Catalog 09 English

Systeme Helmholz®
compatible with you

Components for Automation

09

Systeme Helmholz GmbH




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The supplier of Simatic-compatible modules grows into the specialist in communication solutions

Alongside the familiar Simatic-compatible modules, communication is the core business of Systeme Helmholz GmbH. With products for teleservice, Ethernet coupling, and CAN bus links, Systeme Helmholz provides you with varied ways of connecting your systems and of remotely controlling and monitoring machines. These are the features that will give you the decisive competitive edge in international business. The opening of the Helmholz Shanghai Office in May 2006 is intended to bolster our position on the Chinese and Asian markets still further. That will enable us to care for existing and new customer relations even better.
The new company headquarter will also be built as planned in 2007, considerably expanding our office and production capacity. This will create the conditions for a lasting win-win situation for our company but, above all, for our customers.

Please give us a little of your valuable time because you, too, will likely find the ideal solution for your application in the new catalog.

Yours truly


Manfred Helmholz


Carsten Bokholt


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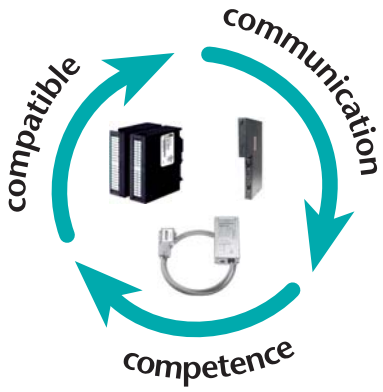
Abstract



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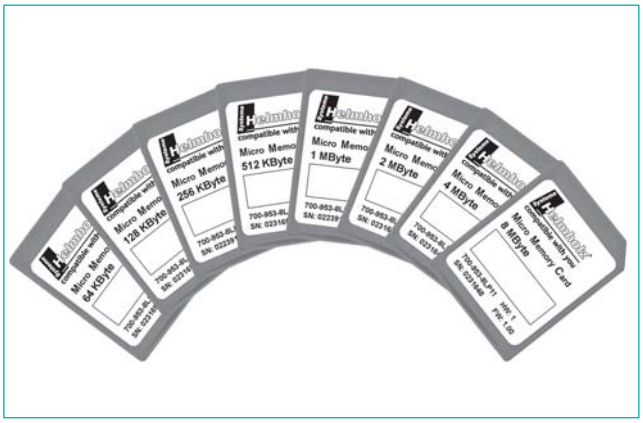


Micro Memory Cards

The Micro Memory Cards from the Systeme Helmholz GmbH are suitable for use in S7 controllers.

Our product program includes a whole range of the most commonly required modules. The Micro Memory Cards are available with the following memory capacities:

64 KB, 128 KB, 512 KB, 2 MB, 4 MB, 8 MB.

Micro Memory Cards with memory capacities 256 KB and 1 MB are new items in our product program that have just become available.

We are able to offer you a very advantageous price-performance ratio due to our modern production methods.

Ordering Data

	Order-No.
Micro Memory Cards	
64 KByte	**700-953-8LF11**
128 KByte	**700-953-8LG11**
256 KByte	**700-953-8LH11**
512 KByte	**700-953-8LJ11**
1 MByte	**700-953-8LK11**
2 MByte	**700-953-8LL11**
4 MByte	**700-953-8LM11**
8 MByte	**700-953-8LP11**

Technical Data

Micro Memory Cards	
Memory capacity	64 KByte 128 KByte 256 KByte 512 KByte 1 MByte 2 MByte 4 MByte 8 MByte
Applications	CPU 312C CPU 313C CPU 314C CPU 312...317, new type IM 151 CPU C7

Memory Cards

Memory card, short type

Memory cards from the Systeme Helmholz GmbH, suitable for the S7, are designed for use in CPU modules CPU 313 to CPU 318-2.

We have been able to achieve top quality standards and a very advantageous price/performance ratio with the use of modern, manufacturing methods.

Our product program covers the range of the most common submodules.

Ordering Data

	Order-No.
Flash EPROM cards	
short	
16 Kbytes	700-951-0KD00
32 Kbytes	700-951-0KE00
64 Kbytes	700-951-0KF00
128 Kbytes	700-951-0KG00
256 Kbytes	700-951-1KH00
512 Kbytes	700-951-0KJ00
1 Mbyte	700-951-1KK00
2 Mbytes	700-951-1KL00
4 Mbytes	700-951-1KM00
RAM cards	
short	
128 Kbytes	700-951-0AG00
256 Kbytes	700-951-1AH00
512 Kbytes	700-951-1AJ00
1 Mbyte	700-951-1AK00
2 Mbytes	700-951-1AL00

Technical Data

Flash EPROM cards	
short	
Memory capacity	16 Kbytes 32 Kbytes 64 Kbytes 128 Kbytes 256 Kbytes 512 Kbytes 1 Mbyte 2 Mbytes 4 Mbytes
Applications	CPU 313 to 318-2
RAM cards	
short	
Memory capacity	128 Kbytes 256 Kbytes 512 Kbytes 1 Mbyte 2 Mbytes
Applications	CPU 318-2 **only**

Memory Cards

Memory card long type

Memory cards from the Systeme Helmholz GmbH, suitable for the S7, are designed for use in CPU modules CPU 412 to CPU 417.

We have been able to achieve top quality standards and a very advantageous price/performance ratio with the use of modern, manufacturing methods.

Our product program covers the range of the most common submodules.

Ordering Data

	Order-No.
Flash EPROM Cards	
long	
64 KByte	700-952-0KF00
256 KByte	700-952-0KH00
1 MByte	700-952-1KK00
2 MByte	700-952-1KL00
4 MByte	700-952-1KM00
8 MByte	700-952-1KP00
16 MByte	700-952-1KS00
RAM cards	
long	
64 KByte	700-952-0AF00
256 KByte	700-952-1AH00
1 MByte	700-952-1AK00
2 MByte	700-952-1AL00
4 MByte	700-952-1AM00

Technical Data

Flash EPROM cards	
long	
Memory capacity	64 Kbytes 256 Kbytes 1 Mbyte 2 Mbytes 4 Mbytes 8 Mbytes 16 Mbyte
Applications	CPU 412 to 417
RAM cards	
long	
Memory capacity	64 Kbytes 256 Kbytes 1 Mbyte 2 Mbytes 4 Mbytes
Applications	CPU 412 to 417

DEA 300, Digital Input Modules

Digital input modules with 16 and 32 inputs

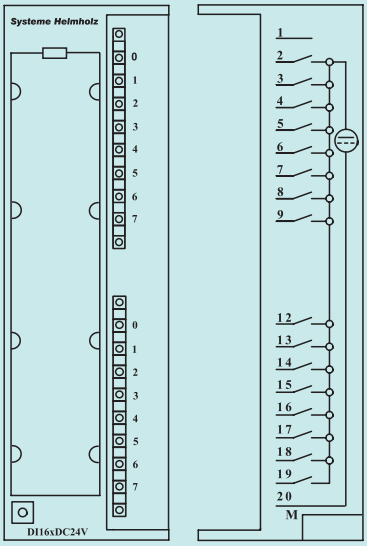
The digital inputs convert the external binary signals from the process into the internal signal level of the programmable controller.
Green LEDs indicate the signal state of the inputs and outputs.

The inputs of the modules from the Systeme Helmholz GmbH are also suitable for connection of 2-wire proximity switches.

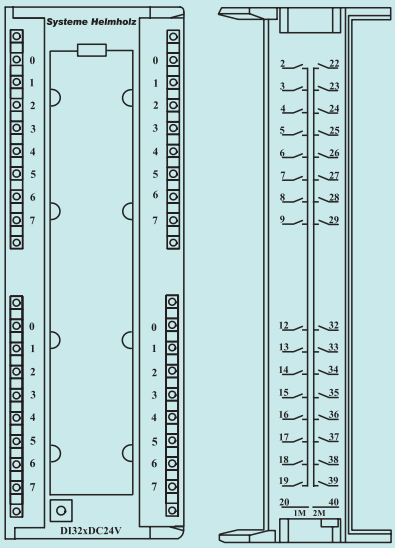
Modules with modified specifications or special modules can be supplied on request.

Accessory-Note

The Systeme Helmholz GmbH supplies front connectors and cable sets (see page 27).



700-321-1BH02



700-321-1BL00

Ordering Data

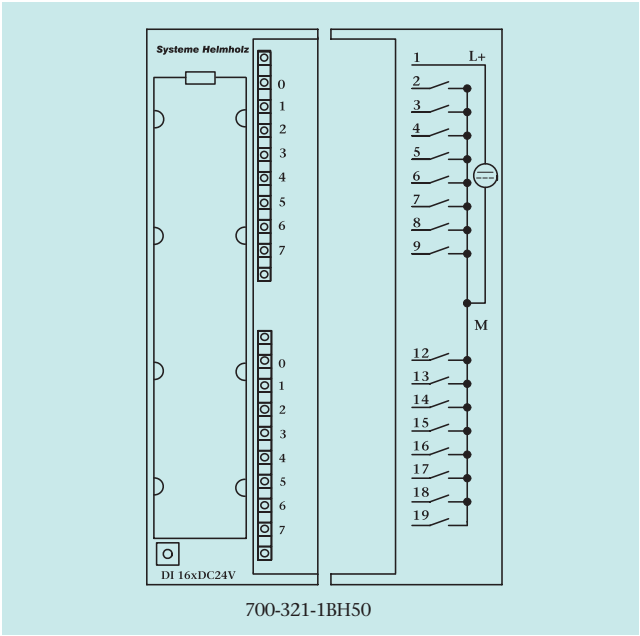
	Order-No.
DEA 300	
16 inputs (DC 24 V)	700-321-1BH02
32 inputs (DC 24 V)	700-321-1BL00
Manual DEA 300, german/english	900-321-1DE11

Technical Data

		700-321-1BH02	700-321-1BL00
Number of inputs		**16**	**32**
Isolation (from backplane bus) in groups of		yes (optocoupler) 16	yes (optocoupler) 16
Input voltage - nom. value - for "0" signal - for "1" signal		 DC 24 V -3 ... +5 V +13 ... +30 V	 DC 24 V -3 ... +5 V +13 ... +30 V
Input current - for "1" signal	typ.	 7 mA	 7 mA
Delay time	typ.	1.2 ... 4.8 ms	1.2 ... 4.8 ms
Connection of 2-wire initiator perm. quiescent current for "0" signal	 max.	yes 2 mA	yes 1,5 mA
Cable length - unshielded - shielded	 max. max.	 600 m 1000 m	 600 m 1000 m
Current consumption - internal (backplane bus) - external (from +24 V)	 typ. max.	 20 mA 140 mA	 30 mA 290 mA
Power loss (rated operation)	typ.	3.5 W	6.8 W
Front connector		20-way	40-way
Permissible ambient temperature - operating - transport and storage		 0°C ... 60°C -25°C ... 75°C	 0°C ... 60°C -25°C ... 75°C

DEA 300, Digital Input Module, m-reading

DEA 300, m-reading



700-321-1BH50

The digital inputs convert the external binary signals from the process into the internal signal level of the programmable controller.
Green LEDs indicate the signal state of the inputs and outputs.

The inputs of the modules from the Systeme Helmholz GmbH are also suitable for connection of 2-wire proximity switches.

Modules with modified specifications or special modules can be supplied on request.

Accessory-Note

The Systeme Helmholz GmbH supplies front connectors and cable sets (see page 27).

Ordering Data

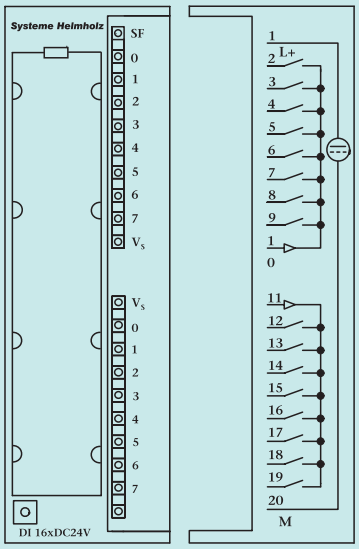
	Order-No.
DEA 300; m-reading	700-321-1BH50
Manual DEA 300, german/english	900-321-1DE11

Technical Data

Number of inputs	**16**
Isolation against backplane bus in groups of	16
Input voltage, reference potential is L+ - nom. value - for Signal "0" - for Signal "1"	 DC 24 V +30 ... -5 V -13 ... -30 V
Input current - for Signal "1"	 7 mA
Delay time	1,2 ... 4,8 ms
Cable length - unshielded - shielded	 600 m 1000 m
Current consumption - internal (backplane bus)	 10 mA
Power loss (nominal operation)	3,5 W
Front connector	20-way
Permissible ambient temperature - operating - transport and storage	 0°C ... 60°C -25°C ... 75°C

DEA 300, Digital Input Module with Alerts

DEA 300, with Alerts



700-321-7BH01

The digital inputs convert the external binary signals from the process into the internal signal level of the programmable controller.
Green LEDs indicate the signal state of the inputs and outputs.

The inputs of the modules from the Systeme Helmholz GmbH are also suitable for connection of 2-wire proximity switches.

This module offers as additional features parameterizable diagnostic- and processalerts, as well as a parameterizable input delays.

Modules with modified specifications or special modules can be supplied on request.

Accessory-Note

The Systeme Helmholz GmbH supplies front connectors and cable sets (see page 27).

Technical Data

Number of inputs	**16**
Isolation against backplane bus in groups of	16
Input voltage, reference potential is L+ - nom. value - for Signal "0" - for Signal "1"	 DC 24 V -3 ... +5 V +13 ... +30 V
Input current - for Signal "1"	 7 mA
Delay time parameterizable in groups by two	0,1 ... 20 ms
Diagnostics	parameterizable
Process alerts	parameterizable
Diagnostic alerts	parameterizable
Conduction length - unshielded - shielded	 600 m 1000 m
Current consumption - internal (backplane bus) typ. - extern L+, DC 24 V	 130 mA 90 mA
Encoder power supply outputs Output voltage	 min L+ DC -2,5 V
Output current	0 ... 150 mA
Short circuit protection	electrical
Power loss (nominal operation)	3,9 W
Front connector	20-way
Permissible ambient temperature - operating - transport and storage	 0°C ... 60°C -25°C ... 75°C

Ordering Data

	Order-No.
DEA 300, with Alerts	700-321-7BH01
Manual DEA 300, german/english	900-321-1DE11

DEA 300, Digital Output Modules

Digital output modules with 16 and 32 outputs

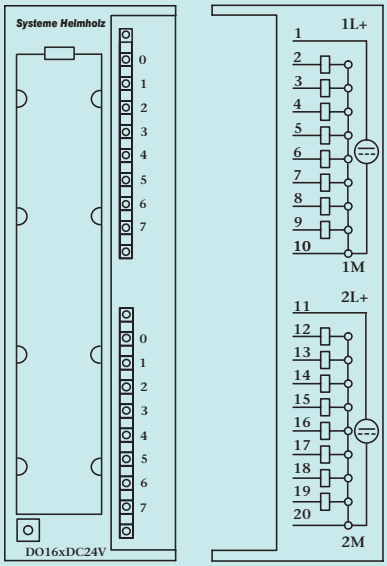
The digital outputs convert the internal signal level to the external signal level required for the process. Green LEDs indicate the signal state of the outputs.

The outputs of the modules from the Systeme Helmholz GmbH are also suitable for connection of, for example, solenoid valves, contactors, and small-power motors within the permissible data.

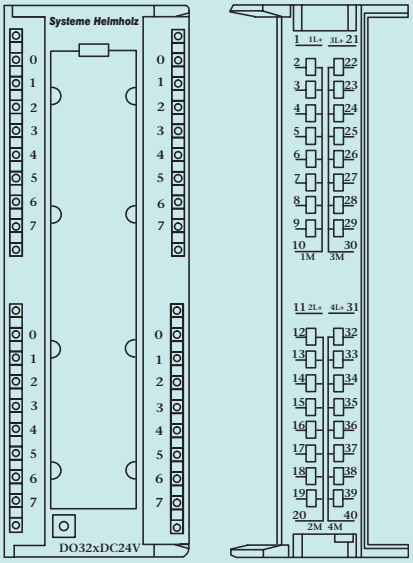
Modules with modified specifications or special modules can be supplied on request.

Accessory-Note

The Systeme Helmholz GmbH supplies front connectors and cable sets (see page 27).



700-322-1BH01



700-322-1BL00

Ordering Data

	Order-No.
DEA 300	
16 output (DC 24 V, 0.5 A)	**700-322-1BH01**
32 output (DC 24 V, 0.5 A)	**700-322-1BL00**
Manual DEA 300, german/english	**900-321-1DE11**

Technical Data

		700-322-1BH01	700-322-1BL00
Number of outputs		**16**	**32**
Isolation (from backplane bus) in groups of		yes (optocoupler) 8	yes (optocoupler) 8
Supply voltage V_P, V_S - nom. value - ripple V_{PP} - permissible range (with ripple) - value at t < 10 ms	 max. max.	 DC 24 V 3.6 V 20 ... 30 V 50 V	 DC 24 V 3.6 V 20 ... 30 V 50 V
Output current - nom. value		 0.5 A	 0.5 A
Short-circuit protection		electronic	electronic
Voltage induced on circuit interruption limited to		 -48 V	 -48 V
Cable length - unshielded - shielded	 max. max.	 600 m 1000 m	 600 m 1000 m
Current consumption - internal (backplane bus) - ext. w/o load (from +24 V)	 max. typ.	 45 mA 110 mA	 85 mA 220 mA
Power loss (nominal operation)	typ.	5 W	6,8 W
Front connector		20-way	40-way
Permissible ambient conditions - ambient temperature (during operation) - transport and storage temperature		 0°C ... 60°C -25°C ... 75°C	 0°C ... 60°C -25°C ... 75°

DEA 300, Digital Input/Output Modules

Digital input/output modules

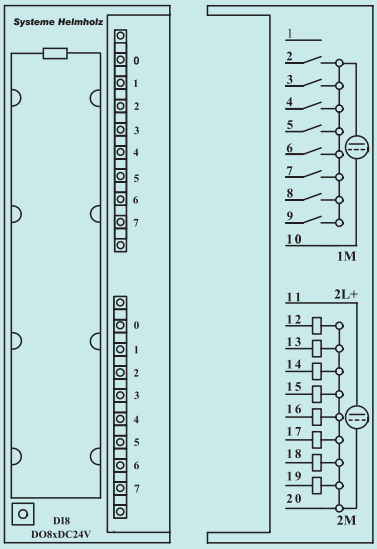
The digital inputs convert the external binary signals from the process into the internal signal level of the programmable controller.
The digital outputs convert the internal signal level of the programmable controllers into the external binary signal level required for the process. Green LEDs indicate the signal state of the inputs and outputs.

The inputs of the modules from the Systeme Helmholz GmbH are also suitable for connection of 2-wire proximity switches, the outputs for connection of, for example, solenoid valves, contactors, and small motors within the permissible data.

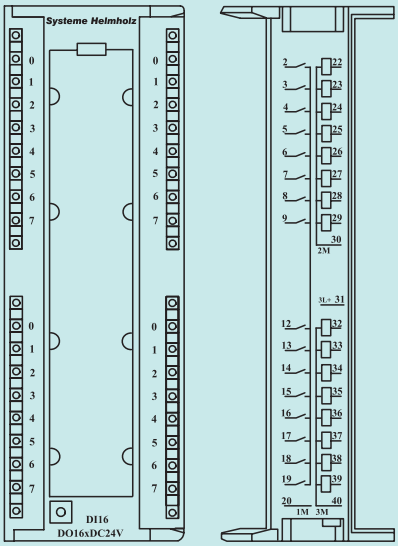
Modules with modified specifications or special modules can be supplied on request.

Accessory-Note

The Systeme Helmholz GmbH supplies front connectors and cable sets (see page 27).



700-323-1BH01



700-323-1BL00

Ordering Data

	Order-No.
DEA 300 8 inputs (DC 24 V)/ 8 outputs (DC 24 V, 0.5 A)	**700-323-1BH01**
16 inputs (DC 24 V)/ 16 outputs (DC 24 V, 0.5 A)	**700-323-1BL00**
Manual DEA 300, german/english	**900-321-1DE11**

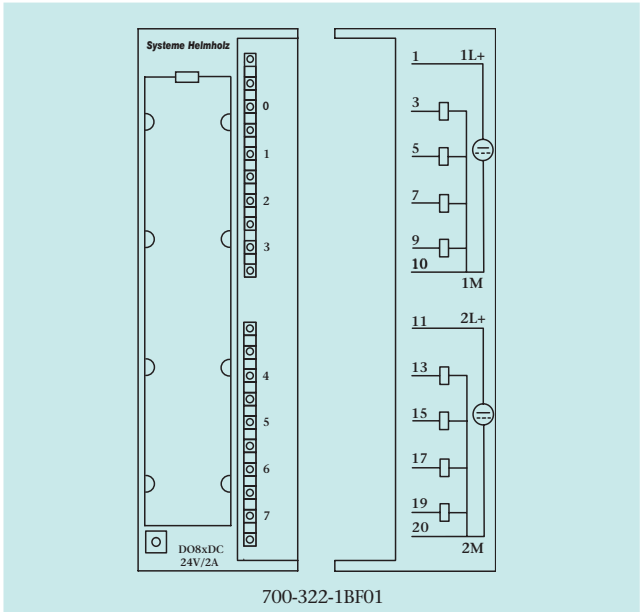
DEA 300, Digital Input/Output Modules

Technical Data

		700-323-1BH01	700-323-1BL00
Number of inputs		**8**	**16**
Isolation (from backplane bus) in groups of		yes (optocoupler) 8	yes (optocoupler) 16
Input voltage - nom. value - for "0" signal - for "1" signal		 DC 24 V -3 ... +5 V +13 ... +30 V	 DC 24 V -3 ... +5 V + 13 ... +30 V
Input current - for "1" signal	typ.	 7 mA	 7 mA
Delay time	typ.	1.2 ... 4.8 ms	1.2 ... 4.8 ms
Connection of 2-wire initiator perm. quiescent current for "0" signal	max.	yes 2 mA	yes 1.5 mA
Cable length - unshielded - shielded	max. max.	 600 m 1000 m	 600 m 1000 m
Number of outputs		**8**	**16**
Isolation (from backplane bus) in groups of		yes (optocoupler) 8	yes (optocoupler) 8
Output current - nom. value		 0.5 A	 0.5 A
Short-circuit protection		electronic	electronic
Voltage induced on circuit interruption limited to		 - 48 V	 - 48 V
Cable length - unshielded - shielded	max. max.	 600 m 1000 m	 600 m 1000 m
Supply voltage U_P, U_S - nom. value - ripple V_{PP} - permissible range (including ripple) - value at t < 10 ms	 max. max.	 DC 24 V 3.6 V 20 ... 30 V 50 V	 DC 24 V 3.6 V 20 ... 30 V 50 V
Current consumption - internal (backplane bus) - external (without load, from +24 V)	typ. max.	 35 mA 62 mA	 65 mA 110 mA
Power loss (nominal operation)	typ.	3.5 W	6.8 W
Front connector		20-way	40-way
Permissible ambient temperature - operating - transport and storage		 0°C ... 60°C -25°C ... 75°C	 0°C ... 60°C -25°C ... 75°C

DEA 300, Digital Output Module; 2 Amps

Digital output module ; 8 outputs, 2 amps



700-322-1BF01

The digital outputs convert the internal signal level to the external signal level required for the process. Green LEDs indicate the signal state of the outputs.

The outputs of the modules from the Systeme Helmholz GmbH are also suitable for connection of, for example, solenoid valves, contactors, and small-power motors within the permissible data. The output power of 2 amps per channel is also suitable for larger loads.

Accessory-Note

The Systeme Helmholz GmbH supplies front connectors and cable sets (see page 27).

