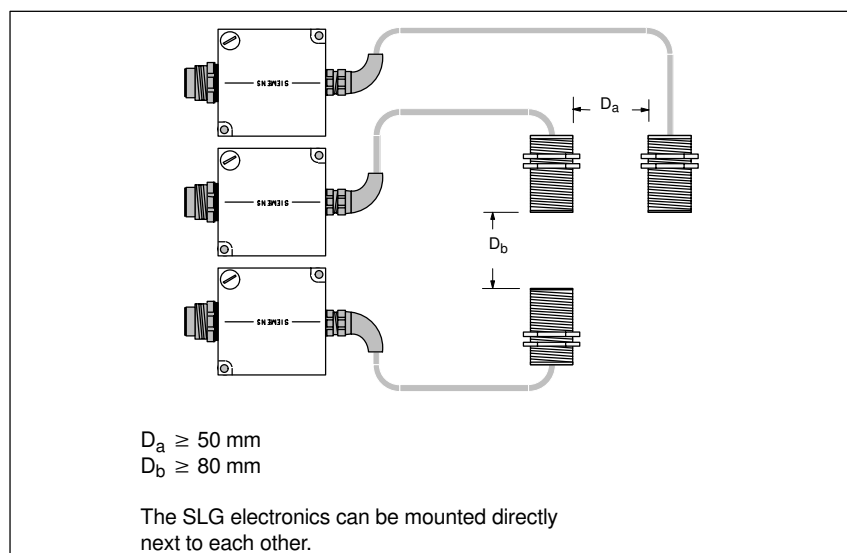


Figure 5-10 Distance D for SLG 40-S

**Dimensions  
(in mm)**

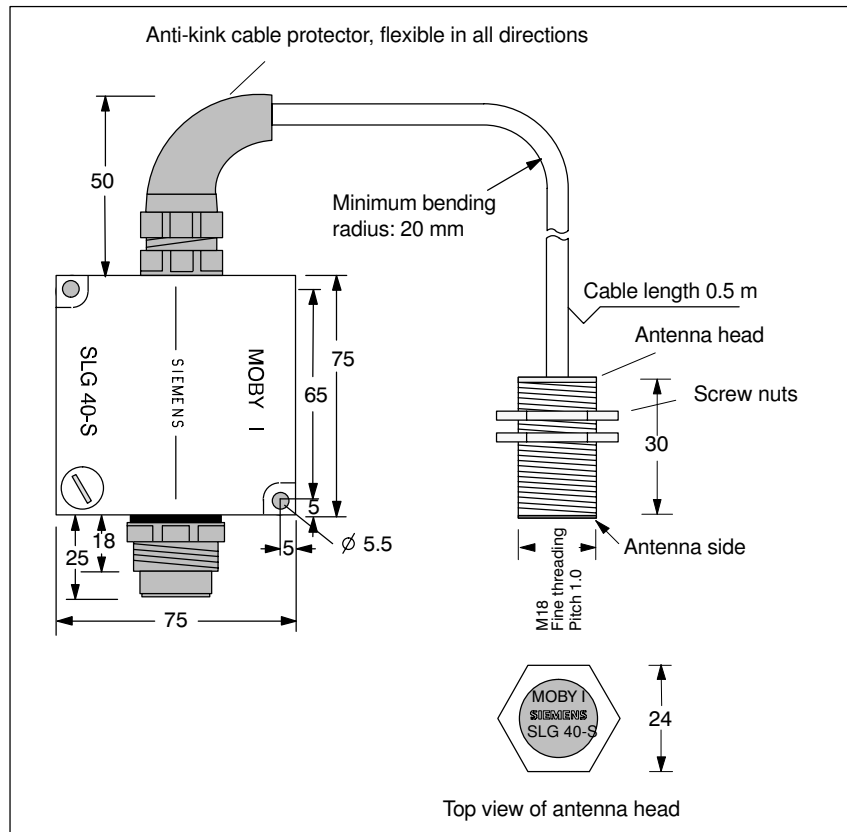


Figure 5-11 Dimensional diagram of SLG 40-S