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Technical Data

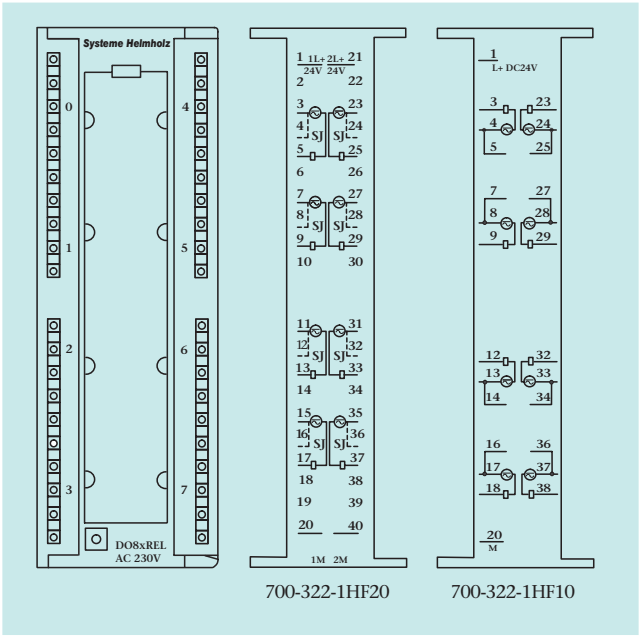
Number of outputs		**8**
Isolation (from backplane bus) in groups of		yes (optocoupler) 4
Supply voltage L+/L- - nom. value - ripple V_{PP} - permissible range (with ripple) - value at t < 10 ms	 max. max.	 DC 24 V 3.6 V 20 ... 30 V 40 V
Output current - nom. value		 2 A
Aggregate current of the outputs (per group, horizontal mounting) - to 40°C - to 55°C		 8 A 6 A
Short-circuit protection		electronic
Short-circuit current	typ.	12 A clocked
Voltage induced on circuit interruption limited to		-23 V
Cable length - unshielded - shielded	 max. max.	 600 m 1000 m
Current consumption - internal (backplane bus) - ext. without load (from +24 V)	 max. max.	 25 mA 70 mA
Power loss (nominal operation)	typ.	3.7 W
Front connector		20-way
Permissible ambient temperature - operating - transport and storage		 0°C ... 60°C -25°C ... 75°C

Ordering Data

	Order-No.
DEA 300 8 outputs (DC 24 V, 2 A)	**700-322-1BF01**
Manual DEA 300, german/english	**900-321-1DE11**

DEA 300, Digital Output Convert; Relays

Digital output convert; 8 relays



The digital outputs convert the internal signal level into the external signal levels required for the process.
A green LED indicates the signal state of the outputs.

The outputs of the modules from the Systeme Helmholz GmbH are suitable for connection of solenoid valves, contactors, and small-power motors within the permissible range, etc. The output power of up to 5 amps per group is also suitable for larger loads.

Accessory-Note

The Systeme Helmholz GmbH supplies front connectors and cable sets (see page 27).

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Ordering Data

	Order-No.
DEA 300 8 output, relays, 5 A 8 output, relays, 5 A, snubber	 700-322-1HF10 700-322-1HF20
Manual DEA 300, german/english	900-321-1DE11

Technical Data

Number of outputs		**8**
Nom. load voltage L+/L-		DC 24 V
Switching voltage		AC to 230 V DC to 120 V
Output current Aggregate current of the output (per group)	max.	 5 A
Isolation to backplane bus - in groups		optocoupler 1
Switching frequency - resistive load - inductive load - lamp load - mechanical	 max. max. max. max.	 2 Hz 0.5 Hz 2 Hz 10 Hz
Rated load - resistive load - inductive load	 max. max.	 5 A (AC 230 V) 5 A (DC 24 V) 2 A (AC 230 V) 2 A (DC 24 V)
Expected life - mechanical - resistive load		 10 Mio. 5 A, 0.2 Mio.
Permissible ambient temperature - operating - transport and storage		 0°C ... 60°C -25°C ... 75°C

DEA 300, Digital Output Convert; Relays

Digital output convert, 16 relays

The digital outputs convert the internal signal level into the external signal levels required for the process.
A green LED indicates the signal state of the outputs.

The outputs of the modules from the Systeme Helmholz GmbH are suitable for connection of solenoid valves, contactors, and small-power motors within the permissible range, etc. The output power of up to 8 amps per group is also suitable for larger loads.

Accessory-Note

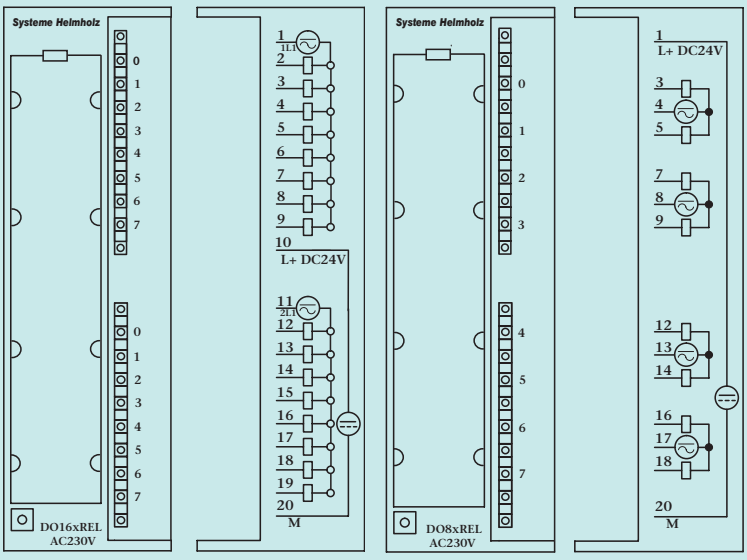
The Systeme Helmholz GmbH supplies front connectors and cable sets (see page 27).

Technical Data

	700-322-1HH01	700-322-1HF01
Number of outputs	**16**	**8**
Nom. load voltage L+/L-	DC 24 V	DC 24 V
Switching voltage	AC to 230 V DC to 120 V	AC to 230 V DC to 120 V
Output current Aggregate current of the output (per group) max.	8 A	4 A
Isolation to backplane bus - in groups continuos thermal current	optocoupler 8 2 A	optocoupler 2 3 A
Switching frequency - resistive load max. - inductive load max. - lamp load max. - mechanical max.	 1 Hz 0.5 Hz 1 Hz 10 Hz	 1 Hz 0.5 Hz 1 Hz 10 Hz
Rated load - resistive load max. - inductive load max.	 2 A (AC 230 V) 2 A (DC 24 V) 2 A (AC 120 V) 2 A (DC 24 V)	 2 A (AC 230 V) 2 A (DC 24 V) 2 A (AC 120 V) 2 A (DC 24 V)
Expected life - mechanical - resistive load	 10 Mio. 2 A, 1 Mio.	 10 Mio. 2 A, 0.7 Mio.
Perm. ambient temperature - operating - transport and storage	 0°C ... 60°C -25°C ... 75°C	 0°C ... 60°C -25°C ... 75°C

Ordering Data

	Order-No.
DEA 300 16 outputs, relays, 2 A 8 outputs, relays, 2 A	 **700-322-1HH01** **700-322-1HF01**
Manual DEA 300, german/english	**900-321-1DE11**



700-322-1HH01 700-322-1HF01

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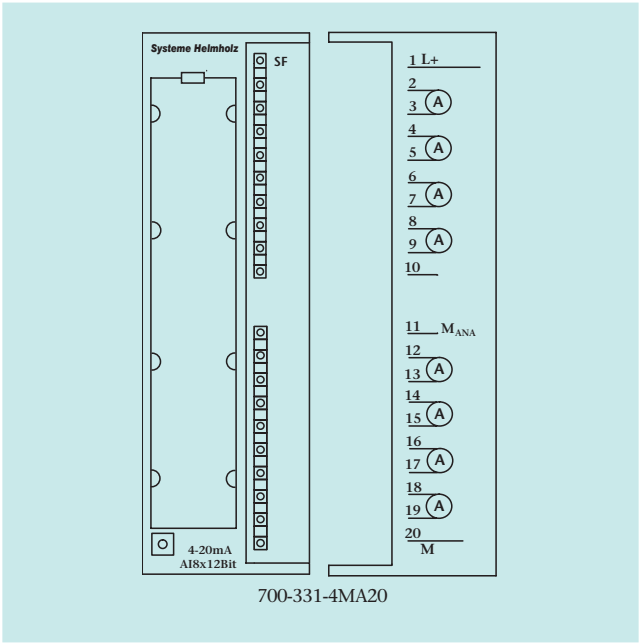
AEA 300, Analog Input Module for Connecting Sensors with Current Signals

Analog input module



700-331-4MA20

The analog input modules from the Systeme Helmholz GmbH convert the analog signals from the process to the internal signal level of the programmable controllers. This module is suitable for connection of sensors with current signals in the range up to ±20 mA.

The signal lines are connected to the corresponding front connectors. You can identify them on the labeling strip.

The modules can be fully parameterized with the hardware configurator of the programming software. Hardware configuration is not necessary (**no** range card).

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Technical Data

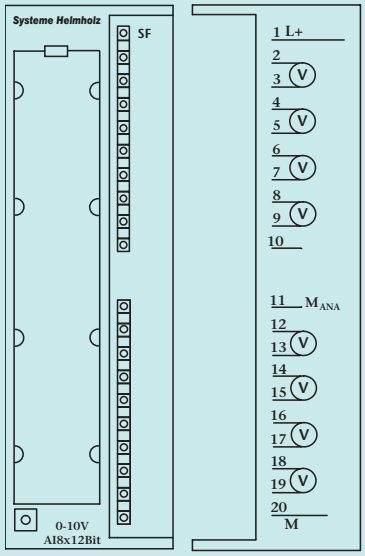
Number of inputs		**8**
Alarms - Limit value alarm - Diagnostic alarm		 parameterizable parameterizable for channels 0 and 2
Diagnostics		red LED for group error display
Nom. load voltage L+/L-		DC 24 V
Polarity reversal protection		yes
Input ranges - Current, 4 DMU - Current, 2 DMU		 ±3,2 mA/25 Ω ±10 mA/25 Ω 0...20 mA/25 Ω 4...20 mA/25 Ω ±20 mA/25 Ω 4...20 mA/25 Ω
Permiss. input current for current input		max. 40 mA
Isolation against backplane bus		yes
Conversion time/resolution (per chann.) - integration time - noise suppression for interference frequency - resolution (SG= sign) (depends on integration time)		 2,5/16,6/20/100 ms 400/60/50/10 Hz 9/12/12/14 Bit + SG
Operational limit	max.	±0,6%
Basic error limit at 25 °C	max.	±0,5%
Cable length (shielded)		200 m
Current consumption - internal (from backplane bus) - external (L+)	 typ. max.	 120 mA 200 mA
Power loss	typ.	7 W
Front connector		20-way
Permissible ambient temperature - operating - transport and storage		 0°C ... +60°C -25°C ... +75°C

Ordering Data

	Order-No.
AEA 300 8 current inputs; for connecting current sensors	700-331-4MA20
Manual AEA 300, german/english	900-331-0AA01

AEA 300, Analog Input Module for Connecting Sensors with Voltage Signals

Analog input module



700-331-0V010

The analog input modules from the Systeme Helmholz GmbH convert the analog signals from the process to the internal signal level of the programmable controllers. This module is suitable for connection of sensors with voltage signals in the range up to ±10 V.

The signal lines are connected to the corresponding front connectors. You can identify them on the labeling strip.

The modules can be fully parameterized with the hardware configurator of the programming software. Hardware configuration is not necessary (**no** range card).

c UL us LISTED

Technical Data

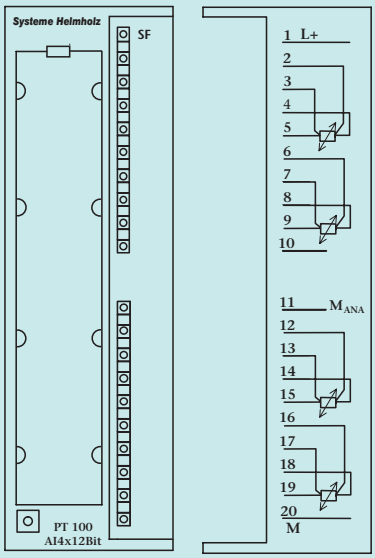
Number of inputs	**8**
Alarms - Limit value alarm - Diagnostic alarm	 parameterizable parameterizable for channels 0 and 2
Diagnostics	red LED for group error display
Nom. load voltage L+/L-	DC 24 V
Polarity reversal protection	yes
Input ranges Voltage/ input impedance	 ±80 mV/10 M Ω ±250 mV/10 M Ω ±500 mV/10 M Ω ±1 V/10 M Ω ±2,5 V/100 k Ω ±5 V 100 k Ω 1...5 V/100 k Ω ±10 V/100 k Ω
Permiss. input voltage for voltage input max.	 20 V
Isolation against backplane bus	yes
Conversion time/resolution (per chann.) - integration time - noise suppression for interference frequency - resolution (SG = sign) (depends on integration time)	 2,5/16,6/20/100 ms 400/60/50/10 Hz 9 + SG/12 + SG/ 12 + SG/14 + SG Bit
Operational limit max.	±0,6%
Basic error limit at 25 °C max.	±0,5%
Cable length (shielded) max.	200 m (50 m at ±80 mV)
Current consumption - internal (from backplane bus) typ. - external (L+) max.	 120 mA 200 mA
Power loss typ.	7 W
Front connector	20-way
Permissible ambient temperature - operating - transport and storage	 0°C ... +60°C -25°C ... +75°C

Ordering Data

	Order-No.
AEA 300 8 voltage inputs; for connection of voltage sensors	700-331-0V010
Manual AEA 300, german/english	900-331-0AA01

AEA 300, Analog Input Module for Connecting Resistance Thermometers

Analog input module



700-331-PT100

The analog input modules from the Systeme Helmholz GmbH convert the analog signals from the process to the internal signal level of the programmable controllers. This module is suitable for connection of Pt100/Ni100 sensors.

The signal lines are connected to the corresponding front connectors. You can identify them on the labeling strip.

The modules can be fully parameterized with the hardware configurator of the programming software. Hardware configuration is not necessary (**no** range card).

c UL us LISTED

Technical Data

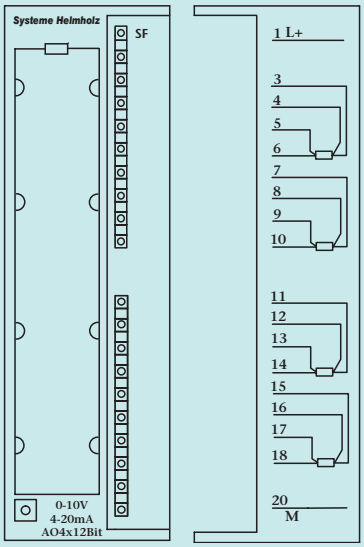
Number of inputs		**4**
Alarms - Limit value alarm - Diagnostic alarm		 parameterizable parameterizable for channels 0 and 2
Diagnostics		red LED for group error display
Nom. load voltage L+/L-		DC 24 V
Polarity reversal protection		yes
Input resistance		10 M Ω
Resistance thermometer		Pt 100, Ni 100 (standard and climatic range)
Resistance		100, 150, 600 Ω
Sensor connection		2, 3 or 4-wire connection
Isolation against backplane bus		yes
Conversion time/resolution (per chann.) - integration time - noise suppression for interference frequency - resolution (SG = sign) (depends on integration time)		 2,5/16,3/20/100 ms 400/60/50/10 Hz 9 + SG/12 + SG/ 12 + SG/14 + SG Bit
Operational limit	max.	±0,6%
Basic error limit at 25 °C	max.	±0,5%
Cable length (shielded)	max.	200 m
Current consumption - internal (from backplane bus) - external (L+)	typ. max.	 120 mA 200 mA
Power loss	typ.	7 W
Front connector		20-way
Permissible ambient temperature - operating - transport and storage		 0°C ... +60°C -25°C ... +75°C

Ordering Data

	Order-No.
AEA 300 4 Pt100/Ni100 resistance thermometers	**700-331-PT100**
Manual AEA 300, german/english	**900-331-0AA01**

AEA 300, Analog Output Module; 4-Channel

4-channel analog output module



700-332-5HD01

The analog output modules from the Systeme Helmholz GmbH convert the internal signal level of the programmable controllers to the analog signal level required for the process.
This module is suitable for connection of analog actuators for voltage and current outputs in the range up to ±10 V or ±20 mA.

The signal lines are connected to the corresponding front connectors. You can identify them on the labeling strip.

The modules can be fully configured with the programming software. Hardware switchover is not necessary.

c UL us LISTED

Technical Data

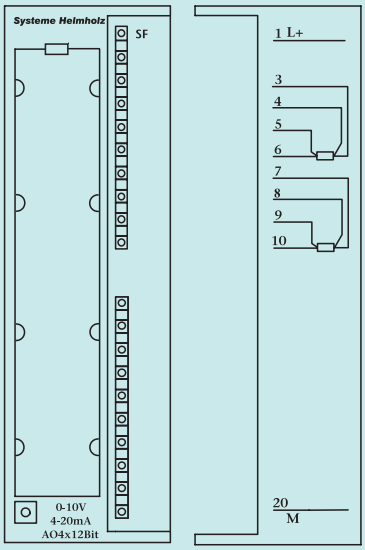
Number of outputs		**4**
Diagnostics alarm		yes
Diagnostics		red LED for group error display
Nom. load voltage		DC 24 V
Output ranges		
- voltage outputs		0...10 V; ±10 V; 1...5 V
- current outputs		4...20 mA; ±20 mA; 0...20 mA
Load impedance		
- for voltage outputs	min.	1 k Ω
- for current outputs	max.	500 Ω
- at capacitive load	max.	1 µF
- at inductive load	max.	10 mH
Voltage output		
- short-circuit protection		yes
- short-circuit current	max.	35 mA
Current output		
- open-circuit voltage	max.	18 V
isolation against backplane bus		yes
Operational limit (0 to 60 °C, with reference to output range)		
- voltage		±0,5 %
- current		±0,6 %
Basic error limit (operational limit at 25 °C, with reference to output range)		
- voltage		±0,4 %
- current		±0,5 %
Cable length (shielded)	max.	200 m
Current consumption		
- internal (from backplane bus)	typ.	60 mA
- external, without load	max.	240 mA
Power loss	typ.	3 W
Front connector		20-way
Permissible ambient temperature		
- operating		0°C ... +60°C
- transport and storage		-25°C ... +75°C

Ordering Data

	Order-No.
AEA 300 4 outputs for connecting analog actuators	700-332-5HD01
Manual AEA 300, german/english	900-331-0AA01

AEA 300, Analog Output Modules; 2-Channel

2-channel analog output module



700-332-5HB01

The analog output modules from the Systeme Helmholz GmbH convert the internal signal level of the programmable controllers to the analog signal level required for the process.
This module is suitable for connection of analog actuators for voltage and current outputs in the range up to ±10 V or ±20 mA.

The signal lines are connected to the corresponding front connectors. You can identify them on the labeling strip.

The modules can be fully configured with the programming software. Hardware switchover is not necessary.

c UL us LISTED

Technical Data

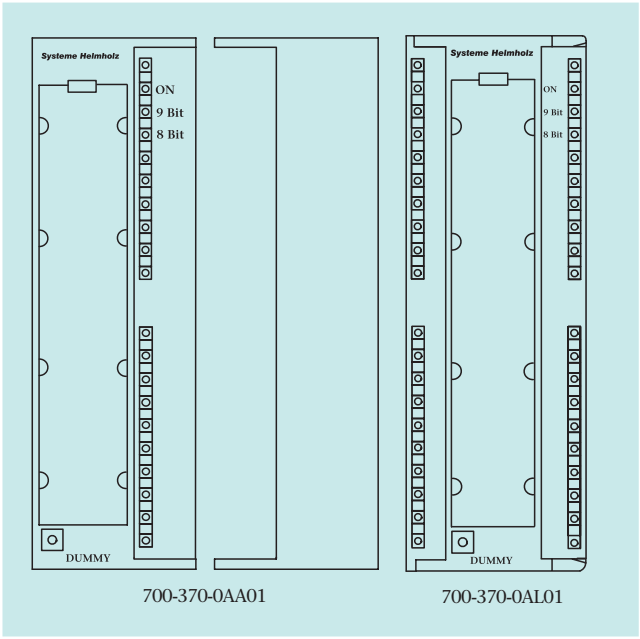
Number of outputs		**2**
Diagnostics alarm		yes
Diagnostics		red LED for group error display
Nom. load voltage		DC 24 V
Output ranges		
- voltage outputs		0...10 V; ±10 V; 1...5 V
- current outputs		4...20 mA; ±20 mA; 0...20 mA
Load impedance		
- for voltage outputs	min.	1 k Ω
- for current outputs	max.	500 Ω
- at capacitive load	max.	1 µF
- at inductive load	max.	10 mH
Voltage output		
- short-circuit protection		yes
- short-circuit current	max.	35 mA
Current output		
- open-circuit voltage	max.	18 V
isolation against backplane bus		yes
Operational limit (0 to 60 °C, with reference to output range)		
- voltage		±0,5 %
- current		±0,6 %
Basic error limit (operational limit at 25 °C, with reference to output range)		
- voltage		±0,4 %
- current		±0,5 %
Cable length (shielded)	max.	200 m
Current consumption		
- internal (from backplane bus)	typ.	60 mA
- external, without load	max.	120 mA
Power loss	typ.	3 W
Front connector		20-way
Permissible ambient temperature		
- operating		0°C ... +60°C
- transport and storage		-25°C ... +75°C

Ordering Data

	Order-No.
AEA 300 2-channel analog output module	**700-332-5HB01**
Manual AEA 300, german/english	**900-331-0AA01**

Dummymodule

Dummymodule



The new dummymodule from the Systeme Helmholz GmbH is for reserving slots for unparameterized signal modules.

The structure and address assignment is retained when it is eventually replaced by a signal module.

For 20-way or 40-way front connectors.

Meaning of the 8/9-bit display of the placeholder module

There are two different methods of transmitting data on the backplane bus of the S7 300:

- without parity bit

Only the data bytes (8 bits) are transmitted.
This method is obsolete because errors during transmission cannot be detected and the I/Os may be incorrectly switched.

- with parity bit

The newer safe method transmits a parity bit in addition to the useful data (9 bits per byte). That way transmission errors can be detected and incorrect connections avoided.

The CPUs known to us are capable of both transmission methods. Due reasons of downward compatibility all I/O modules that are capable of the 9-bit method can also be switched back to the 8-bit method. This occurs when at least one module is plugged into the system that is only capable of the 9-bit method.

The 8/9-bit LEDs indicate which method the complete system is using.

If an 8-bit module is used, all 9-bit modules on the backplane will only use 8-bit transmission.

The 9-bit method was introduced shortly after the market launch of the S7 300.

However, to ensure downward compatibility, new CPUs are still capable of the 8-bit method.

Systeme Helmholz modules all use the reliable 9-bit method when possible.

However, there are modules possessing just the 8-bit method on the market. To ensure reliable data transmission on the backplane bus and avoid incorrect switching, we advise against using such modules. The presence of 8-bit modules can be seen by the shining of the red 8-bit LED of the placeholder module.

Ordering Data

	Order-No.
Dummymodule, 20-way **Dummymodule,** 40-way	700-370-0AA01 700-370-0AL01
Manual DEA 300, german/english	900-321-1DE11

Technical Data

Current consumption - internal	 5 mA
Power loss (nominal operation)	0,03 W
Front connector	-
Permissible ambient temperature - operating - transport and storage	 0°C ... 60°C -25°C ... 75°C

Front Connectors and Ready-wired Front Connectors

Front connectors 20-way and 40-way **EasyConnect®**

The 40-way front connector from the Systeme Helmholz GmbH is supplied with **EasyConnect®** technology. The connector is quickly wired up simply by opening and closing the spring-loaded terminal by turning the screw head (180° counterclockwise to open, clockwise to close). That not only saves the user money but also installation time.

The flat design permits optimum closing of the module front cover even with the connector fully wired.

The 20-way front connector from the Systeme Helmholz GmbH uses time-tested screw connections.

The front connector permits simple connection of sensors and actuators to input/output modules of Systeme Helmholz GmbH or other manufacturers.

The wiring can thus be retained even in the event of module replacement.

Technical Data

Front Connector 20-way connection	 screw-type terminals
cable w/o wire end ferrule	flexible conductor 0,25 -1,5 mm²
strip length	6 mm
max. tightening torque	0,5 Nm
weight	approx. 60 g
voltage at 60°C	3 A
current	230 V AC
Front Connector 40-way connection	 **EasyConnect®**
cable **without wire end ferrules**	flexible conductor 0.34-1 mm²
strip length	8-10 mm
weight	approx. 70 g
voltage at 60°C	3 A
current	230 V AC
No wire end ferrule needed!	
Permissible ambient temperature - operating - transport and storage - relative humidity max.	 0°C ... +60°C -25°C ... +80°C 75 % at +25°C

Ordering Data

	Order-No.
Front Connector for DEA 300	
20-way with screw contacts	**700-392-1AJ10**
40-way with screw contacts	**700-392-1AM00**
40-way with **EasyConnect®** technology	**700-392-1AM10**
Ready-wired Front Connectors[1] **DEA 300**	
for screw connection, 20-way, 2m	**700-392-1AJ10A**
for screw connection, 20-way, 3m	**700-392-1AJ10B**
for screw connection, 20-way, 5m	**700-392-1AJ10C**
for **EasyConnect®** connection, 40-way, 2m	**700-392-1AM10A**
for **EasyConnect®** connection, 40-way, 3m	**700-392-1AM10B**
for **EasyConnect®** connection, 40-way, 5m	**700-392-1AM10C**

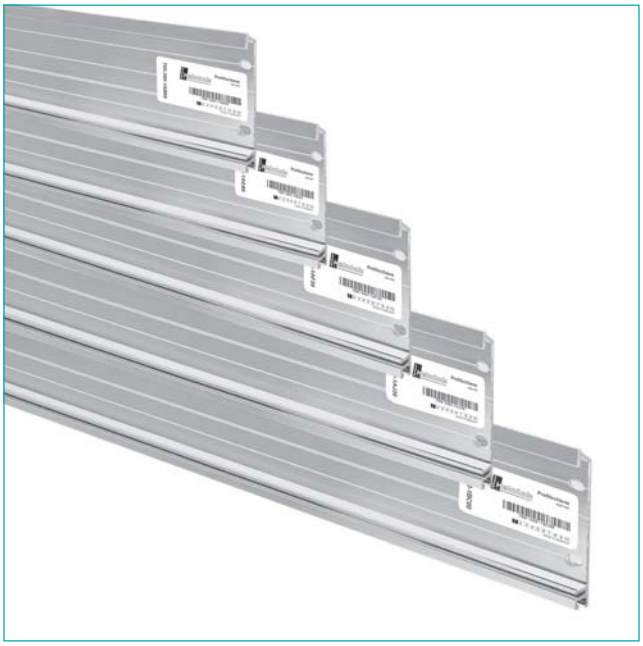
1) strands 0.5 mm² blue (RAL 5010). Labeling as on connector.

Ready-wired Front Connectors

The Ready-wired Front Connectors are available for easy connection of sensors and actuators to input/output modules of Systeme Helmholz GmbH.

The cabeling can be kept when modules are replaced.

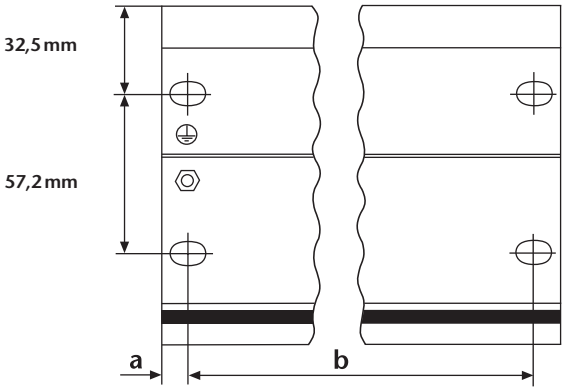
Mounting Rack



Mounting rack

For all DEA and AEA etc., we offer the mechanical module subrack for the S7-300, as an accessory in various lengths.

Standard - Mounting rack



length mounting rack	distance a	distance b
160 mm	10 mm	140 mm
320 mm	15 mm	290 mm
482,6 mm	8,3 mm	466 mm
530 mm	15 mm	500 mm
830 mm	15 mm	800 mm

Ordering Data

	Order-No.
Mounting rack	
length 160 mm	**700-390-1AB60**
length 320 mm	**700-390-1SO01**
length 482 mm	**700-390-1AE80**
length 530 mm	**700-390-1AF30**
length 830 mm	**700-390-1AJ30**
length 2000 mm	**700-390-1BC00**

PROFIBUS

EasyConnect® PROFIBUS-Connector, 90°

EasyConnect® PROFIBUS connector

Features

- Metalized housing
- No loosable parts
- **EasyConnect**® technology
- Visual connection control
- Integrated terminating-resistor
- 90° cable outlet
- Small housing

The new **EasyConnect**® PROFIBUS connector from the Systeme Helmholz GmbH rounds off the range of bus connector products excellently. The new **EasyConnect**® connectors feature quick-connect technology, making the stripping of bus conductors superfluous. The bus connectors are used to connect a PROFIBUS node to the PROFIBUS line. The connector is quick to install, and has a metallized housing and integrated terminating resistors.
The Systeme Helmholz GmbH offers the new **EasyConnect**® connector with a perpendicular cable outlet.
Correct connection of the PROFIBUS cable can quickly be checked visually even after installation.

Find a list of released cables on our website.

Ordering Data

	Order-No.
PROFIBUS connector EasyConnect® without prog. device connector 90° with prog. device connector 90°	 700-972-0BA50 700-972-0BB50
Stripping tool for PROFIBUS	700-972-6AA00

The PROFIBUS connectors are also available in boxes containing 10 or 50 pieces.

Technical Data

Programming device connector Order No. 700-972-0BB50 Order No. 700-972-0BA50	 **yes** **no**
Dimensions (LxWxH mm)	72 x 40 x 17
Weight	approx. 40 g
Outgoing cable	vertical outgoing cable suitable for fast-connect stripping tool
Terminating resistor	Resistor combination integrated and connectable with slide switch
Transmission rate max.	12 Mbit/s
Interfaces PROFIBUS station	 SUB-D connector, 9-way
PROFIBUS cable	FC standard cable solid 0,64 mm²
Current consumption	4.75 ... 5.25 V DC (must come from connected equip.)
Current consumption max.	12.5 mA
Permissible ambient conditions - operating temperature - transport/storage temperatur - relative humidity max.	 0°C ... +60°C -25°C ... +80°C 75% at +25°C
Degree of protection	IP 40

Bus Connector for PROFIBUS, 90°

Bus connector for PROFIBUS with (l.) and without (r.) prog. device connector

Features

- Metalized housing
- No loosable parts
- Integrated terminating-resistor
- 90° cable-outlet
- Small housing
- Screw terminals

The compact design of the bus connectors from the Systeme Helmholz GmbH makes them suitable for use in all Siemens CPU types.

A slide switch sets whether the connector will be used as a node or end of segment. The switch can also be operated when the connector is plugged. The switch setting is clearly visible.

The connector must be used as a node („OFF“) when the incoming bus (A1, B1) and the outgoing bus (A2, B2) are to be interconnected. This deactivates the terminating resistors.

The connector must be set as a segment end (“ON”), on the first and last (extreme) stations of the segment. In that case the terminating resistors are connected on the incoming bus, the outgoing bus is disconnected.

Ordering Data

	Order-No.
Bus connector for PROFIBUS without prog. device connector 90° with prog. device connector 90°	 **700-972-0BA12** **700-972-0BB12**
Stripping tool for PROFIBUS	**700-972-6AA00**

The PROFIBUS connectors are also available in boxes containing 10 or 50 pieces.

Technical Data

Programming device connector Order No. 700-972-0BB12 Order No. 700-972-0BA12	 **yes** **no**
Dimensions (LxWxH mm)	64 x 40 x 17
Weight	approx. 40 g
Outgoing cable	vertical outgoing cable suitable for fast-connect stripping tool
Terminating resistor	Resistor combination integrated and connectable with slide switch
Transmission rate max.	12 Mbit/s
Interfaces PROFIBUS station	 SUB-D connector, 9-way
PROFIBUS cable	4 terminals for wires up to 1.0 mm²
Current consumption	4.75 ... 5.25 V DC (must come from connected equip.)
Current consumption max.	12.5 mA
Permissible ambient conditions - operating temperature - transport/storage temperature - relative humidity max.	 0°C ... +60°C -25°C ... +80°C 75% at +25°C
Degree of protection	IP 40

Bus Connectors for PROFIBUS 90° with diagnostic LEDs

Bus Connectors for PROFIBUS with diagnostic LEDs

Features

- 3 LEDs status displays
- Indicates bus operation, station transmitting, terminating resistor inserted
- Screw terminals
- Integrated terminating resistors
- No loosable parts
- Small housing

The PROFIBUS diagnostic connector can be used to connect a PROFIBUS network in which the user can check the status of the bus system at any time at a glance.

The three built-in LEDs with the easily distinguished colors blue, green, and orange indicate the most important states of the PROFIBUS network at each station. The state of the terminating resistor (orange), whether bus activity is in progress (green), and whether the station addressed is participating in bus traffic (blue) are all indicated.

This means errors, such as bus interruptions, missing or incorrectly connected terminating resistors, and malfunctioning or failed bus stations can be detected immediately.

The PROFIBUS diagnostic connector with screw terminals can be supplied with or without a programming (PG) device connector.

Ordering Data

	Order-No.
Bus connector for PROFIBUS with diagnostic LEDs without prog. device connector 90° with prog. device connector 90°	 700-972-7BA12 700-972-7BB12
Stripping tool for PROFIBUS	700-972-6AA00

The PROFIBUS connectors are also available in boxes containing 10 or 50 pieces.

Technical Data

Programming device connector Order No. 700-972-7BB12 Order No. 700-972-7BA12	 **yes** **no**
Dimensions (LxWxH mm)	64 x 40 x 17
Weight	approx. 40 g
Outgoing cable	vertical outgoing cable suitable for fast-connect stripping tool
Terminating resistor	Resistor combination integrated and connectable with slide switch
Transmission rate max.	12 Mbit/s
Interfaces PROFIBUS station	 SUB-D connector, 9-way
PROFIBUS cable	4 terminals for wires up to 1.0 mm²
Current consumption	4.75 ... 5.25 V DC (must come from connected equip.)
Current consumption max.	35 mA
Permissible ambient conditions - operating temperature - transport/storage temperature - relative humidity max.	 0°C ... +60°C -25°C ... +80°C 75% at +25°C
Degree of protection	IP 40

Bus Connectors for PROFIBUS, 35°

Bus connector 35° for PROFIBUS

Features

- Metalized housing
- No loosable parts
- Integrated terminating resistor
- 35° cable outlet
- Small housing
- Screw terminals

The 35° bus connector for PROFIBUS is a further component in our range of connectors providing you with low-cost, compatible alternatives for your automation.

The bus connectors are used to connect a PROFIBUS node to the PROFIBUS cable. The connector is quickly mounted and features integrated terminating resistors.

The Systeme Helmholz GmbH offers the bus connector with an 35° cable outlet and for transmission rates up to 12 Mbaud.

Ordering Data

	Order-No.
Bus connector for PROFIBUS	
35° cable outlet, without prog. device connector	700-972-0BA41
35° cable outlet, with prog. device connector	700-972-0BB41

The PROFIBUS connectors are also available in boxes containing 10 or 50 pieces.

Technical Data

Dimensions 35°, (LxWxH mm)	54 x 40 x 17
Weight	approx. 40 g
Outgoing cable, 35°	angled outgoing cable
Outgoing cable axial	axial outgoing cable, suitable for fast-connect stripping tool
Terminating resistor	Resistor combination integrated and connectable with slide switch
Transmission rate max.	12 Mbit/s
Interfaces PROFIBUS station	SUB-D connector, 9-way
PROFIBUS cable	4 terminals for wires up to 1.0 mm²
Current consumption	DC 4.75 ... 5.25 V (must come from connected equip.)
Permissible ambient conditions	
- operating temperature	0°C ... +60°C
- transport/storage temperature	-25°C ... +75°C
- relative humidity max.	75% at +25°C
Degree of protection	IP 40

Bus Connectors for PROFIBUS axial

Axial bus connectors for PROFIBUS

Features

- Metalized housing
- Integrated terminating resistor
- No loosable parts
- 180° cable outlet
- Screw terminals

The axial bus connector for PROFIBUS is a further component in our range of connectors providing you with low-cost, compatible alternatives for your automation.

The bus connectors are used to connect a PROFIBUS node to the PROFIBUS cable. The connector is quickly mounted and features integrated terminating resistors.

The Systeme Helmholz GmbH offers the bus connector with an axial cable outlet and for transmission rates up to 12 Mbaud.

Ordering Data

	Order-No.
Bus connector for PROFIBUS axial cable outlet	700-972-0CA12

The PROFIBUS connectors are also available in boxes containing 10 or 50 pieces.

Technical Data

Dimensions axial, (LxWxH mm)	68 x 39,5 x 17
Weight	approx. 40 g
Outgoing cable, 35°	angled outgoing cable
Outgoing cable axial	axial outgoing cable, suitable for fast-connect stripping tool
Terminating resistor	Resistor combination integrated and connectable with slide switch
Transmission rate max.	12 Mbit/s
Interfaces PROFIBUS station	SUB-D connector, 9-way
PROFIBUS cable	4 terminals for wires up to 1.0 mm²
Current consumption	4.75 ... 5.25 V DC (must come from connected equip.)
Permissible ambient conditions	
- operating temperature	0°C ... +60°C
- transport/storage temperature	-25°C ... +75°C
- relative humidity max.	75% at +25°C
Degree of protection	IP 40

Bus Connector for PROFIBUS with „Atex“ accreditation

Bus connector for PROFIBUS with Atex accreditation

Features

- Metalized housing
- No loosable parts
- Integrated terminating resistor
- 90° cable outlet
- Atex-accreditation (EN 50021 : 1999)
- Screw terminals

The bus connectors are used to connect a PROFIBUS station to the PROFIBUS cable. The connector is quickly mounted and has integrated, connectable terminating resistors.

The Systeme Helmholz GmbH offers the busconnector for usage in explosion hazardous areas of zone 2 (explosive gasatmosphere appears seldom and for very short time).

The bus connector is plugged directly onto the PROFIBUS interface (SUB-D connector, 9-way) of the PROFIBUS stations. The PROFIBUS cables are connected using 4-way screw terminals. The cable can be prepared for connection using the fast-connect stripping tool from Siemens.
Using a slide switch, you can set whether the connector is to be used as a node or segment end. The switch can also be operated when the connector is installed. The setting can be clearly seen.

Ordering Data

	Order-No.
Bus connector for PROFIBUS without prog. device connector, Ex-Zone 2 with prog. device connector, Ex-Zone 2	700-973-0BA12 700-973-0BB12
Stripping tool for PROFIBUS	700-972-6AA00

Technical Data

Programming device connector Order No. 700-973-0BB12 Order No. 700-973-0BA12	**yes** **no**
Dimensions (LxWxH mm)	64 x 40 x 17
Weight	approx. 40 g
Outgoing cable	vertical outgoing cable suitable for fast-connect stripping tool
Terminating resistor	Resistor combination integrated and connectable with slide switch
Transmission rate max.	12 Mbit/s
Interfaces PROFIBUS station	SUB-D connector, 9-way
PROFIBUS cable	4 terminals for wires up to 1,0 mm²
Current consumption	4.75 ... 5.25 V DC (must come from connected equip.)
Current consumption max.	12.5 mA
Permissible ambient conditions - operating temperature - transport/storage temperature - relative humidity max.	 0°C ... +60°C -25°C ... +80°C 75% at +25°C
Degree of protection	IP 40

Bus Connectors for PROFIBUS with spring type terminals

Bus connector for PROFIBUS with spring type terminals

Features

- Metalized housing
- No loosable parts
- Integrated terminating resistor
- 90° cable outlet
- Spring type terminal

The bus connectors are used to connect a PROFIBUS station to the PROFIBUS cable. The connector is quickly mounted and has integrated, connectable terminating resistors.

The spring type terminal is suiteable for solid conductors up to a cross section of 0.5 mm². The stripped conductors contacts automatically when inserted, for breaking the connection the orange lever must be pressed.

The bus connector is plugged directly onto the PROFIBUS interface (SUB-D connector, 9-way) of the PROFIBUS stations. The PROFIBUS cables are connected using 4-way screw terminals. The cable can be prepared for connection using the fast-connect stripping tool from Siemens.
Using a slide switch, you can set whether the connector is to be used as a node or segment end. The switch can also be operated when the connector is installed. The setting can be clearly seen.

Ordering Data

	Order-No.
Bus connector for PROFIBUS	
without prog. device connector, with spring connection technique	700-982-0BA22
with prog. device connector, with spring connection technique	700-982-0BB22
Stripping tool for PROFIBUS	700-972-6AA00

Technical Data

Programming device connector Order No. 700-973-0BA22 Order No. 700-973-0BB22	 **no** **yes**
Dimensions (LxWxH mm)	65 x 48 x 16
Weight	approx. 40 g
Outgoing cable	vertical outgoing cable suitable for fast-connect stripping tool
Terminating resistor	Resistor combination integrated and connectable with slide switch
Transmission rate max.	12 Mbit/s
Interfaces PROFIBUS station	 SUB-D connector, 9-way
PROFIBUS cable	4 terminals for wires up to 0.5 mm²
Current consumption	DC 4.75 ... 5.25 V (must come from connected equip.)
Current consumption max.	12.5 mA
Permissible ambient conditions - operating temperature - transport/storage temperature - relative humidity max.	 0°C ... +60°C -25°C ... +80°C 75% at +25°C
Degree of protection	IP 40

Repeater for MPI and PROFIBUS; Active PROFIBUS Dropcable

Repeater for MPI and PROFIBUS

Transmission rate	max. Segment length
9,6 KBit/s	1000 m
19,2 KBit/s	1000 m
45,45 KBit/s	1000 m
93,75 KBit/s	1000 m
187,5 KBit/s	1000 m
500 KBit/s	400 m
1500 KBit/s	200 m
3000 KBit/s	100 m
6000 KBit/s	100 m
12000 KBit/s	100 m

The RS485 repeater connects two PROFIBUS or MPI bus segments in RS485 technology with max. 32 nodes, including repeaters. With it, transmission rates of 9.6 Kbps to 12 Mbps are possible.

The transmission signals are regenerated and retransmitted by the repeater.

The repeater can therefore be used to implement long PROFIBUS segments.

Commissioning aids:

- Switch for disconnecting segments
- Display of bus activity
- Disconnection of a segment if terminating resistor has been wrongly connected
- Terminating resistor for every segment
- Error display on bus
- Switch for disconnecting repeater functions

Technical Data

Dimensions (LxWxH mm)	115 x 110 x 35
Weight	approx. 240 g
Power supply Voltage Current consumption max. Segment connection	 DC 24 V 120 mA at 24 V 4x 2 terminal block
Interface	PG/OP
PROFIBUS interface Transmission rate max.	 12 Mbit/s autodetection
Protocol	PROFIBUS DP to EN 50 170
Connection	connection, SUB-D, 9-way
Permissible ambient temperature - operating - transport and storage	 0°C ... +60°C -25°C ... +75°C
Degree of protection	IP 20

Ordering Data

	Order-No.
MPI-/PROFIBUS-Repeater	**700-972-0AA02**

Dropcable PROFIBUS for PG

Active PROFIBUS Dropcable for PG

The active PROFIBUS dropcable from the Systeme Helmholz GmbH is used for a failure-free connection of a programming device to an existing PROFIBUS net.

The active line is not a radial line because of it`s integrated electronic.

Ordering Data

	Order-No.
Dropcable PROFIBUS for PG, 3 m	**700-901-4BD00**

Terminal Block for MPI and PROFIBUS

Terminal block for MPI/PROFIBUS in a metal housing

The MPI/PROFIBUS terminal block allows connection of up to two devices to an MPI or PROFIBUS network.

Two 9-way SUB-D connectors are located in the housing of the MPI/PROFIBUS terminal block.

The PROFIBUS segments can be disconnected by a switch. This action connects a terminating resistor combination.

5 V and 24 V is available at both connectors for supplying MPI and PROFIBUS devices (e.g. SSW7 or operator terminals).

The MPI/PROFIBUS multiplexer can be mounted directly onto a DIN rail.

Ordering Data

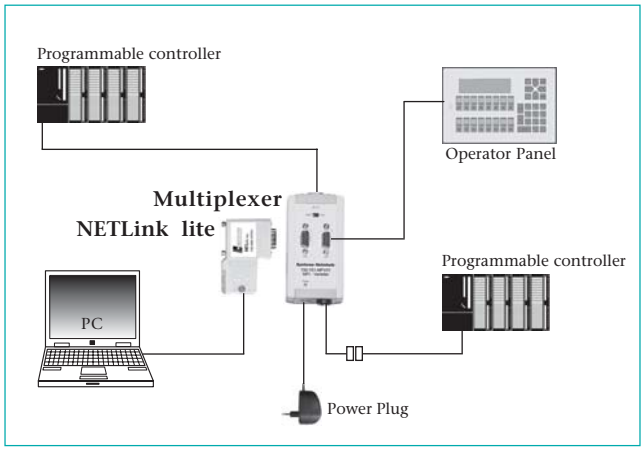
	Order-No.
Terminal block for MPI/PROFIBUS, in a metal housing	**700-751-MPV20**

Technical Data

Dimensions (LxWxH mm)		115 x 110 x 35
Weight		approx. 230 g
Power supply		
Voltage		DC 24 V
Current consumption	max.	200 mA at 24 V
PROFIBUS interface		
Transmission	max.	12 Mbit/s
Connection		2x female, SUB-D 9-way 4x 2 terminal
Perm. ambient temperature		
- operating		0°C ... +60°C
- transport and storage		-25°C ... +75°C
Degree of protection		IP 20

Multiplexer for MPI and PROFIBUS

Multiplexer for MPI-/PROFIBUS



Application example for MPI Multiplexer

The MPI/PROFIBUS multiplexer permits connection of up to 3 devices to one MPI or PROFIBUS network.

The MPI/PROFIBUS multiplexer has a 1.2 m long connecting cable that can be plugged directly into the MPI/PROFIBUS socket of the PLC, but also at any position in a MPI or PROFIBUS network.

The “PG” socket is the only socket that has the full MPI pin assignment. That makes it possible to use “direct operation” on this socket via an MPI adapter (“SSW 7” or “PC adapter”) with programming software.

This pin assignment is not relevant for operation of PROFIBUS devices.

The MPI/PROFIBUS multiplexer is powered via the connection line to the CPU. If the terminal does not provide 24 V, it is possible to draw the 24 V from an external source. The 24 V connector for this purpose (green connector) is polarized.

Ordering Data

	Order-No.
Multiplexer for MPI/PROFIBUS	**700-751-MPV01**
Power Plug (optional)	**700-751-SNT01**

Technical Data

Dimensions (LxWxH mm)	105 x 54 x 30
Weight	approx. 135 g
Power supply	
Voltage	DC 24 V
Current consumption max.	200 mA at 24 V
PROFIBUS interface	
Transmission max.	12 Mbit/s
Connection	3x female, SUB-D, 9-way
Perm. ambient temperature	
- operating	0°C ... +60°C
- transport and storage	-25°C ... +75°C
Degree of protection	IP 20

NETLink® PRO, Ethernet Gateway for MPI/PROFIBUS

NETLink® PRO, Ethernet Gateway

Features

- MPI/PROFIBUS up to 12 Mbps, autobaud
- 12 links on MPI/PROFIBUS
- 6 links on TCP
- Power supply from the CPU
- External 24 V power source possible
- With programming device connector (PG) as standard
- DHCP, Web configuration
- RJ45 jack for connecting the TCP cable
- Support of all common Simatic[1] Engineering Tools
- TCP/IP 10/100 Mbps
- ISO on TCP (RFC 1006)

NETLink PRO

PROFIBUS

- **Programming & configuring via Ethernet**
- **Visualization via Ethernet**
- **Teleservice via Internet**

The new NETLink® PRO for programming, configuring and visualization of programmable controllers from Siemens is plugged directly into the CPU of the programmable controller via its 1.2 m connecting cable. The connecting cable is an active cable and therefore does not influence the MPI/PROFIBUS. The second programmer (PG) jack enables connection of a further device to the CPU of the programmable controller.

The new NETLink® PRO can optionally also be powered from an external 24 V DC power source.

At the controller end, the NETLink® PRO permits the full transmission rate of 12 Mbps via MPI and PROFIBUS. The transmission rate of the TCP network of 10 Mbps or 100 Mbps is automatically detected by the device. At the MPI end, the NETLink® PRO enables 12 simultaneous links. Moreover, the new NETLink® PRO features automatic baudrate detection and flexible configuration, such as DHCP and a Web interface.

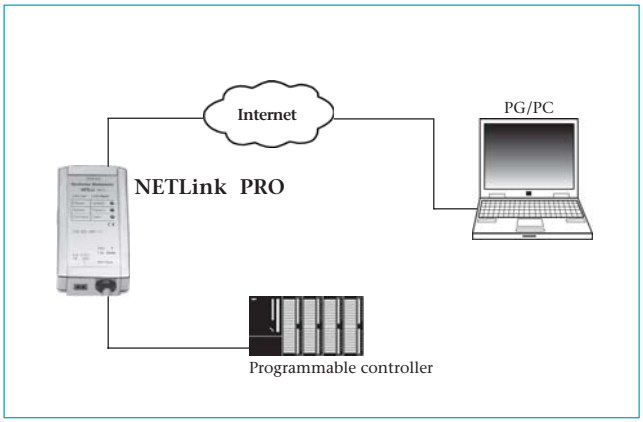
An Ethernet jack instead of a permanently affixed Ethernet cable permits flexible connection.

The 3 m Ethernet connecting cable (straight) is provided with the NETLink® PRO.

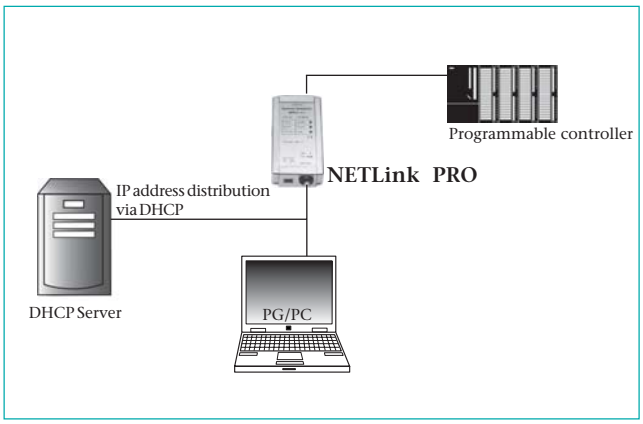
The MPI/PROFIBUS is electrically isolated from the external 24 V DC power source and from the Ethernet interface (functional separation).

New is the support for RFC 1006 protocol (ISO on TCP).

The firmware is always updateable to the newest volume with the included update-program SHTools.



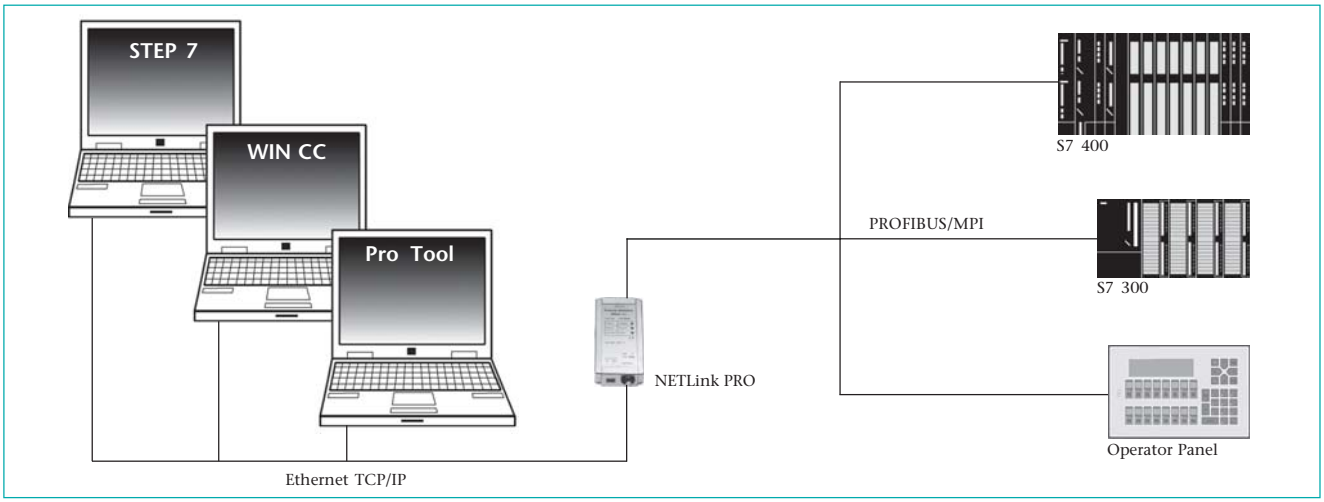
Application for NETLink® PRO in a WAN for example via dial inn router



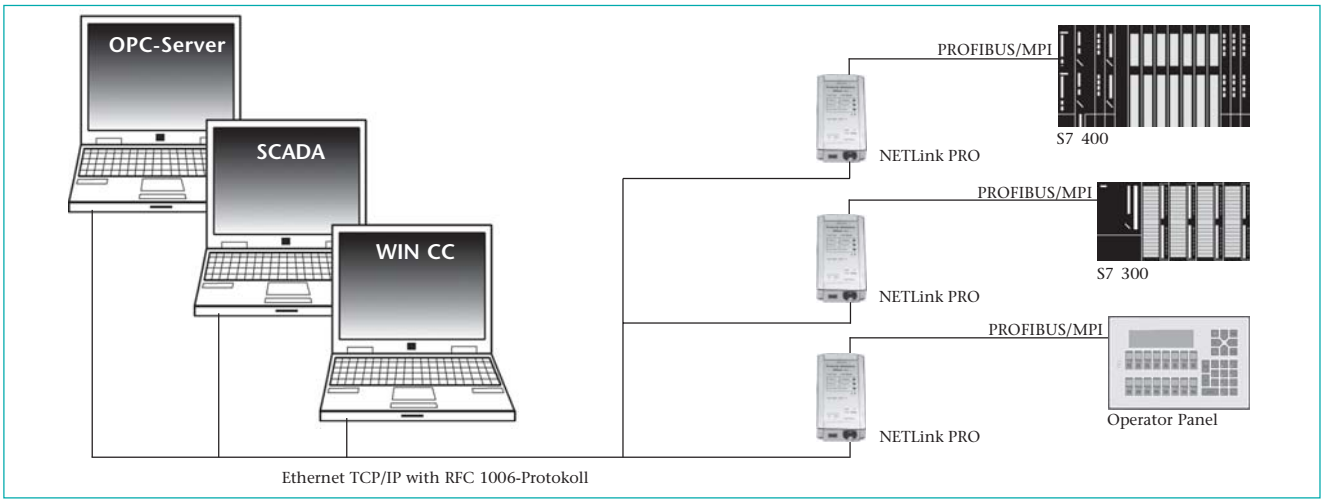
Application for NETLink® PRO in a LAN for example address distribution via DHCP

1) Simatic is a registered trademark of Siemens AG

NETLink® PRO, Ethernet Gateway for MPI/PROFIBUS



Application example for programming and projecting with Siemens-Software



Application example for RFC 1006 (ISO on TCP)

Technical Data

Dimensions (LxWxH mm)		105 x 54 x 30
Weight		approx. 250 g
Power Supply		
Voltage		DC +24 V ±25 %
Current consumption	max.	150 mA
Communication interface		
Type		10 Base-T/100 Base-TX
Connector		RJ45
Transmission rate		10/100 MBit/s, autodetection
MPI/PROFIBUS		
Type		RS485
Transmission rate	max.	12 MBit/s
Connector		SUB-D, 9-way with PG interface and terminating resistor
Protocols		FDL frames
Operating temperature		0°C...60°C
Indicators		3 LEDs, therefrom 2 two coloured
Degree of protection		IP 20

Ordering Data

	Order-No.
NETLink® PRO (incl. 3 m Ethernet cable)	**700-881-MPI11**
Crossover-adapter	**700-880-CROSS**
DIN rail adapter short	**700-751-HSH01**
Power Plug (optional)	**700-751-SNT01**

NETLink® USB, Highspeed USB Gateway for MPI/PROFIBUS

NETLink® USB, Highspeed USB Gateway

Features

- MPI/PROFIBUS up to 12 Mbps, autobaud
- USB 2.0 up to 480 Mbps
- 12 links on MPI/PROFIBUS
- Power supply via USB
- External 24 V power source possible
- With programming device connector (PG) as standard
- Support for all common Simatic[1)] Engineering Tools

● Programming and configuration via USB

● Visualization via USB

The new NETLink® USB is an alternative to a PROFIBUS-PCMCIA plug-in card.

Its 1.2 m connecting cable is plugged directly into the CPU of the programmable controller. The connecting cable is an active cable and therefore does not influence the MPI/PROFIBUS. The second programmer (PG) jack enables connection of a further device to the CPU of the programmable controller.

The NETLink® USB permits conversion of a USB interface to MPI/PROFIBUS for programming or visualization with the full transmission rate of up to 12 Mbps. Furthermore, 12 simultaneous links can be established.

The new NETLink® USB is powered from the USB bus, but also features an optional 24 V DC power supply and automatic baudrate detection. At the USB end, the protocols Fullspeed (12 Mbps) and Highspeed (480 Mbps) are supported.

The MPI/PROFIBUS is electrically isolated from the external 24 V DC power source and from the USB interface (functional separation).

A 3-m high-speed USB cable is included with the NETLink® USB.

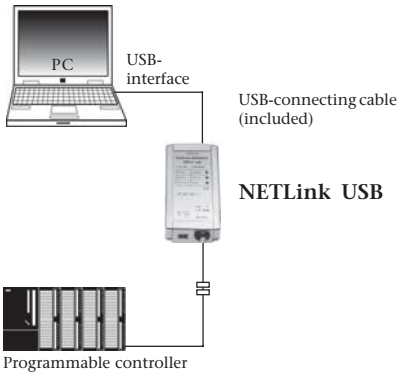
The firmware is always updateable to the newest volume with the included update-program SHTools.

Ordering Data

	Order-No.
NETLink® USB (incl. 3m USB cable)	**700-890-MPI11**
DIN rail adapter short Power Plug (optional)	**700-751-HSH01** **700-751-SNT01**

1) Simatic is a registered trademark of Siemens AG

NETLink USB



Application for NETLink® USB

Technical Data

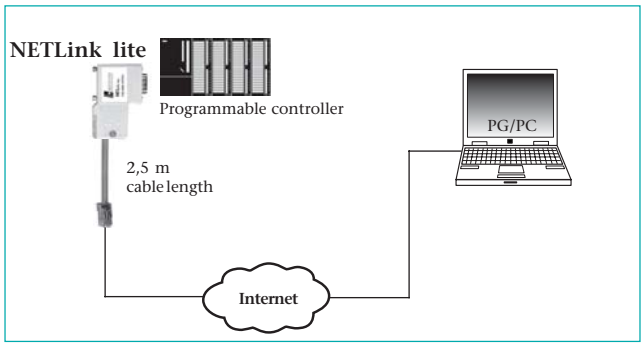
Dimensions (LxWxH mm)		105 x 54 x 30
Weight		approx. 250 g
Power Supply		
Voltage		DC 24 V ±25 % / DC 5 V USB
Current consumption	max. max.	150 mA at DC 24 V / 500 mA at DC 5 V USB
Communication interface		
Type		USB 2.0
Connector		USB-A
Transmission rate		12 MBit / 480 MBit
MPI/PROFIBUS		
Type		RS485
Transmission rate	max.	12 MBit/s
Connector		SUB-D, 9-way with PG interface and terminating resistor
Protocols		FDL frames
Operating temperature		0°C...60°C
Indicators		3 LEDs, therefrom 2 two coloured
Degree of protection		IP 20

NETLink® lite, Ethernet-Gateway for MPI/PROFIBUS

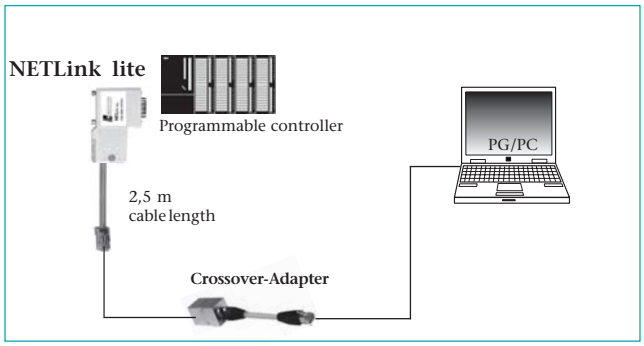
NETLink® lite, Ethernet-Gateway for MPI/PROFIBUS

Features

- MPI/PROFIBUS up to 12 MBit/s
- 4 links to MPI/PROFIBUS
- 2 links to TCP
- Power supply from PLC
- Support of all common Simatic[1)] Engineering Tools
- TCP/IP 10/100 MBit/s



Application for the NETLink® lite in a WAN for example via dial in router



Application for the NETLink® lite (with crossover adapter) for direct connection to your Network card

● Programming and configuration

● Teleservice

Installed in a SUB-D shell, it contains a complete field bus participant with a 10/100 Mbps Ethernet interface.

It is connected directly to the field bus connector of a automation device and connects it to the next switch or hub via a Ethernet cable.

The NETLink® lite can be used both in an MPI and in a PROFIBUS network.

The 24 volt power supply is drawn via the MPI/PROFIBUS connection.

The driver supplied, links the NETLink® lite into the programming software. All programming functions are available.

The crossover adapter permits direct connection of the NETLink® lite to a laptop or PC without a hub or switch.

The NETLink® PRO is used for permanent installations for example visualizations and operating data record.

NETLink lite

PROFIBUS

Ordering Data	
	Order-No.
NETLink® lite with S7-Switch	**700-880-MPI01**
Crossover-adapter	**700-880-CROSS**

Technical Data	
Dimensions (LxWxH mm)	65 x 48 x 16
Weight	approx. 150 g (incl. cable and connector)
Power supply	
Voltage	DC 24 V
Current consumption	70 mA
Communication Interface: Ethernet Connection	
Type: Standard	10 Base-T 100 Base-TX
Connector	RJ45
Transmission rate	10/100 MBit/s autodetection
MPI	
Transmission rate max.	12 MBit/s
Data link	FDL frames
Operating temperature	0°C to 55°C
Indicators	2 LEDs, one of them 2-coloured, communication status
Degree of protection	IP 20

OPC-Server

Fast access to S7- and S5 data

The S7/S5 OPC server allows you fast and easy access to process data in WinAC, S7-200, S7-300, S7-400, C7- and S5 controllers. Addressing of the variables can be performed completely in STEP7 semantics and can, if required, be imported directly from an Excel file or a STEP7 project.

With each OPC-compliant client application, you can read or write all input/output data, data blocks, flags, timers and counters in the S7-/S5 controllers. You can also access up to 256 controllers at one time.

The control program does not have to be adapted for communication with the S7/S5 OPC server. No detailed knowledge of the PLC program that is running is necessary.

New functions and expansions

On the S7-300 and S7-400, the DATE_AND_TIME and ASCII strings are supported as additional data formats.

OPC Client Controls are now contained in the scope of supply of the S7/S5 OPC server as ActiveX components.

The S5 syntax for creating items can now be used. Access to array elements has been improved.

Integrated Web server

The S7/S5 OPC server features an integrated Web server. This is used for diagnosing the OPC server and for providing its own Web pages for operating and monitoring using any standard browser.

The architecture and performance of the Web server is designed for small visualization systems.

Flexible connection

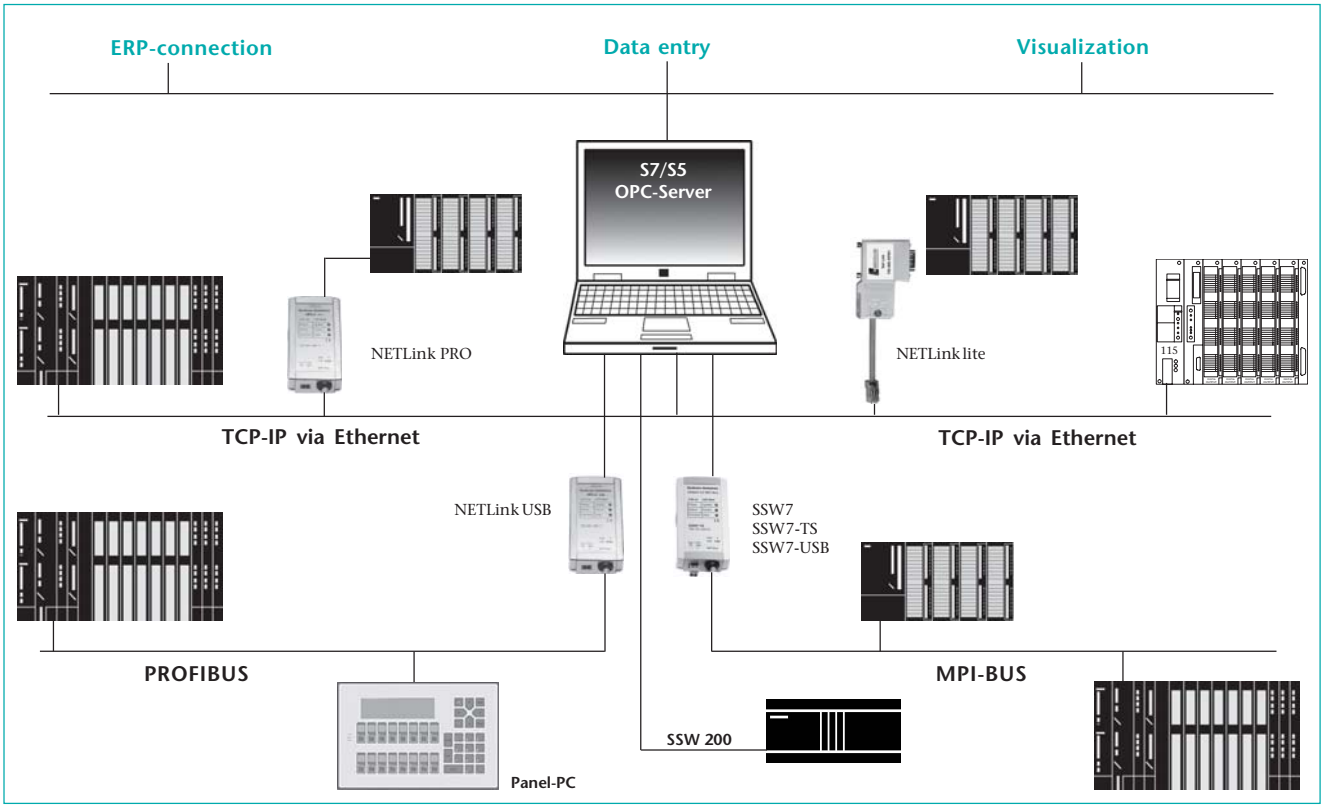
There are many ways of connecting the controllers to the S7/S5 OPC server such as TCP/IP, PROFIBUS, MPI, PPI or AS511.

For communication, Systeme Helmholz GmbH provides the following devices:

- SSW7, SSW7-TS, SSW7-USB for MPI
- NETLink PRO, NETLink USB, NETLink lite for MPI and PROFIBUS
- SSW3 and SSW4 for AS511

Also a selection of communication modules of other manufactures, such as CP243, CP343, and CP443 from Siemens are supported.

The current OPC server version and further technical information is available for downloading at www.helmholz.de.



Ordering Data

	Order-No.
S7-OPC-Server (Single licence)	800-880-OPC10
S7-OPC-Server with USB-Dongle	800-880-OPC20

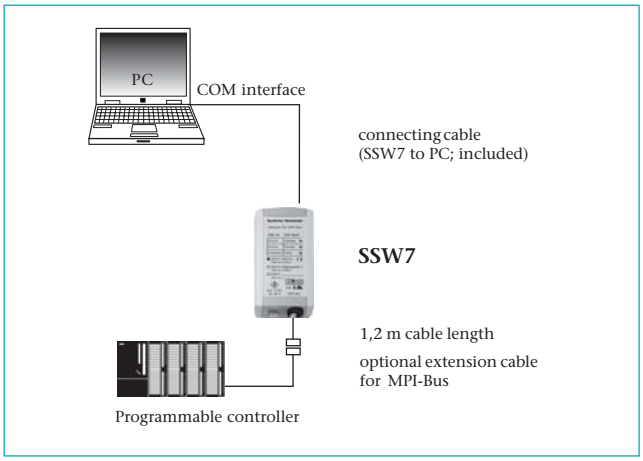
MPI-Bus

SSW7, MPI-Programming Adapter

SSW7

Features

- Programming and visualization
- Transmission rate up to 115 Kbaud
- MPI up to 187,5 Kbit/s
- Power supply via programming device or via external 24 V supply



Application for SSW7

The SSW7 permits connection of a PC or laptop with programming software to programmable controllers via any standard COM port.

The RS232 interface of the SSW7 has automatic baudrate detection for adaptation to the set baudrate (between 9.6 to 115 Kbaud). The MPI interface operates with 187.5 Kbit/s or 19.2 Kbit/s.

The SSW7 receives it`s voltage supply from the CPU via the MPI bus. With an optional 24 V connection, it can be used anywhere else in the system.

With the included speed-up tool you can attain the max. transmission rate of the SSW7 with every programming software.

Accessory-Note

DIN rail clips, extension cables (see page 50) as well as multiplexers (see page 38ff) are available for the SSW7.

The firmware is always updateable to the newest volume with the included update-program SHTools.

Ordering Data

	Order-No.
MPI-Adapter **SSW7** (incl. 3 m programming cable)	**700-751-1VK21**
DIN rail adapter short Power Plug (optional)	**700-751-HSH01** **700-751-SNT01**

Technical Data

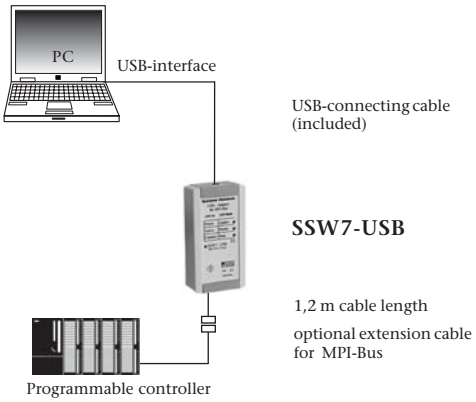
SSW7	
Dimensions (LxWxH mm)	105 x 54 x 30
Weight	approx. 180g
Supply voltage	+24 V ±25 % from PLC or extern
Current consumption	approx. 70 mA
MPI interface Type	 RS485
Transmission rate	19.2 or 187.5 Kbit/s
Cable connector	SUB-D 9-way
Communication interface Type	 RS232
Transmission type	serial asynchronous
Transmission rate	9.6...115 Kbaud
Parity	odd
Data format	8 bit
Protocols	PC <-> S7
Connection	connector, SUB-D, 9-way
Degree of protection	IP 20

SSW7-USB, MPI-Programming Adapter USB

SSW7-USB

Features

- Programming and visualization
- Transmission rate up to 115 Kbaud
- MPI up to 187,5 Kbit/s
- Virtual COM-port for flexible applications



Application for SSW7-USB

The SSW7-USB permits conversion from a USB interface to the MPI bus for programming software or visualization.

The SSW7 has a 1.2 m long MPI connecting cable, which can be directly plugged into the CPU socket of the programmable controller or at any other point in the MPI network.

The housing of the SSW7-USB contains a type „B“ USB socket. The SSW7-USB can be connected to the PC via the USB cable supplied. The SSW7-USB is powered from the PC. The SSW7-USB can therefore be used at any point in the MPI bus.

A driver for creating a virtual com-port is included.

Accessory-Note

DIN rail clips, extension cables (see page 50) as well as multiplexers (see page 38ff) are available for the SSW7-USB.

The firmware is always updateable to the newest volume with the included update-program SHTools.

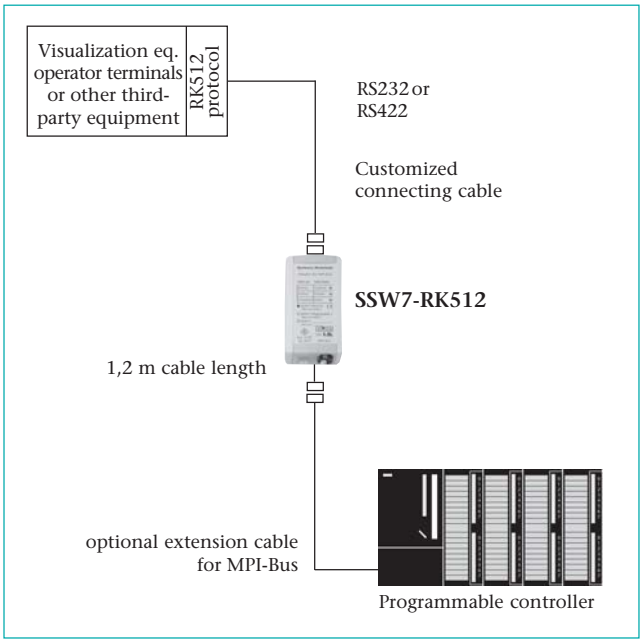
Technical Data

SSW7-USB	
Dimensions (LxWxH mm)	105 x 54 x 30
Weight	approx. 180g
Supply voltage	5 V via USB
Current consumption	approx. 200 mA
MPI interface Type	 RS485
Transmission rate	19.2 or 187.5 Kbit/s
Cable connector	SUB-D, 9-way
Communication interface Type	 USB 1.1
Protocols	PC <-> S7
Connection	USB-A female
Degree of protection	IP 20

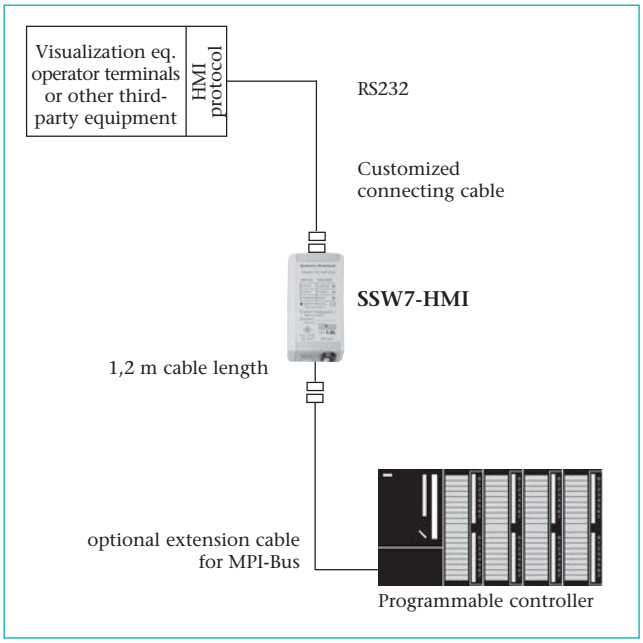
Ordering Data

	Order-No.
MPI-Adapter **SSW7-USB** (incl. 3 m USB cable)	 **700-755-1VK21**
DIN rail adapter short	**700-751-HSH01**

SSW7-RK512, SSW7-HMI, MPI-Adapter with RK512/HMI Protocol



SSW7-RK512



SSW7-HMI

SSW7-RK512

With the SSW7-RK512 you can connect any operator terminals, visualization equipment, or other third-party equipment to the S7 if they support the RK512 protocol without adapting the software.

The SSW7-RK512 transmits data blocks, flags, inputs and outputs.

The MPI settings of the SSW7-RK512 can be changed with a parameterization program or with special RK512 frames in order to connect several SSW7-RK512s or several PLCs to an MPI bus.

The RS232 interface of the SSW7-RK512 has automatic baudrate detection for adapting itself to the connected device (between 9.6 and 115 Kbaud). The MPI interface operates with 187.5 Kbit/s.

The voltage supply for the SSW7-RK512 is taken from the CPU via the MPI bus. With an optional 24 V connection it can be operated anywhere else in the system.

We supply the SSW7-RK512 with an additional programming interface on the connector including switchable terminating resistor.

Accessory-Note

DIN rail clips, extension cables (see page 50) as well as multiplexers (see page 38ff) are available for the SSW7-RK512 and the SSW7-HMI.

SSW7-HMI

The SSW7-HMI is intended for use with operator terminals, visualization equipment, or other third-party equipment that supports the Siemens HMI protocol.

The baudrate of the adapter is set by the protocol (between 9.6 and 115 Kbaud).

The voltage supply for the SSW7-HMI is taken from the CPU via the MPI bus. With an optional 24 V connection it can be operated anywhere else in the system.

We supply the SSW7-HMI with an additional programming interface on the connector including switchable terminating resistor.

Ordering Data

	Order-No.
MPI-Adapter	
SSW7-RK512	**700-751-5VK21**
SSW7-RK512 with RS422 interface	**700-752-5VK21**
DIN rail adapter short	**700-751-HSH01**
Power Plug (optional)	**700-751-SNT01**

Ordering Data

	Order-No.
MPI-Adapter	
SSW7-HMI	**700-751-9VK11**
DIN rail adapter short	**700-751-HSH01**
Power Plug (optional)	**700-751-SNT01**

SSW7-RK512, SSW7-HMI, MPI-Adapter with RK512/HMI Protocol

Technical Data

	SSW7-HMI	SSW7-RK512	SSW7-RK512 with RS422
Dimensions (LxWxH mm)	105 x 54 x 30	105 x 54 x 30	105 x 54 x 30
Weight	approx. 180g	approx. 180g	approx. 180g
Supply voltage (from AG or current supply)	+24 V ±25 %	+24 V ±25 %	+24 V ±25 %
Current consumption	approx. 70 mA	approx. 70 mA	approx. 70 mA
MPI interface Type	RS485	RS485	RS485
Transmission rate	19.2 or 187.5 Kbit/s	187.5 Kbit/s	187.5 Kbit/s
Cable connector	SUB-D, 9-way with PG interface and terminating resistor	SUB-D, 9-way with PG interface and terminating resistor	SUB-D, 9-way with PG interface and terminating resistor
Communication interface Type	RS232	RS232	RS422
Transmission type	serial asynchronous	serial asynchronous	serial asynchronous
Transmission rate	4.8...115 Kbaud	9.6...115 Kbaud	9.6...115 Kbaud
Parity	odd	even	even
Data format	8 bit	8 bit	8 bit
Protocols	HMI	RK512 with 3964/R	RK512 with 3964/R
Connection	connector, SUB-D, 9-way	connector, SUB-D, 9-way	connector SUB-D, 9-way
Degree of protection	IP 20	IP 20	IP 20

MPI-Accessory, SSW200

DIN rail adapter

For all SSW7- and NETLink PRO/USB adapter, we provide DIN rail adapters as an accessory.

The MPI adapters can be installed in a bigger distance with the MPI extension cable.

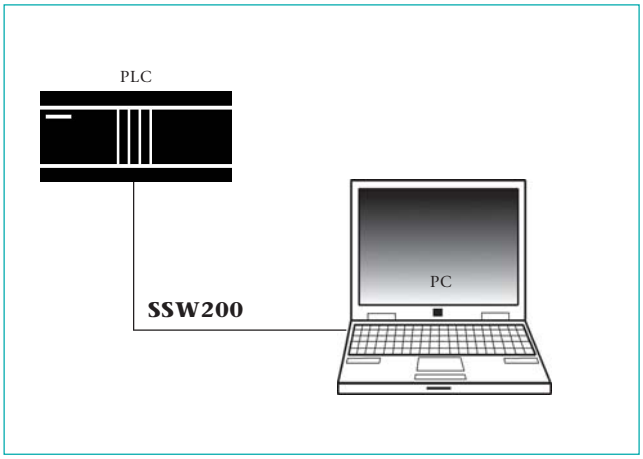
The cable also carries the power supply for the MPI adapter.

Ordering Data

	Order-No.
MPI-Accessory	
DIN rail adapter, short (for SSW7, SSW7-TS, SSW7-USB, NETLink PRO, NETLink USB)	**700-751-HSH01**
DIN rail adapter, long (only for SSW7-TS with Modem + ISDN + GSM)	**700-751-HSH10**
Extension cable	
Extension cable MPI bus, 5 m	**700-751-6VK11**
Extension cable MPI bus, 10 m	**700-751-6VK21**
Extension cable MPI bus, special lengths	**700-751-6SO11**

SSW200

With the SSW200 it is possible to connect a PC with suitable programming software to a S7-200[1)] via any standard COM port. You can set the transmission rate to match your PC with a selector switch.



Ordering Data

	Order-No.
SSW200 for connecting PC to a CPU, 3 m	**700-751-2VK11**

1) S7-200® is a registered trademark of Siemens AG

Technical Data

PPI interface	
Type	RS485
Transmission rate (depending on switch position)	1200, 2400, 9600, 19200, 38400 Kbit/s
Connectors	SUB-D 9-way
Communication interface	
Type	RS232
Transmission mode	serial asynchron
Transmission rate (depending on switch position)	1200, 2400, 9600, 19200, 38400 Kbaud
Female connector	SUB-D, 9-way

Teleservice

SSW7-TS

SSW7-TS

The SSW7-TS permits teleservice of a system via the telephone line. Commercially available modems can be used for this task.

The SSW7-TS has automatic baudrate detection at the RS232 interface with which it can adapt itself to the PC or the modem (between 9.6 and 115 Kbaud). The MPI interface operates at 187.5 Kbit/s or with 19.2 Kbit/s.

The PC must be installed with the teleservice module for the programming software so that the SSW7-TS can be parameterized if necessary, and the modem connection maintained. Without modems or the teleservice module the SSW7-TS can be operated at the machine as a SSW7.

The voltage supply for the SSW7-TS is taken from the CPU via the MPI bus. With an optional 24 V connection it can be operated anywhere else in the system.

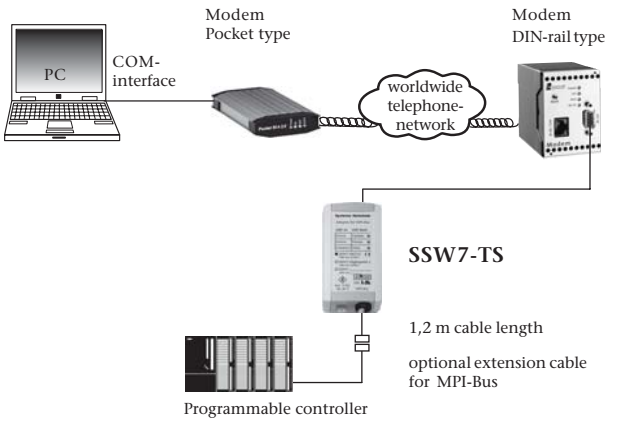
We supply the SSW7-TS with an additional programming interface on the connector including switchable terminating resistor. The necessary SHTools software is provided.

Accessory-Note

DIN rail clips, extension cables (see page 50) as well as multiplexers (see page 38ff) are available for the SSW7-TS.

Features

- Teleservice via modem (analog, ISDN, GSM)
- Usable with Hayes compatible modems
- Password
- Re-Call function
- Online update function
- In-situ use as programming adapter



Application for SSW7-TS

Technical Data

SSW7-TS	
Dimensions (LxWxH mm)	105 x 54 x 30
Weight	approx. 180g
Supply voltage	+24 V ±25 % from PLC or extern
Current consumption	approx. 70 mA
MPI interface Type	 RS485
Transmission rate	19.2 or 187.5 Kbit/s
Cable connector	SUB-D, 9-way with PG interface and terminating resistor
Communication interface Type	 RS232
Transmission type	serial asynchronous
Transmission rate	9.6...115 Kbaud
Parity	odd
Data format	8 bit
Protocols	PC <-> S7 via modem or local
Connection	connector, SUB-D, 9-way
Degree of protection	IP 20

Ordering Data

	Order-No.
MPI-Adapter SSW7-TS	**700-751-8VK21**
DIN rail adapter short Power Plug (optional)	**700-751-HSH01** **700-751-SNT01**

SSW7-TS with integrated Modem; analog/ISDN

SSW7-TS with integrated modem; analog/ISDN

With the SSW7-TS with modem, teleservice of a system can be performed via the MPI bus.

An analog 56k modem prepared for use in more than 90 countries is integrated into the housing of the SSW7-TS. The ISDN modem supports the European DSS1 protocol.

The 9-way SUB D connector can be connected for parameterization or for in-situ use as a PC adapter.

The built-in modem can also be used directly on the serial interface.

The SSW7-TS with modem receives its power supply from the CPU via the MPI cable. If no 24V supply is available at the connection point, it is possible to feed in an external 24 V power supply.

The SSW7-TS with modem can also be provided with a new operating system via a modem link. That enables functional expansion of an adapter already installed in the system. The necessary SHTools software is provided.

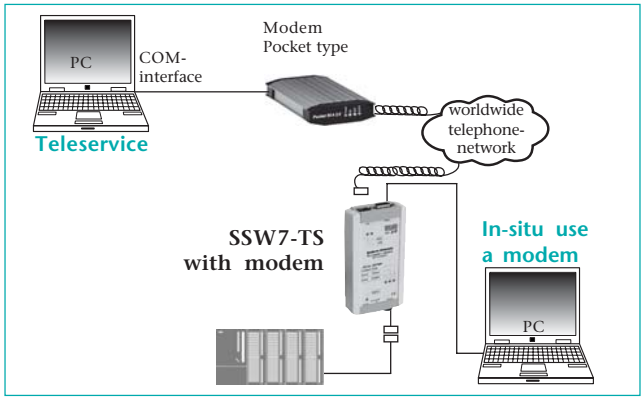
Ordering Data

	Order-No.
MPI-Adapter	
SSW7-TS with modem analog[1] (incl. DIN rail adapter; 2x telephone cable RJ11 + TAE, each 3 m; 3 m programming cable)	700-751-8MD21
SSW7-TS with modem ISDN[1] (incl. DIN rail adapter; RJ11 telephone cable, 3 m; 3 m programming cable)	700-751-8IS21
Power Plug (optional)	700-751-SNT01

1) Export restriction for:
AF, AO, IQ, IR, KP, LB, LY, MZ, RW, SD, SY State: 08-2006

Features

- Teleservice
- List of countries with more than 90 destination countries
- Password protection
- Re-Call function
- Online update function
- In-situ use as programming adapter



Applications

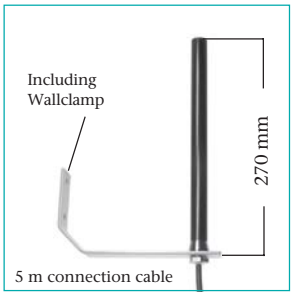
The analog/ISDN modem can be used for teleservicing a VISU/SCADA application even without a TS function. Settings are made using microswitches on the adapter housing.

Technical Data

SSW7-TS with modem	
Dimensions (LxWxH mm)	130 x 68 x 30
Weight	approx. 220g
Supply voltage	+24 V ±25 % from PLC or extern
Current consumption	approx. 110 mA
MPI interface Type	RS485
Transmission rate	19.2 or 187.5 Kbit/s
Cable connector	SUB-D, 9-way with PG interface and terminating resistor
Communication interface Type	RS232, 2-wire dial-up (analog), ISDN So
Transmission type	serial asynchronous
Transmission rate	9.6...115 Kbaud
Parity	-
Data format	8 bit
Protocols	PC <-> S7 via modem or local
Connection	connector, SUB-D, 9-way and RJ11
Degree of protection	IP 20

SSW7-TS with integrated GSM-Modem

SSW7-TS with integrated GSM-Modem



Static triband antenna for wall mounting (in- and outside)

Quadband magnetical antenna

Patch triband antenna for wall mounting (in- and outside)

Portable quadband antenna with knuckle for mobile use

With the SSW7-TS with GSM modem, teleservice of a system can be performed via the MPI bus.

A Quadband GSM modem is integrated into the housing of the SSW7-TS.

The 9-way SUB-D connector can be connected for parameterization or for in-situ use as a PC adapter.

The SSW7-TS with GSM-modem receives its power from the CPU via the MPI cable. If 24 V are not available at the point of connection or if several MPI adapters are connected to a CPU at the same time, 24 V can be supplied from an external source.

The SSW7-TS with GSM-Modem can also be updated with a new firmware via modem. Like that, a function extension is also possible with an adapter already integrated in an application. The update Software SHTools is included.

The GSM-modem can be used for teleservice the VISU/ SCADA without MPI interface, by setting the “in-situ“ option on the SSW7-TS with GSM-modem.

A DIN rail adapter for DIN rail mounting is also included.

Ordering Data

	Order-No.
MPI-Adapter **SSW7-TS with modem GSM**[1)] (incl. DIN rail adapter; 3 m programming cable)	700-751-8IS21
Local triband antenna Quadband magnetical-antenna Patch triband antenna Portable quadband antenna	700-751-ANT01 700-751-ANT02 700-751-ANT03 700-751-ANT04
Power Plug (optional)	700-751-SNT01
GSM antenna extension cable, 5 m GSM antenna extension cable, 10 m GSM antenna extension cable, 15 m	700-751-ANK01 700-751-ANK02 700-751-ANK03

1) Export restriction for:
AF, AO, IQ, IR, KP, LB, LY, MZ, RW, SD, SY State: 08-2006

Note

The SIM-card needed for the modem is available at every mobile service provider. The card must be data transfer capable.

Technical Data

SSW7-TS with GSM modem	
Dimensions (LxWxH mm)	130 x 68 x 30
Weight	approx. 220g
Supply voltage	+24 V ±25 % from PLC or extern
Current consumption	approx. 180 mA
MPI interface Type	 RS485
Transmission rate	19.2 or 187.5 Kbit/s
Cable connector	SUB-D, 9-way with PG interface and terminating resistor
GSM-Frequency	Quadband: GSM850, EGSM900, DCS1800, PCS1900
Trandmit power	Class 4 (2W) for GSM850/EGSM900 Class 1 (1W) for DCS1800/PCS1900
Communication interface Type	 RS232
Transmission type	serial asynchronous
Transmission rate	300...115 Kbaud
Protocols	PC <-> S7 via modem or local, transparent via modem
Connection	connector, SUB-D, 9-way
Degree of protection	IP 20

TS 300, Teleservicemodule for the PLC Rack

TS300, Teleservicemodule for the PLC-Rack

Features

- TS adapter in the S7 rack for Teleservice
- Communication via the backplane bus or externally
- List of countries with more than 90 destination countries (analog)
- Analog, ISDN, GSM (available soon)
- USB interface for parameterization or in-situ use
- Password
- Re-Call function
- Online update function
- Alert functions and switch outputs usable via back plane bus (soon available; analog/ISDN)
- Mode change via Teleservice (available soon)

With the TS 300, teleservice of a system can be performed via the MPI bus.

The TS 300 has a single-width S7-300 housing for mounting on the sectional rail. An analog 56k modem prepared for use in more than 80 countries is integrated into the housing of the TS 300. TAE and RJ11 cables are included in the scope of supply. As alternatives, versions with ISDN or GSM functionality are also available.

The TS 300 can establish an MPI link with the CPU via the backplane bus. The power supply is also drawn from the backplane bus. Therefore, for installation of a teleservice solution, only the phone line is required. The TS 300 does not need to be configured in the hardware configuration of the PLC and can therefore be retrofitted at any time.

Alternately, the TS 300 can be powered from an external 24 V source. The MPI connection can also be established externally via a 9-way sub D jack.

An additional USB connection is used to parameterize the TS 300, for in-situ use as a PC adapter, or for direct use of the internal modem.

The TS 300 can also be provided with a new operating system via a remote link. That enables functional expansion of a TS 300 already installed in the system. The update Software SHTools is included.

GSM antenna extension cable see page 54.

Ordering Data

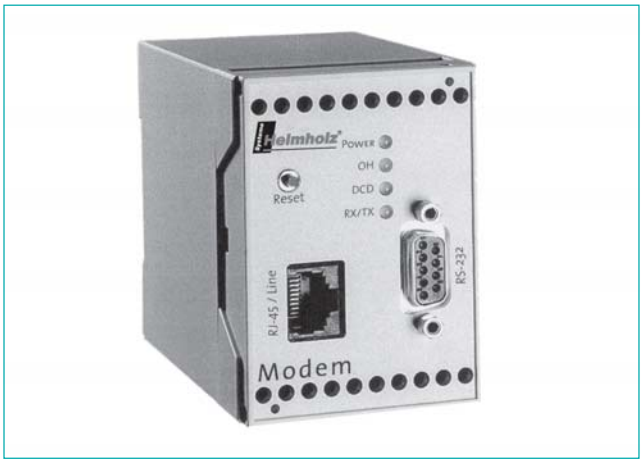
	Order-No.
TS 300 with modem analog[1] (incl. 3 m USB cable; 2x telephone cable, RJ11+TAE, each 3m)	**700-753-8MD21**
TS 300 with modem ISDN[1] (incl. 3 m USB cable; RJ11 telephone cable, 3m)	**700-753-8IS21**
TS 300 with modem GSM[1] (incl. 3 m USB cable)	**700-753-8GS21**
MPI-connecting cable, 0.5 m	**700-753-6VK11**
Mountingrack Adapter for DIN-Rail (optional)	**700-390-6BA00**

1) Export restriction for:
AF, AO, IQ, IR, KP, LB, LY, MZ, RW, SD, SY State: 08-2006

Technical Data

TS 300	
Dimensions (LxWxH mm)	116 x 40 x 124
Weight	approx. 270g
Supply voltage	+24 V ±25 % extern or 5 V via backplanebus
Current consumption typ.	approx. 500 mA via backplanebus ca. 130 mA external (analog/ISDN) ca. 170 mA external (GSM)
MPI interface Type	 RS485
Transmission rate	19.2 or 187.5 Kbit/s
Connection	SUB-D, 9-way or backplanebus
Communication interface Type	 USB 1.1, 2-wire dial-up (analog), ISDN So
Protocols	PC <-> S7 via modem or local
Connection	USB-A jack and RJ11

DIN rail modems, Pocket type modem for Teleservice



DIN rail type modem

Pocket type modem

With the SSW7-TS it is possible to service a plant remotely via the phone line. Commercial type modems can be used for that purpose. The Systeme Helmholz GmbH offers modems in DIN rail and pocket versions.

The modems are available both for analog and for ISDN phone connections. Suitable phone cables are included.

The DIN rail mounting modem can be operated at a voltage of 10 to 24 V. The pocket type modem is supplied with a 230 V connector PSU.

The DIN rail modem is prepared for worldwide use. It contains two alarm inputs and two switching outputs. With the alarm inputs, the modem can send a message via data link, as a fax, or as an SMS.

The dedicated parameterizing software is included.

Features

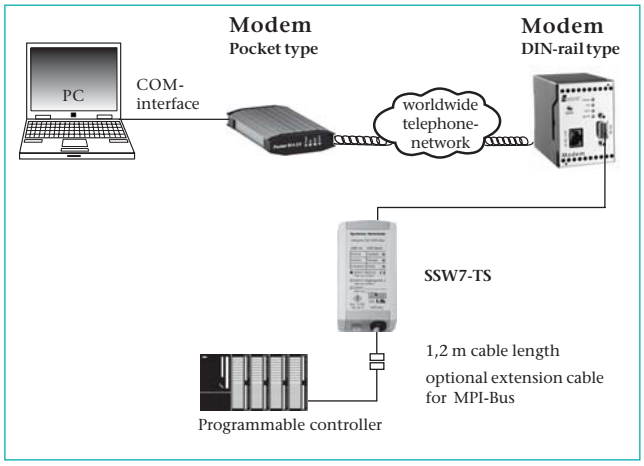
- List of countries with more than 90 destination countries
- Alarm inputs
- Switching outputs
- Industrial design

Ordering Data

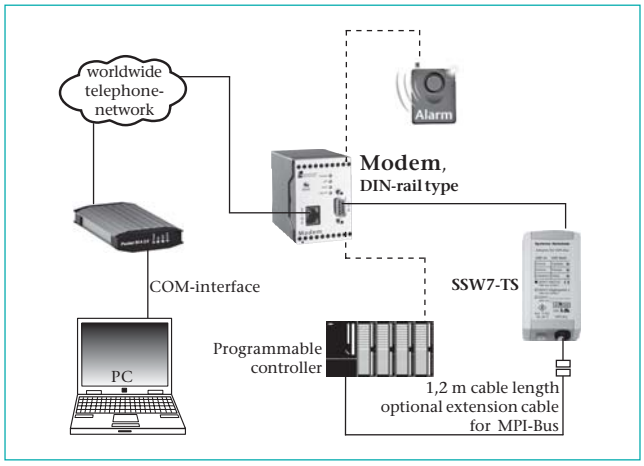
	Order-No.
SSW7-TS	**700-751-8VK21**
Modem, Pocket type, analog[1)] (incl. 2 m RS232 cable; 2x telephone cable, RJ11+TAE, each 3 m)	**700-751-MDM06**
Modem, DIN rail type, analog[1)] (incl. 2 m RS232 cable; 2x telephone cable, RJ11+TAE, each 3 m)	**700-751-HSM11**
Modem, Pocket type, ISDN[1)] (incl. 2 m RS232 cable; telephone cable RJ11, 3 m)	**700-751-MDM05**
Modem, DIN rail type, ISDN[1)] (incl. 2 m RS232 cable; telephone cable RJ11, 3 m)	**700-751-HSM02**
Power Plug (optional)	**700-751-SNT01**

1) Export restriction for:
AF, AO, IQ, IR, KP, LB, LY, MZ, RW, SD, SY State: 08-2006

DIN rail modems, Pocket type modem for Teleservice



Application for modems



Application example for alert notifications or teleservice to the programming device via SMS.

Connection possibilities:

	analog	ISDN	GSM
analog	yes	no	yes
ISDN	no	yes	yes
GSM	yes	yes	yes

Technical Data

Design	**Pocket, analog**	**DIN rail, analog**	**Pocket, ISDN**	**DIN rail, ISDN**
Degree of protection for housing	IP 20	housing IP 40/ clamps IP 20	IP 20	housing IP 40/ clamps IP 20
Dimension (LxWxH mm)	71 x 128 x 22	55 x 110 x 75	71 x 128 x 22	55 x 110 x 75
Ambient temp.	0...+55°C	0...+55°C	0...+55°C	0...+55°C
Air humidity	0-95% non condensing	0-95% non condensing	0-95% non condensing	0-95% non condensing
Supply voltage	DC 8-10 V via supplied plug-in power supply	DC 10-24 V	DC 8-10 V via supplied plug-in power supply	DC 10-24 V
Power consumption	max. 2 W	approx. 2.5 W	max. 1 W	approx. 0.5 W
Interface	RS232 9-way	RS232 9-way	RS232 9-way	RS232 9-way
Interface speed	300-115.200 bit/s	300-115.200 bit/s	300-230.400 bit/s	300-230.400 bit/s
Network interface	analog phone network RJ11 female	analog phone network via screw terminals or RJ45 female	ISDN via RJ45	ISDN network via screw terminals or RJ45
Line requirements	2-wire dial-up	2-wire dial-up	ISDN So	ISDN So
Watchdog	no	yes	yes	yes
Reset key	no	yes	no	yes
Status display	4 LEDs (Power , OH, DCD, RX/TX)	4 LEDs (Power , OH, DCD, RX/TX)	8 LEDs (L1, L2, B1, B2, RX/TX, DCD, DTR)	4 LEDs (Power , OH, DCD, RX/TX)
Electrical isolation	to telephone	to telephone	to telephone	to telephone
Alertinput	-	2	-	2
Switching output	-	2 relays	-	2 relays

56K-Modem „small“; USB

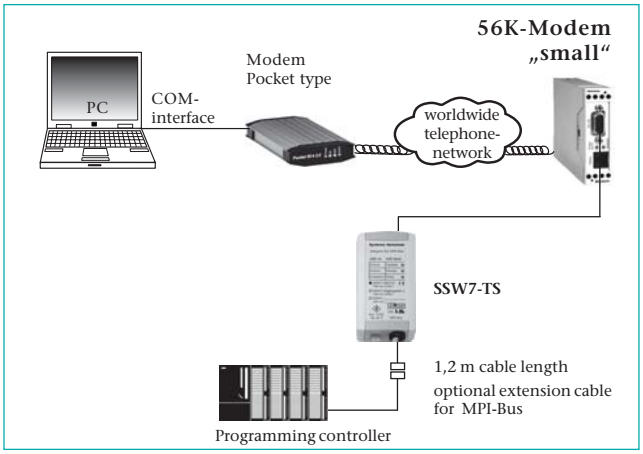
56K- modem „small“

56K- modem USB „small“

The slimline DIN rail modem 56K „small“ provides a low-cost alternative for data transmission. Its slim design qualifys it as the „space saving“ communication solution for your cabinet, also prepared for worldwide use.

The DIN rail modem 56k „small“ does not contain any alarm inputs and switching outputs like the DIN rail modem 56K.

24 V DC power supply.



Application for 56K-modem „small“

The DIN rail modem 56K USB „small“ is a particularly slender analog modem for industrial use for installation on DIN sectional rails.

In the switching cabinets of plants, machines and in building technologies, the modems are easy to fit thanks to their slim width of only 23 mm. Via the USB interface, the devices can be connected to all common controllers that feature a USB port.

The DIN rail modem 56k USB „small“ does not contain any alarm inputs and switching outputs like the DIN rail modem 56K.

24 V DC power supply.

Ordering Data

	Bestell-Nr.
56K-Modem „small“[1)] (incl. 2 m RS232 cable; 2x telephone cable, RJ11+TAE, each 3 m)	700-751-HSM21
56K-Modem USB „small“[1)] (incl. 1 m USB cable; 2x telephone cable, RJ11+TAE, each 3 m)	700-751-HSM31

1) Export restriction for:
AF, AO, IQ, IR, KP, LB, LY, MZ, RW, SD, SY State: 08-2006

Technical Data

	56K-Modem „small“	56K-Modem USB „small“
Dimension (L x W x H mm)	23 x 110 x 75	23 x 110 x 75
Degree of protection for housing	housing IP 40/ clamps IP 20	housing IP 40/ clamps IP 20
Ambient temp.	0...+55°C	0...+55°C
Air humidity	0-95% non condensing	0-95% non condensing
Supply voltage	DC 12-24 V	DC 12-24 V
Power consumption	approx. 1,6 W	approx. 1,6 W
Interface	RS232 9-polig	USB 2.0 jack
Interfacespeed	300-115.200 Bit/s	300-115.200 Bit/s
Network interface	analog phone network RJ12 female	analog phone network RJ12 female
Linerequirements	2-wire dial-up	2-wire dial-up
Software update	yes	yes
Watchdog	no	no
Reset-key	no	no
Status display	2LEDs (Power, Rx/Tx & OH/OCD)	2LEDs (Power, Rx/Tx & OH/OCD)
Alarm input	-	-
Switching output	-	-

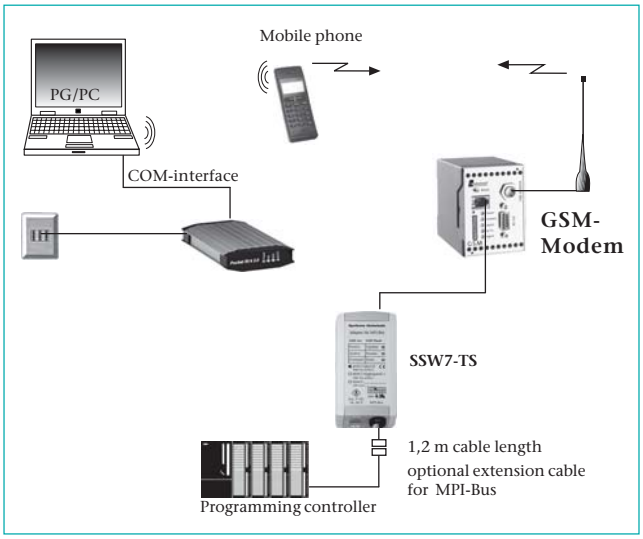
GSM modem

The Systeme Helmholz GSM Modem 4.1 transmits data in the cellphone network (900MHZ and 1800MHZ). It is parameterized through the RS232 interface. The modem can be powered with a voltage of 10 to 60 V DC. A flash update of the firmware is possible by setting up a GSM data link. Two digital alarm inputs permit the transmission of alarm messages by SMS, fax, e-mail, and data link. The up to 20 freely selectable alarm messages can be transmitted to up to 40 different recipients. The modem also features two switch outputs. These can be switched through alarm inputs, by an AT command, SMS command, and by DTMF tone remote switching.

GSM antenna extension cable see page 54.

Note

The SIM-card needed for the modem is available at every mobile service provider. The card must be data transfer capeable.



Application for GSM modem
A connection to the GSM modem can be established by an analog, ISDN or GSM remote station.

Ordering Data

	Bestell-Nr.
GSM-Modem[1] (incl. 2 m RS232 cable)	**700-751-GSM02**
Local triband antenna Quadband magnetic-antenna Patch triband antenna Portable quadband antenna	700-751-ANT01 700-751-ANT02 700-751-ANT03 700-751-ANT04
GSM antenna extension cable, 5 m GSM antenna extension cable, 10 m GSM antenna extension cable, 15 m	700-751-ANK01 700-751-ANK02 700-751-ANK03

1) Export restriction for:
AF, AO, IQ, IR, KP, LB, LY, MZ, RW, SD, SY State: 08-2006

Technical Data

GSM-Modem	
Dimensions (L x W x H mm)	55 x 110 x 75
Degree of protection for housing	housing IP 40/ clamps IP 20
Ambient temp.	0...+55°C
Air humidity	0-95% non condensing
Supply voltage	DC 10-24 V
power consumption	max 2,1 W
Interface	RS232 9-way
Interface Speed	300-115.200 Bit/s
Network interface	FME-antenna socket
Line requirements	Dualband GSM-Networks: Class 4 (2W@900MHz) Class 1 (1W@1.800MHz)
Software update	yes
Watchdog	yes
Reset-key	ja
Status display	5LEDs (Power, Connect, Status, Signal, Rx/Tx)
Alarminput	2
Switching output	2 relays

CAN-Bus

CAN 300, Communication Module

CAN 300, communication module

CAN connected

CANopen

Member of: CiA

The CAN 300 module from the Systeme Helmholz GmbH for use in a S7-300[1)] from Siemens permits connection of CAN stations with the programmable controller. The module can be slotted either into the central controller or into the expansion unit.

The CAN 300 modules support both CAN 2.0A (11 bit) and CAN 2.0B (29 bit) frames with a free selectable baudrate of 10 Kbit/s to 1 Mbit/s.

The CAN 300 module can also be run as Layer 2, CANopen Master, CANopen Slave and with Lenze System bus.

The CAN 300 module contains the power managment functions „Power On“, „Stop -> Run“ and „Run-> Stop“. IDs relevant to the programmable controller can be prefiltered using a 5-level acceptance mask.

In CAN 300 modules, 11 free settable timers are available. Each timer can trigger a free programmable CAN frame. In that way, it is simple to implement synchronous protocols commonly used in drive and servo control using the CAN 300 module.

Note

Informations about software and handling blocks are available on page 64 and 65.

Ordering Data

	Order-No.
CAN 300, communication module	**700-600-CAN01**
Programming cable PC to CAN 300 communication module	**700-610-0VK11**
Manual CAN 300, german/english	**900-600-CAN01**
CAN Training Course (see page 68)	**400-600-CAN01**

Technical Data

Dimensions (LxWxH mm)		116 x 40 x 125
Weight		approx. 280 g
Power supply Voltage		+5 V DC via backplane bus
Current consumption	typ. max.	160 mA 190 mA
CAN interfaces Type		ISO/DIN 11898, CAN High Speed physical Layer
Transmission rate		10 Kbit/s to 1 Mbit/s
Protocol		CAN 2.0A (11 bit) CAN 2.0B (29 bit) CANopen Master CANopen Slave LENZE Systembus
Connection		connector, SUB-D, 9-way
Configuration interfaces Type		RS232, serial asynchronous
Transmission rate		9.6 KBit/s
Format		8/N/1
Connection		connector, SUB-D, 9-way
Permissible ambient temperature - operating - transport and storage		0°C ... +60°C -25°C ... +75°C

1) S7-300® is a registered trademark of Siemens AG

CAN 300, Communication Module with DNV certificate

CAN 300, communication module (DNV)

The CAN 300 module from the Systeme Helmholz GmbH for use in a S7-300[1)] from Siemens permits connection of CAN stations with the programmable controller. The module can be slotted either into the central controller or into the expansion unit.

The CAN 300 modules support both CAN 2.0A (11 bit) and CAN 2.0B (29 bit) frames with a free selectable baudrate of 10 Kbit/s to 1 Mbit/s.

The CAN 300 module can also be run as Layer 2, CANopen Master, CANopen Slave and with Lenze System bus.

The CAN 300 module contains the power managment functions „Power On“, „Stop -> Run“ and „Run-> Stop“. IDs relevant to the programmable controller can be prefiltered using a 5-level acceptance mask.

In CAN 300 modules, 11 free settable timers are available. Each timer can trigger a free programmable CAN frame. In that way, it is simple to implement synchronous protocols commonly used in drive and servo control using the CAN 300 module.

Note

Informations about software and handling blocks are available on page 64 and 65.

The CAN 300 module is DNV (Det Norske Veritas) „peripherial equipment“ approved for increased application conditions (-25°C...+70°C).

Ordering Data

	Order-No.
CAN 300, communication module (DNV)	700-600-CAN81
Programming cable PC to CAN 300 communication module	700-610-0VK11
Manual CAN 300, german/english	900-600-CAN01
CAN Training Course (see page 68)	400-600-CAN01

Technical Data

Dimensions (LxWxH mm)		116 x 40 x 125
Weight		approx. 280 g
Power supply Voltage		+5 V DC via backplane bus
Current consumption	typ. max.	160 mA 190 mA
CAN interfaces Type		ISO/DIN 11898, CAN High Speed physical Layer
Transmission rate		10 Kbit/s to 1 Mbit/s
Protocol		CAN 2.0A (11 bit) CAN 2.0B (29 bit) CANopen Master CANopen Slave LENZE Systembus
Connection		connector, SUB-D, 9-way
Configuration interfaces Type		RS232, serial asynchronous
Transmission rate		9.6 KBit/s
Format		8/N/1
Connection		connector, SUB-D, 9-way
Permissible ambient temperature - operating - transport and storage		 -25°C ... +70°C -25°C ... +75°C

1) S7-300® is a registered trademark of Siemens AG

CAN 400, Communication Module

CAN 400, communication module

The CAN 400 module from the Systeme Helmholz GmbH for use in a S7-400[1)] from Siemens permits connection of CAN stations with the programmable controller. The module can be slotted either into the central controller or into the expansion unit.

The CAN 400 modules support both CAN 2.0A (11 bit) and CAN 2.0B (29 bit) frames with a free selectable baudrate of 10 Kbit/s to 1 Mbit/s.

The CAN 400 module can also be run as Layer 2, CANopen Master, CANopen Slave and with Lenze System bus.

The CAN 400 module contains the scripts „Power On“, „Stop -> Run“, „Run-> Stop“, „Power Off“. IDs relevant to the programmable controller can be prefiltered using a 5-level acceptance mask.

In CAN 400 modules, 16 free settable timers up to a resolution of 1ms are available. Each timer can trigger a free programmable CAN frame. In that way, it is simple to implement synchronous protocols commonly used in drive and servo control using the CAN 400 module.

Note

Informations about software and handling blocks are available on page 64 and 65.

Ordering Data

	Order-No.
CAN 400-1, Communication module with 1 CAN interface	700-640-CAN11
CAN 400-2, Communication module with 2 CAN interfaces	700-640-CAN21
Manual CAN 400, german/english	900-640-CAN21
CAN Training Course (see page 68)	400-600-CAN01

CAN connected

CANopen

Member of: CiA

Technical Data

Dimensions (LxWxH mm)	290 x 210 x 25	290 x 210 x 25
Weight	approx. 900 g	approx. 900 g
Power supply Voltage	DC +5 V via backplane bus	DC +5 V via backplane bus
Current consumption typ. max.	160 mA 190 mA	160 mA 190 mA
CAN interfaces		
Number	1	2
Type	ISO/DIN 11898, CAN High Speed physical Layer	ISO/DIN 11898, CAN High Speed physical Layer
Transmission rate	10 Kbit/s to 1 Mbit/s	10 Kbit/s to 1 Mbit/s
Protocol	CAN 2.0A (11 bit) CAN 2.0B (29 bit) CANopen Master CANopen Slave LENZE Systembus	CAN 2.0A (11 bit) CAN 2.0B (29 bit) CANopen Master CANopen Slave LENZE Systembus
Connection	SUB-D connector, 9-way	2 x SUB-D connector, 9-way
Status signal	6 LEDs	10 LEDs
Configuration interfaces Type	USB 1.1	USB 1.1
Connection	USB A-female	USB A-female
Permissible ambient temperature - operating - transport and storage	0°C ... +60°C -25°C ... +75°C	0°C ... +60°C -25°C ... +75°C

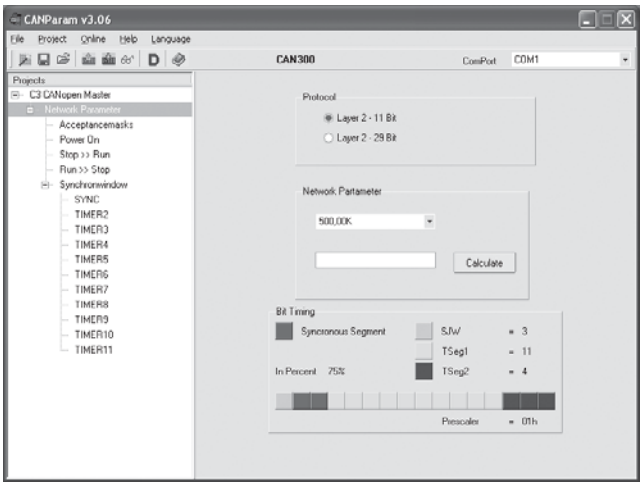
1) S7-400® is a registered trademark of Siemens AG

CAN Software

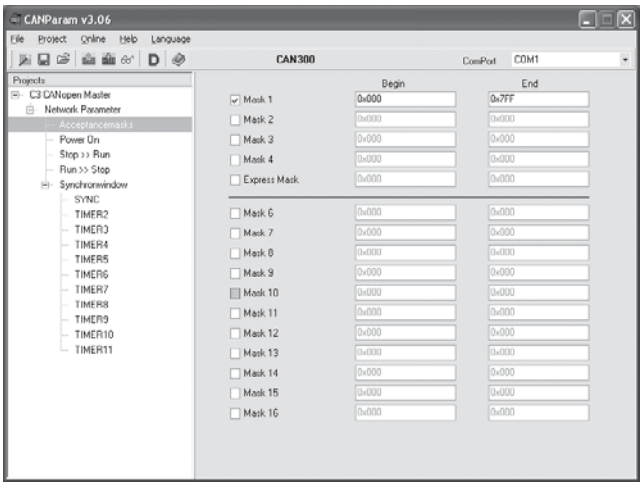
Parameterization Tool CANParam

The CAN modules are parameterized on the PC using the CANParam parameterization tool (contained in the 800-600-1AA11 and 800-600-1LZ11 software packages). That makes setting the communication parameters easy. The parameterization of a module can be stored in a project on the PC.

The CAN modules support both the protocol format CAN 2.0A (11 bit) and CAN 2.0B (29 bit).

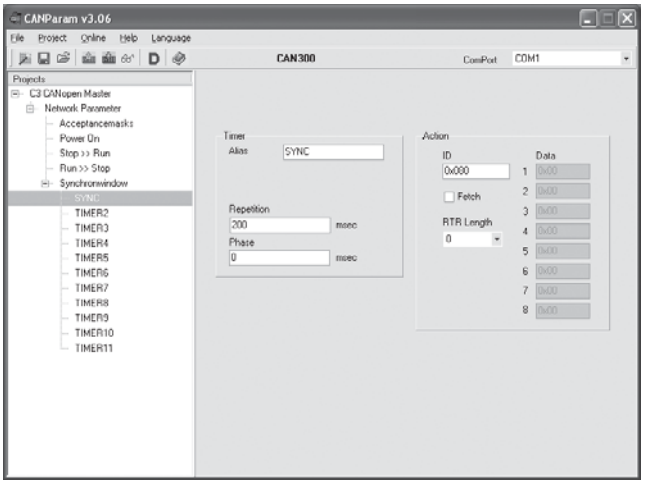


The CAN modules contain acceptance masks. These masks can be used to enable or disable various telegram IDs for reception. Express masks filter high-priority CAN telegrams so that they can be forwarded directly to the PLC.

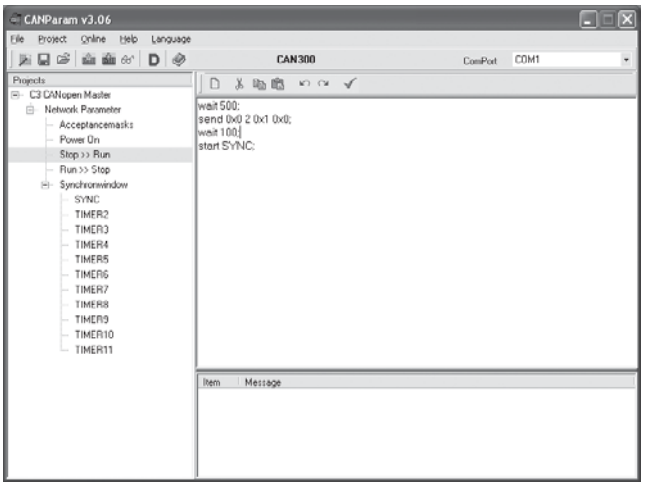


For time-dependent events, such as the SYNC telegram in the case of CANopen, up to 11 timers (CAN 300) or 16 timers (CAN 400) are available in the CAN modules up to a resolution of 1ms. Each timer can transmit any CAN telegram. The timers can be started, stopped, and changed from the PLC.

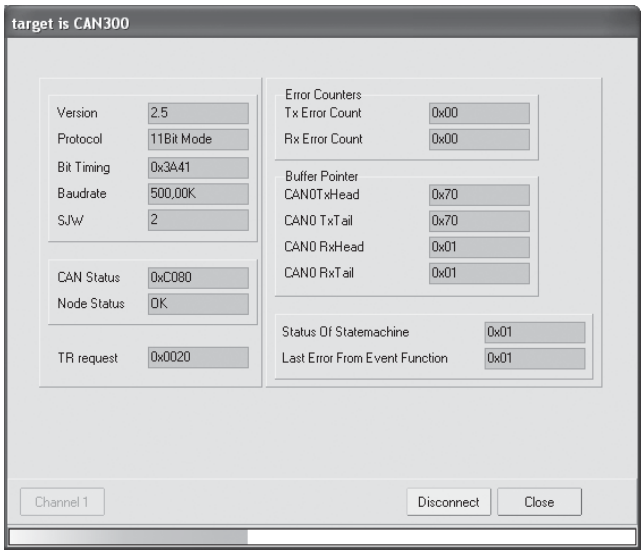
The timer 0 can also be used for synchronized transmission of CAN telegrams. It defines the time window in which *all* data will be transmitted synchronously.



CAN telegrams can be transmitted or timers started via freely programmable scripts on certain events such as „Power ON“ or „PLC Stop -> Run“.



An integrated diagnostic function facilitates troubleshooting on commissioning of the module.



Handling blocks

The CAN module is entered in the hardware configuration of the programming software as a CP-module (CAN 300) or a FM-module (CAN 400) and addressed in the STEP7[1)] program via handling blocks.

For the CAN modules, handling blocks are available for layer 2 communication, for CANopen Master (DS301 V4) or for the LENZE system bus. If CAN modules are to be used as a CANopen Slave, data handling functions are available for the profiles DS401 (IO modules) and DS420 (Corrugator). Further profiles can be set up on request.

Function scope of layer 2 data handling function:

Block	Function
FC 60 CANSEND	Transmit CAN telegram
FC 61 CANRCV	Read CAN telegram from the module
FC 63 CANSYNCSEND	Transmit CAN telegram to a timer

Various CAN protocols in 11bit or 29bit mode can be implemented with the handling blocks for layer 2.

Function scope of the CANopen Master data handling function:

Block	Function
FC 40	Initialization (restart)
FC 41	Read SDO
FC 41	Transmit SDO
FC 42	SDO block download
FC 42	SDO block upload
FC 43	Spontaneous receive (NMT,PDO)
FC 44	Transmit PDO
FC 45	Request PDO
FC 47	Nodeguarding/Heartbeat
FC 48	Network management
FC 49	Cycle
DB-PDO	Received PDO data
CAN-DB	Management DB

Function scope of the LENZE system bus data handling function:

Block	Function
FC 50 LCANINIT	Initialization (restart)
FC 51 LCANPARA	Transmit and read parameter data
FC 52 LCANPDO	Transmit process data
FC 54 LCANLAY2	Transmit Layer 2 telegram
FC 58 LCANNMT	Network management functions
FC 59 LCANCYCL	Cyclic communication
DB-PDO	Received PDO data
CAN-DB	Management DB

Ordering Data

CAN handling blocks	Order-No.
Handling blocks for CAN CD with parameterization software „CANParam“, handling blocks „Layer 2“ and „CANopen“	**800-600-1AA11**
LENZE-handling blocks for CAN CD with parameterization software „CANParam“, handling blocks „Layer 2“ and „LENZE-Systembus“	**800-600-1LZ11**
CANopen Slave handling blocks	**on request**
CAN Trainig Course (see page 68)	**400-600-CAN01**

Table software packages:

Content	800-600-1AA11	800-600-1LZ11
CANParam V2.x	X	X
Layer 2 handling blocks	X	X
CANopen Master data handling	X	-
LENZE system bus data handling	-	X
CANopen Slave data handling	on request	-
Manuals as PDF	X	X

One copy of each software package must be purchased.

1) STEP® is a registered trademark of Siemens AG

DP/CAN coupler

DP/CAN coupler

The DP/CAN-coupler links CANopen devices into a PROFIBUS-DP network.

The DP/CAN-coupler is a full-function CANopen Master. It supports network management, SYNC telegrams, and nodeguarding for monitoring the nodes.

On the PROFIBUS-DP, the DP/CAN-coupler is a normal node. The IO data of the CANopen nodes are placed on the Profibus in a transparent and freely configurable way.

The DP/CAN-coupler is linked into the hardware configuration software via a GSD file and can be configured completely there. Further tools are not necessary.

On the PROFIBUS, all standard baudrates up to 12MBit/s are supported, on the CAN bus, up to 1MBit/s.

The PROFIBUS address is set via a DIP switch.

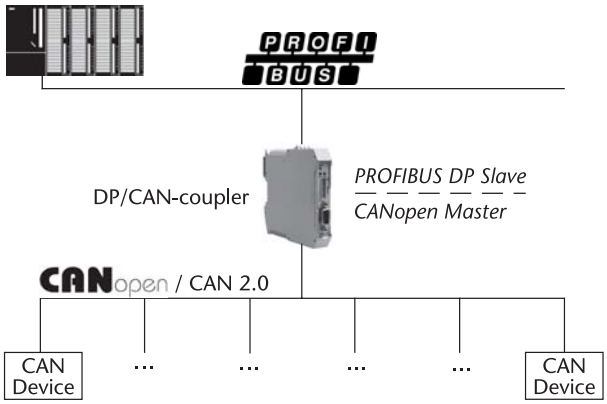
Parameterization of the CANopen nodes via SDO telegrams and management of emergency messages is also possible.

Alternatively, the DP/CAN-coupler can also be used as a CAN Layer 2 device on the CAN bus. This enables the connection of customer-specific CAN protocols via the PROFIBUS, too.

The DP/CAN-coupler is intended for mounting on the DIN sectional rail, and requires a 24V power supply. Because of its small width, it fits even into the smallest cabinets.

Features

- Up to 15 CANopen participants
- Up to 1 MBit CAN-baudrate
- Simple configuration via GSD file
- CANopen and CAN Layer 2 possible
- Address and function settable via dip switches
- 3 status LEDs



Ordering Data

	Order No.
DP/CAN-coupler	700-650-CAN01

Bus Connector for CAN Bus

Bus connector for CAN bus with (l.) and without (r.) connection jack

Bus connector for CAN bus, axial

The bus connectors for CAN bus are used to connect a CAN bus station to the CAN bus cable. The connector is quickly mounted and has integrated, connectable terminating resistors.

The Systeme Helmholz GmbH offers the bus connector with a vertical outgoing cable and for transmission rates up to 1 Mbits/s.

The bus connector is plugged directly onto the CAN bus interface (SUB-D-connector, 9-way) of the CAN bus stations. The CAN bus cables are connected using 6-way screw terminals.

Using a slide switch, you can set whether the connector is to be used as a node or segment end. The switch can also be operated when the connector is installed. The setting can be clearly seen.

The connector must be operated in node setting (“OFF“) when the incoming bus and the outgoing bus are to be interconnected. The terminating resistors are then bypassed.

The connector must be set as a segment end (“ON“), on the first and last (extreme) stations of the segement. In that case the terminating resistors are connected on the incoming bus, the outgoing bus is disconnected.

The bus connectors for CAN are also available with 180° cable outlet.

CAN connected

Member of: CiA

Ordering Data

	Order No.
Bus connector for CAN bus	
without additional connection jack	**700-690-0BA11**
with additional PG connection jack	**700-690-0BB11**
Axial	**700-690-0CA12**

Technical Data

Order-No. 700-690-0BB11 Order-No. 700-690-0BA11	**Connection jack** **yes** **no**
Order-No. 700-690-0CA12	**no**
Dimensions (LxWxH mm)	65 x 48 x 16
Weight	approx. 40 g
Outgoing cable	vertical outgoing cable
Terminating resistor	Resistance 120 Ω; integrated and connectable with slide switch
Transmission rate max.	1 Mbit/s
Interfaces CAN bus station CAN bus cable	 SUB-D connector, 9-way 6 terminals for wires up to 1.0 mm²
Permissible ambient conditions - operating temperature - transport/storage temperature - relative humidity max.	 0°C ... +60°C -25°C ... +75°C 75% at +25°C
Degree of protection	IP 20

CAN Training Course

CAN Training Course

The trainers will teach you all you need to know about correct handling of products by way of practical examples.

Contents:

- **CAN concept**
- **CAN Layer 2 protocol**
- **CANopen protocol**
- **CAN 300/CAN 400 parameterization & start-up**
- **CAN 300/CAN 400 programming in Step7**
- **DP/CAN coupler**

The trainings take place in our head quarter in Weisendorf. But it is also possible to have on-site trainings. Please ask for your individual offer.

You can find the actual dates for our trainings and registration form on our website (www.helmholz.com).

Make an appointment with one of our specialists for your own in-depth consultation.

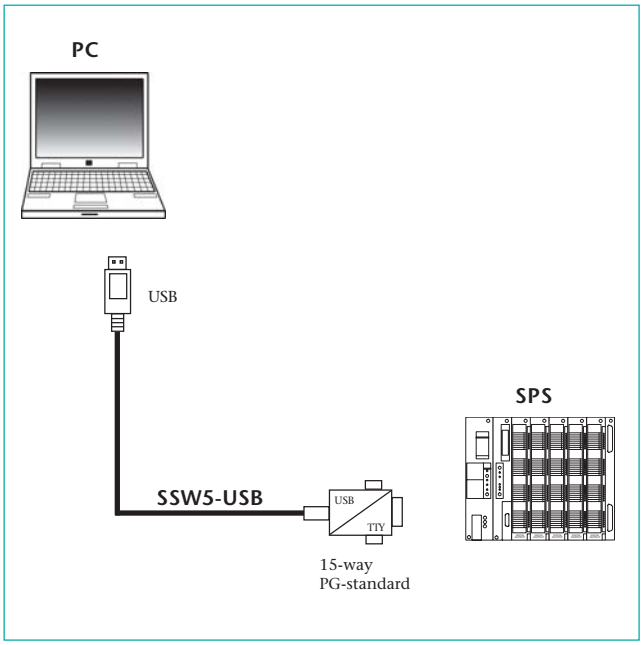
Ordering Data

	Order No.
Training Course CAN/CANopen/CAN products, 1 day	**400-600-CAN01**

Components for the S5

SSW7/USB Programming Cable

SSW5-USB programming cable



The SSW5-USB programming cable enables a connection between a PC or Laptop via USB to an S5 PLC.

A special virtual COM-port driver enables the usage of common programming tools, e.g. Step5 V7.2 from Siemens.

The SSW5-USB is equipped with a 15-pole Sub-D connector.

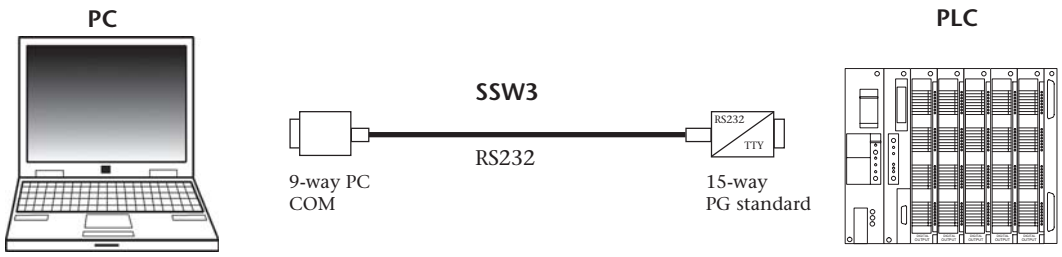
Ordering Data

SSW5-USB	Order-No.
SSW5-USB, programming cable, length 3 m	700-750-0US13
SSW5-USB, programming cable, length 5 m	700-750-1US13

Technical Data

Conversion	USB to TTY
Transmission	USB
Interface	USB
TTY interface	SUB-D male connector, 15-way
Max. transmission rate	38400 bit/s
Max. cable length	5 meters
Source of supply voltage	USB

SSW3 RS232-TTY Converter Cable



SSW3 interface converter cable

The SSW3 converter cable permits a connection between a PC and a PLC.

The RS232/TTY converter is completely integrated in the 15-way connector housing. An external power supply is therefore not required.
The data signals are transmitted via an **RS232** link.

Application

In conjunction with:
- Any programming software on a PC
- Online link with the PLC with data exchange
- Visualization and communication software

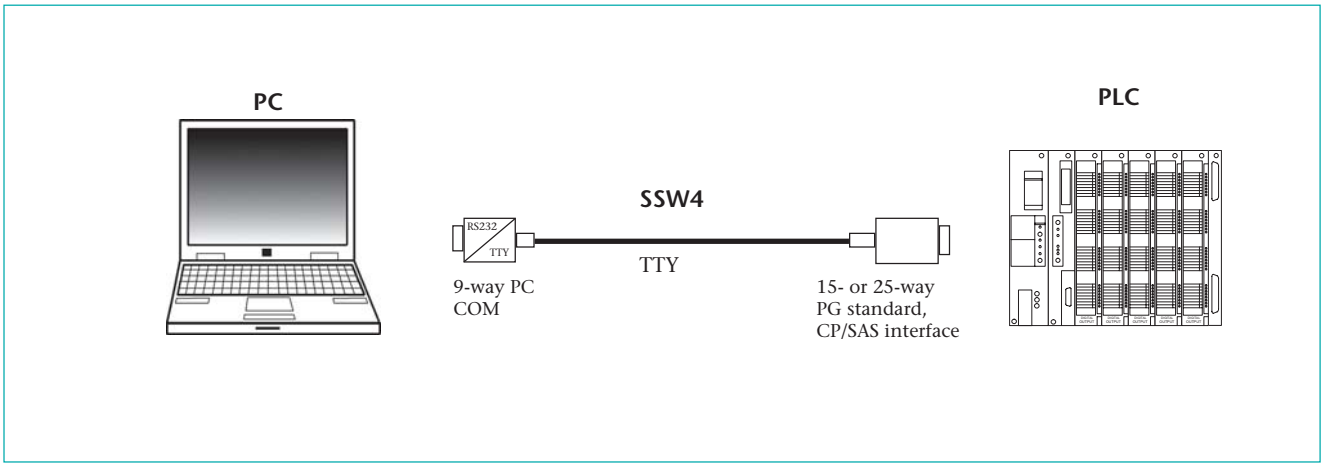
Ordering Data

	Order-No.
Interface converter cable	
SSW3, length 5 m	**700-750-0AA13**
SSW3, length 10 m	**700-750-1AA13**
SSW3, length 15 m	**700-750-2AA13**

Technical Data

Conversion	RS232 to TTY
Transmission	RS232
RS232 interface	SUB-D female connector, 9-way
TTY interface	SUB-D male connector, 15-way
Max. transmission rate	38400 bit/s
Max. cable length	15 meters
Source of supply voltage	PG

SSW4 RS232-TTY Converter Cable



Interface converter cable SSW4

The SSW4 converter cable permits a connection between a PC and a PLC.
The RS232/TTY converter is completely integrated in the 9-way connector housing and ensures complete isolation. On the TTY side, the SSW4 uses the current sources of the remote unit, the RS232 side is powered via the RS232 status signals. The software used must set the status line accordingly.

The data signals are transmitted through a TTY connection.

Because the electronics is housed in the 9-way connector housing, it is possible to make up customized connecting cables for various TTY assignments on request.

Application

in conjunction with:
- Any programming software for PLC on a PC
- On-line link with the PLC for data exchange
- Visualization and communication software

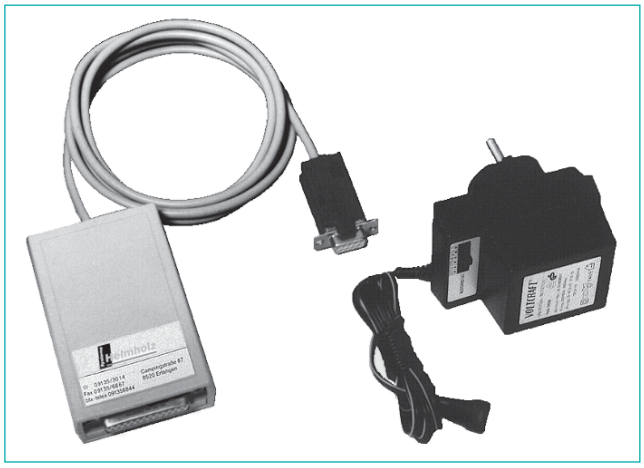
Ordering Data

	Order-No.
Interface converter cable	
SSW4, length 5 m,15-way	700-750-0AA24
SSW4, length 10 m,15-way	700-750-1AA24
SSW4, length 15 m,15-way	700-750-2AA24
SSW4, length 25 m,15-way	700-750-3AA24
SSW4, length 50 m,15-way	700-750-4AA24
SSW4, length 5 m, 25-way	700-750-0AA14
SSW4, length 10 m, 25-way	700-750-1AA14
SSW4, length 15 m, 25-way	700-750-2AA14
SSW4, length 25 m, 25-way	700-750-3AA14
SSW4, length 50 m, 25-way	700-750-4AA14
Special lengths on request (up to 200m)	
SSW4, 15-way	700-750-0SO24
SSW4, 25-way	700-750-0SO14

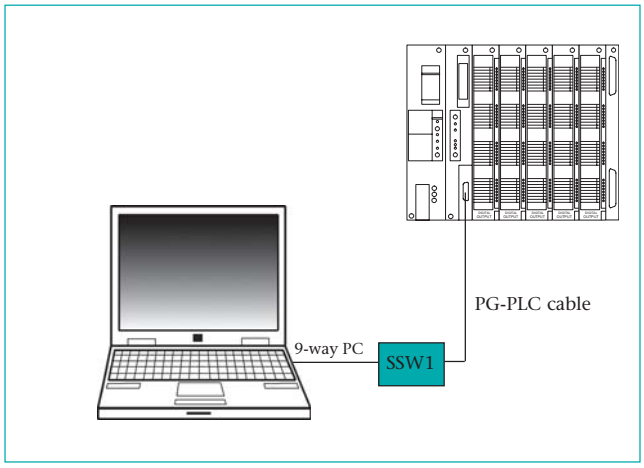
Technical Data

Conversion	RS232 to TTY
Transmission	TTY
RS232 interface	SUB-D female connector, 9-way
TTY interface	SUB-D male connector, 15- or 25-way
Max. transmission rate	9600 bit/s
Max. cable length	200 meters
Source of supply voltage	PC

SSW1 RS232-TTY Converter



SSW1 interface converters



The SSW1 is a universal interface converter from RS232 to TTY level.

It is connected to the PC via the 9-way SUB-D male connector of the interface converter directly to a COM interface. On the PLC side it is connected via a PG-PLC connecting cable that is also used with the PG 675 or PG 685.

The standard application is the use of programming or visualization software on a PC in on-line operation with a long-distance connection with the PLC.

The SSW1 is also suitable for numerous other tasks for which RS232-TTY conversion is required. Because of the external voltage supply, the SSW1 provides 20 mA current sources and is therefore also suitable for communication applications in which the potential unit does not have a current source. The connector and cable assignments can be obtained on request.

Ordering Data

	Order-No.
Interface converter SSW1 including connector power pack	**700-750-0AA11**
Connecting cable SSW1 - PG interface 20 m SSW1 - SAS 523/525 TTY 20 m	 **700-750-0VK11** **700-750-0VK21**
Connector power pack as single item	**700-750-1AA11**

Technical Data

RS232 interface	9-way PC standard
TTY interface	25-way PG 675/685 standard
Max. transmission rate	38400 bit/s
Supply voltage	8 to 24 V
Power consumption	80 mA

Memory Cards

Memory card short type

Memory card long type

Memory cards from the Systeme Helmholz GmbH, suitable for the S5, are designed for use in CPU main memory and CP modules.

We have been able to achieve a very advantageous price performance ratio with the use of modern, high-quality manufacturing methods.

Our product program covers the range of the most common submodules.

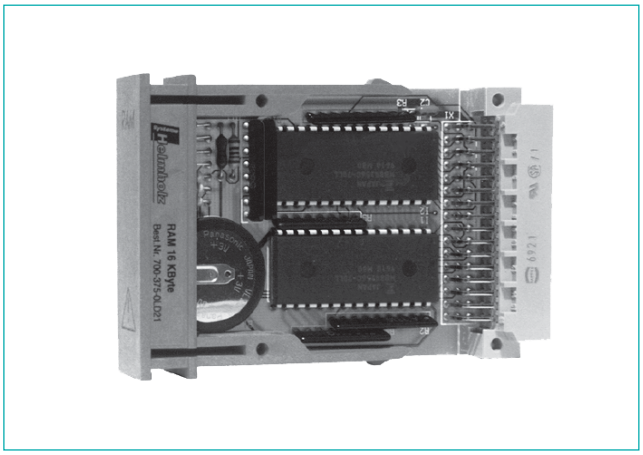
Ordering Data

	Order-No.
Flash EPROM cards short 5 V	
128 KByte	700-374-1KG11
256 KByte	700-374-1KH21
512 KByte	700-374-1KJ11
1 MByte	700-374-1KK21
Flash EPROM cards long 5 V	
128 KByte	700-374-2KG21
256 KByte	700-374-2KH21
1 MByte	700-374-2KK21
RAM cards long	
256 KByte	700-374-2AH21

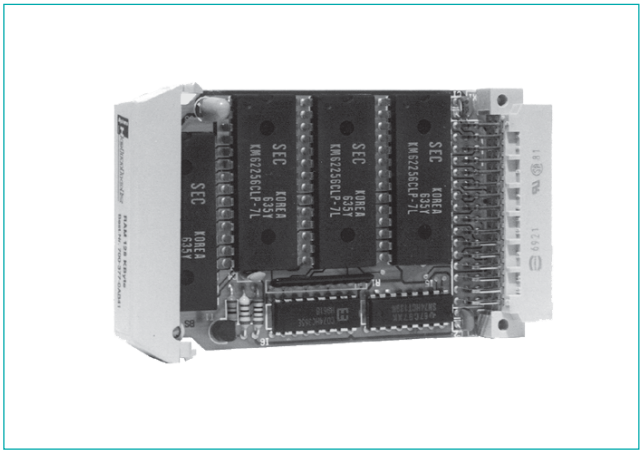
Technical Data

Flash EPROM cards short 5 V	
Memory capacity	128 KByte 256 KByte 512 KByte 1 MByte
Applications	CPU 945
Flash EPROM cards long 5 V	
Memory capacity	128 KByte 256 KByte 1 MByte
Applications	CPU 928 B
RAM Cards long	
Memory capacity	256 KByte
Applications	CP 581

RAM Submodule



RAM submodule 375



RAM submodule 377 long type

RAM submodules from the Systeme Helmholz GmbH, suitable for the S5, are designed for use in CPU main memory and in WF and CP modules.

The RAM submodules, series 375 and series 377 (short type) feature a battery backup integrated into the submodule. The RAMs are even backed up while the submodule is removed from its slot. Unintentional removal of the submodule no longer results in loss of data. That often makes the use of EEPROM submodules unnecessary.

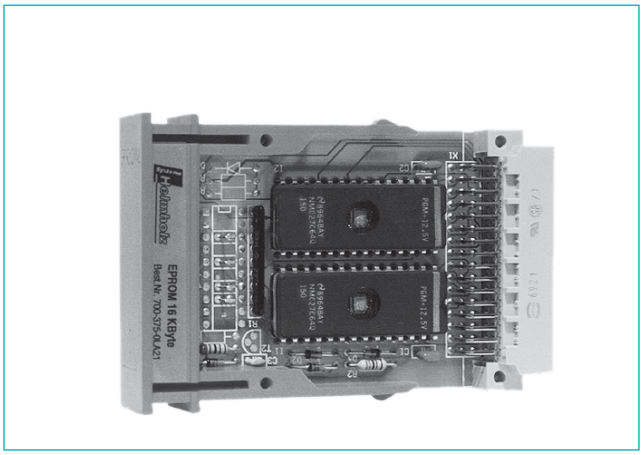
Ordering Data

	Order-No.
RAM submodules series 375 with battery	
8 Kbytes	700-375-0LD11
16 Kbytes	700-375-0LD21
32 Kbytes	700-375-0LD31
RAM submodules series 377 short type	
64 Kbytes with battery	700-377-0BA31
16 Kbytes without battery	700-377-0AA11
32 Kbytes without battery	700-377-0AA21
64 Kbytes without battery	700-377-0AA32
RAM submodules series 377 long type	
32 Kbytes	700-377-0AB21
64 Kbytes	700-377-0AB31
128 Kbytes	700-377-0AB41

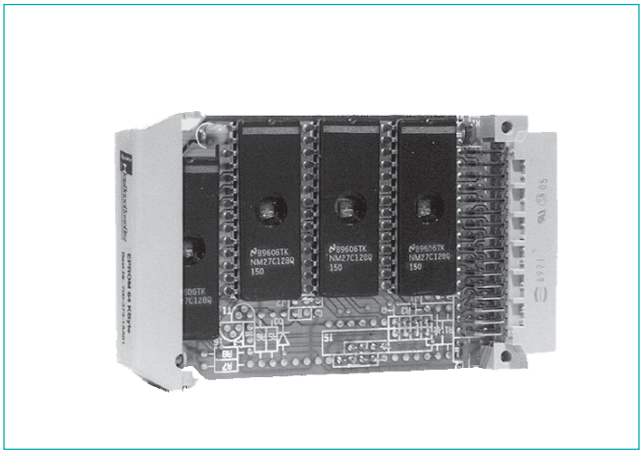
Technical Data

RAM submodules series 375 Memory capacity	8 Kbytes 16 Kbytes 32 Kbytes
Backup	3 V lithium battery
Applications	PLC 115, CP 530
RAM submodules series 377 short type with battery Memory capacity	64 Kbytes
Backup	3 V lithium battery
Applications	PLC 135
RAM submodules series 377 short type without battery Memory capacity	16 Kbytes 32 Kbytes 64 Kbytes
Applications	PLC 135
RAM submodules series 377 long type Memory capacity	32 Kbytes 64 Kbytes 128 Kbytes
Applications	PLC 155, WF 470, CP 525, CP 526, CP 527

EPROM, EEPROM



EPROM submodule 375



EPROM submodule 373

EPROM and EEPROM submodules from the Systeme Helmholz GmbH, suitable for the S5, are designed for use in CPU main memories and in WF and CP modules.

All Helmholz EPROM submodules with the ordering code -0LAxx or -0AAxx can be programmed on all programmers, including the old PG 675/685.

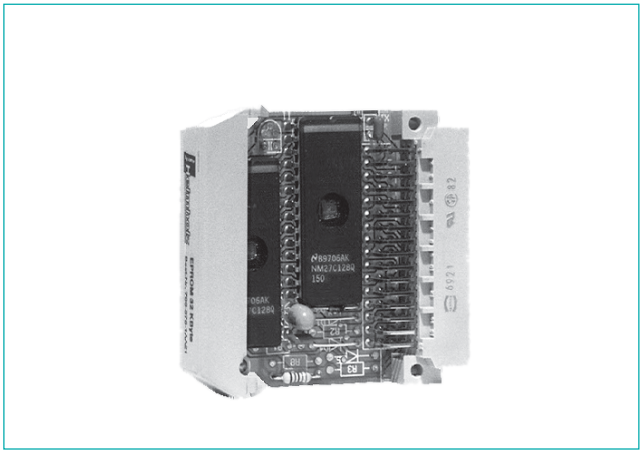
These EPROM submodules use the tested CMOS technology, so that your investment is protected, but they can easily be programmed with the old program numbers and programming voltage that were applicable to NMOS submodules if a special adapter is used.

EPROM submodules with the ordering code -1LAxx or -1AAxx are equivalent to the new CMOS submodules and can be programmed on new PUs with the new fast programming algorithms.

The memory submodules cover the range of the most common submodules. We can manufacture special submodules for individual customer requirements within a short time.

Ordering Data

	Order-No.
EPROM submodules series 375	
8 KByte	700-375-0LA15
16 KByte	700-375-0LA21
32 KByte	700-375-0LA41
64 KByte	700-375-0LA61
128 KByte	700-375-0LA71
8 KByte	700-375-1LA15
16 KByte	700-375-1LA21
32 KByte	700-375-1LA41
64 KByte	700-375-1LA61
128 KByte	700-375-1LA71
EPROM submodules series 373	
32 KByte	700-373-1AA41
64 KByte	700-373-1AA61
128 KByte	700-373-1AA81
EEPROM submodules series 375	
2 KByte	700-375-0LC11
4 KByte	700-375-0LC21
8 KByte	700-375-0LC31
16 KByte	700-375-0LC41
8/16 KByte	700-375-0LC45



EPROM submodule 376

Ordering Data

	Order-No.
EPROM submodules series 376	
16 KByte	**700-376-1AA11**
32 KByte	**700-376-1AA21**
64 KByte	**700-376-1AA31**

DEA 115, Digital Input/Output Modules

Digital input/output module

The digital input modules from the Systeme Helmholz GmbH convert the external binary signals from the process into the internal signal level of the programmable controllers. The digital output modules convert the internal signal level of the programmable controllers into the external binary signal level required for the process. Green LEDs indicate the signal status of the inputs and outputs.

The signal lines are connected to the corresponding front connectors. You can identify them on the labeling strip next to the LEDs.

You can remove and insert the modules and front connectors during operation without damaging the modules.

Ordering Data

	Order-No.
DEA 115 32 inputs (DC 24 V) non isolated	**700-420-7LA11**
32 inputs (DC 24 V) isolated	**700-430-7LA12**
DEA 115 32 output (DC 24 V; 0.7 A) non isolated	**700-441-7LA12**
32 output (DC 24 V; 0.7 A) isolated	**700-451-7LA12**

DEA 115, Digital Input/Output Modules

Technical Data

		700-420-7LA11	700-430-7LA12
Number of inputs		**32**	**32**
Isolation - in groups of		no -	yes 8
Input voltage (nom. value) - for "0" signal - for "1" signal		DC 24 V -33 to +5 V +13 to +33 V	DC 24 V -33 to +5 V +13 to +33 V
Input current - for "1" signal	typ.	8.9 mA	8.5 mA
Permiss. quiescent current for 2-wire Bero	min.	1.5 mA	1.5 mA
Delay time [1] - turn on - turn off	typ. typ.	2.3 ms 2.5 ms	2.3 ms 4.6 ms
Cable length - unshielded - shielded	max. max.	600 m 1000 m	600 m 1000 m
Front connector		46-way	46-way
		700-441-7LA12	**700-451-7LA12**
Number of outputs		**32**	**32**
Isolation - in groups of		no -	yes (optocoupler) 8
Supply voltage V_P, V_S - nominal value - ripple V_{pp} - permissible range (with ripple) - value at t < 10 ms	 max. max.	 DC 24 V 3.6 V 20 to 30 V 50 V	 DC 24 V 3.6 V 20 to 30 V 50 V
Output current for "1" signal - nominal value - permissible range - transient peak load (t=10 ms, d=20 %)	 max.	 0.5 A 5 mA to 0.7 A 1.5 A	 0.5 A 5 mA to 0.7 A 1.5 A
Lamp load (at nominal voltage)	max.	16.5 W	16.5 W
Inductive load	max.	0.2 H (at 0.7 A) 0.4 H (at 0.5 A) 1.1 H (at 0.3 A)	0.2 H (at 0.7 A) 0.4 H (at 0.5 A) 1.1 H (at 0.3 A)
Overload protection		electronic	electronic
Voltage induced on circuit interruption limited (internally) to	typ.	V_P - 50 V	V_P - 50 V
Switching frequency for - resistive load - lamps - inductive load	max. max. max.	1 kHz 100 Hz 2 Hz (at 0.3 A/0.7 H) 1 Hz (at 0.5 A/0.4 H)	1 kHz 100 Hz 2 Hz (at 0.3 A/0.7 H) 1 Hz (at 0.5 A/0.4 H)
Slope times - turn on - turn off	typ. typ.	0.13 ms 0.05 ms	0.2 ms 0.06 ms
Total load capability - without fan at 55°C - without fan at 35°C - with fan at 55°C		60 % 100% 100%	60 % 100% 100%
Residual current for "0" signal	max.	300 µA	300 µA
Signal level of the outputs - for "0" signal - for "1" signal	max. min.	+2 V V_P - 1,0 V	+2 V V_P - 1,0 V

1) Other delay times on request

DEA 135, Digital Input/Output Modules

Digital input module

The digital input modules from the Systeme Helmholz GmbH convert the external binary signals from the process into the internal signal level of the programmable controllers. The digital output modules convert the internal signal level of the programmable controllers into the external binary signal level required for the process. Green LEDs indicate the signal status of the inputs and outputs.

Red LEDs indicate an overload or short-circuit of outputs. The alarm output H carries a “1” signal if an overload or short-circuit has been detected on an output. It is possible to connect up to 16 alarm outputs in parallel.

With an enable input F it is possible to suppress the output of signals. It is possible to deactivate this function by removing a jumper on the module.

The signal lines are connected to the corresponding front connectors. You can identify them on the labeling strip next to the LEDs. Labels are provided to identify the modules and front connectors.

You can remove and insert the modules and front connectors during operation without damaging the modules.

Ordering Data

	Order-No.
DEA 135 32 input (DC 24 V) non-isolated	**700-420-4UA14**
32 input (DC 24 V) isolated	**700-430-4UA14**
DEA 135 32 output (DC 24 V; 0.7 A) non-isolated	**700-441-4UA14**
32 output (DC 24 V; 0.7 A) isolated	**700-451-4UA14**
Front Connectors 497 for DEA 135 for crimp connection without spring contacts single width, 42-way	**700-497-4UA12**
for screw connection single width, 42-way	**700-497-4UB31**

DEA 135, Digital Input/Output Modules

Technical Data

		700-420-4UA14	700-430-4UA14
Number of inputs		**32**	**32**
Isolation - in groups of		no -	yes 32 [1]
Input voltage (nom. value) - for "0" signal - for "1" signal		DC 24 V -33 to +5 V +13 to +33 V	DC 24 V -33 to +7 V +13 to +33 V
Permiss. quiescent current for 2-wire Bero	min.	1.5 mA	2.5 mA
Delay time [2] - turn on - turn off	 typ. typ.	 2.3 ms 2.1 ms	 2.3 ms 5.2 ms
Cable length - unshielded - shielded	 max. max.	 600 m 1000 m	 600 m 1000 m
Enable input F **Input voltage** (nom. value) - for enable - for disable Input current of the F input	 typ.	 DC 24 V +13 to +33 V -33 to +5 V 5 mA	 DC 24 V +13 to +33 V -33 to +5 V 5 mA
		700-441-4UA14	**700-451-4UA14**
Number of outputs		**32**	**32**
Isolation - in groups of		no -	yes (optocoupler) 32 [3]
Supply voltage V_P, V_S - nominal value - ripple V_{pp} - permissible range (with ripple) - value at t < 10 ms	 max. max.	 DC 24 V 3.6 V 20 to 30 V 50 V	 DC 24 V 3.6 V 20 to 30 V 50 V
Output current for "1" signal - nominal value - permissible range - transient peak load (t=10 ms, d=20 %)	 max.	 0.5 A 5 mA to 0.7 A 1.5 A	 0.5 A 5 mA to 0.7 A 1.5 A
Lamp load (at nominal voltage)	max.	16.5 W	16.5 W
Inductive load	max.	0.2 H (at 0.7 A) 0.4 H (at 0.5 A) 1.1 H (at 0.3 A)	0.2 H (at 0.7 A) 0.4 H (at 0.5 A) 1.1 H (at 0.3 A)
Overload protection		electronic	electronic
Voltage induced on circuit interruption limited (internally) to	typ.	V_P - 50 V	U_P - 50 V
Switching frequency for - resistive load - lamps - inductive load	 max. max. max.	 1 kHz 100 Hz 2 Hz (at 0.3 A/0.7 H) 1 Hz (at 0.5 A/0.4 H)	 1 kHz 100 Hz 2 Hz (at 0.3 A/0.7 H) 1 Hz (at 0.5 A/0.4 H)
Total load capability - without fan at 55°C - without fan at 35°C - with fan at 55°C	 	 60 % 100% 100%	 60 % 100% 100%
Residual current for "0" signal	max.	300 µA	300 µA
Signal level of the outputs - for "0" signal - for "1" signal	 max. min.	 +2 V U_P - 1.0 V	 +2 V U_P - 1.0 V

1) Other groupings on request
2) Other delay times on request
3) Insulation in 2 groups of 16 on request

AEA 115, Analog Input Modules

Analog input module

The analog input modules from the Systeme Helmholz GmbH convert the analog signals from the process to the internal signal level of the programmable controllers. The signal lines are connected to the corresponding front connectors. You can identify them on the labeling strip.

Ordering Data

	Order-No.
AEA 115	
16 voltage/current inputs or 8 Pt 100 resistance thermometer non-isolated	700-465-7LA13
Meas. range subm. 498 for AEA 115	
±50 mV/±500 mV/Pt 100	700-498-1AA11
±100 mV/±1 V	700-498-1AA21
±1 V/±10 V	700-498-1AA31
±2 mA/±20 mA	700-498-1AA41
4 ... 20 mA; 2-wire	700-498-1AA51
±500 mV/±5 V	700-498-1AA61
4 ... 20 mA; 4-wire	700-498-1AA71

Technical Data

Number of inputs	**16** voltage/current inputs, 8 Pt 100 resistance thermo-meters
Isolation	no
Permissible voltage between reference potential of a sensor and a central grounding point max.	± 1 V
Nominal input value	selectable for 4 chan. with meas. range submodules, see ordering data meas. range subm.
Digital representation of the input signal	12 bits + sign or 13 bits two's complement
Input resistance depending on meas. range submodule	
700-498-1AA11 min.	10 M Ω
700-498-1AA21	90 k Ω
700-498-1AA31, 700-498-1AA61	50 k Ω
700-498-1AA51, 700-498-1AA71	31.25 Ω
700-498-1AA41	25 Ω
Basic error limits	
± 50 mV/Pt 100	± 2 ‰
± 500 mV	± 1.5 ‰
± 1 V/± 5 V/± 10 V	± 3.5 ‰
± 20 mA/+ 4 to 20 mA	± 2.5 ‰
Basic error limits	(0°C to +55°C)
± 50 mV/Pt 100	± 5 ‰
± 500 mV	± 4.5 ‰
± 1 V/± 5 V/± 10 V	± 7.7 ‰
± 20 mA/+ 4 to 20 mA	± 6.7 ‰
Conversion time (settable)	20 ms for 50 Hz 16.6 ms for 60 Hz
Supply voltage	
- nom. value	DC 24 V
Current consumption	
- internal (at 5 V) typ.	200 mA
- external (at 24 V) typ.	20 mA/transducer
Cable length	
- shielded max.	200 m
max.	20 m/50 mV
Power loss (rated operation)	typ. 1.0 W
Space requirement	1 slot
Front connector	46-way
Permissible ambient temperature	
- operating	0°C to +55°C
- transport and storage	-25°C to +75°C

AEA 115, Analog Output Modules

Analog output module

The analog output modules from the Systeme Helmholz GmbH convert the internal signal level of the programmable controllers to the analog signal level required for the process.

The signal lines are connected to the corresponding front connectors. You can identify them on the labeling strip.

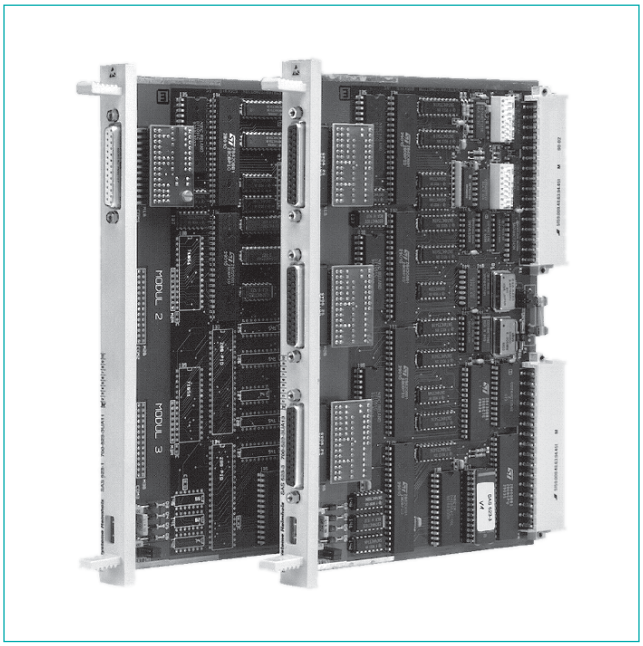
Ordering Data

	Order-No.
AEA 115	
isolated	
8 outputs, ± 10 V/0 to 20 mA	**700-470-7LA13**
8 outputs, ± 10 V	**700-470-7LB13**
8 outputs, + 1 to 5 V/4 to 20 mA	**700-470-7LC13**

Technical Data

	700-470-7LA13	**700-470-7LB13**	**700-470-7LC13**
Number of outputs	**8**	**8**	**8**
Isolation - in groups of All outputs referenced to M_{ANA}	yes (optocoupler) 8	yes (optocoupler) 8	yes (optocoupler) 8
Nominal output value - voltage - current	 ± 10 V/min. 3.3 k Ω 0 to 20 mA/max. 300 Ω	 ± 10 V/min. 3.3 k Ω -	 1 to 5 V/min. 3.3 k Ω 4 to 20 mA/max.300 Ω
Overload protection	yes	yes	yes
Digital representation of the output signals	11 bits + sign	11 bits + sign	11 bits + sign
Linearity of the nom. range	± 2.5 ‰	± 2.5 ‰	± 2.5 ‰
Operational limits (0°C to +55°C)	± 6 ‰	± 6 ‰	± 6 ‰
Supply voltage L+	DC 24 V	DC 24 V	DC 24 V
Cable length - shielded max.	 200 m	 200 m	 200 m
Current consumption - internal (at 5 V) typ. - external (at 24 V, without load) typ.	 300 mA 350 mA	 300 mA 350 mA	 300 mA 350 mA
Power loss (rated operation) typ.	10 W	10 W	10 W
Space requirement	1 slot	1 slot	1 slot
Front connector	46-way	46-way	46-way
Permissible ambient temperature - operating - transport and storage	 0°C to +55°C -25°C to +75°C	 0°C to +55°C -25°C to +75°C	 0°C to +55°C -25°C to +75°C

SAS 523/525 Serial Interface Modules



SAS 523 interface module

The SAS 523/525 communication processors from the Systeme Helmholz GmbH are for linking programmable controllers with other items of equipment with a serial interface.
The SAS 525 not only has an open driver but also the 3964/3964R procedure with RK512 frame structure.
You can connect, for example, printers, personal computers, barcode readers, weighing machines, terminals, keyboards, or other process peripherals that have a serial interface, and in the case of the SAS 525, all devices that use the RK512 computer link.

The SAS 523-1/525-1 has one, the SAS 523-2/525-2 two, the SAS 523-3/525-3 three serial interfaces.

The modules can be used in PLCs (without a fan tier) in the central controller or expansion unit, and in the IM slot. A CP slot is not required.

Programming

It is not necessary to program the modules. They are parameterized using DIL switches and data handling blocks for initializing the modules.

Interface

The interface is suitable for transmission of

- 20 mA current-loop signals (TTY)
- RS232
- RS422/485

It is configured by plugging in an interface submodule. The transmission rate can be set separately between 150 bit/s and 38400 bit/s for each channel.

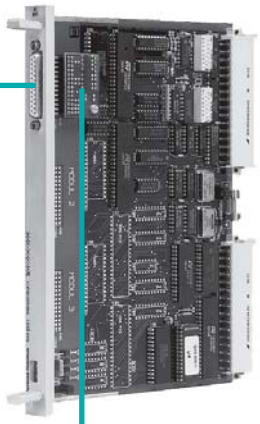
Note : Please also order the appropriate interface submodule for each interface.

SAS 523/525 Serial Interface Modules

Protocols

SAS 523/525
- Open drivers
- Bus operation
- Break handshake
- SAS Highspeed

SAS 525
- RK512



Interface submodules
- TTY
- RS232
- RS485 non-isolated
- RS485 isolated

Ordering Data

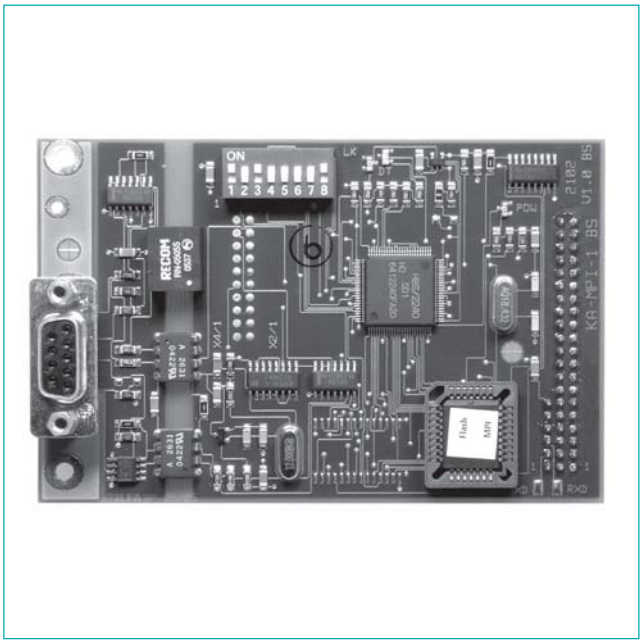
	Order-No.
Serial interface	
SAS 523-1	700-523-3UA11
SAS 523-2	700-523-3UA12
SAS 523-3	700-523-3UA13
Serial interface	
SAS 525-1	700-525-3UA11
SAS 525-2	700-525-3UA12
SAS 525-3	700-525-3UA13
Interface modules SAS 523/525	
TTY	700-523-1UA11
RS232	700-523-1UA21
RS485 non-isolated	700-523-1UA41
RS485 isolated	700-523-1UA51
Manual SAS 523/525 german/english	900-523-0AA11
Data handling blocks for SAS 523 3½" disk DOS format PLC 115 ... PLC 155	802-523-1AA61
Data handling blocks SAS 525 3½" disk DOS format PLC 115 ... PLC 155	802-525-1AA61

Technical Data

Supply voltage	+ 5 V ± 5%
Current consumption	
- SAS 523-1/525-1	350 mA
- SAS 523-2/525-2	410 mA
- SAS 523-3/525-3	460 mA
- TTY submodule	10 mA
additionally, if active	40 mA / 24 V
- RS232 submodule	10 mA
- RS422/485 submodule	140 mA
Transmission mode	serial asynchronous
Transmission rate	150 to 38400 bit/s
Parity	even, odd, none
Data format	7 or 8 bits
handshake	RTS, CTS (RS232) break (TTY) bus (RS422/485)
Procedure for SAS 525 Protocol for SAS 525	3964/3964R RK512
Connector	SUB-D, 25-way
Max. cable length	
TTY	1000 m
RS232	16 m
RS422/485	1200 m (twisted pair)

Service

Costumer-Specific Development



Customer-specific MPI board

Systeme Helmholz is your supportive partner for individual hardware and software development.

Years of experience in the development and manufacture of electronic components and comprehensive know-how in automation enable us to find a tailored solution for your requirements.

We can offer you the following services:

- Creation of specifications and costing
- Complete development of the hardware and software
- Mechanical design of the housing
- Tool design for injection molding tools
- Operating system development
- Software for parameterizing under Win 3.x and Win95
- CE conformity tests
- Projecting and building of test equipment

Compliance with the general guidelines for quality assurance and the valid EMC regulations is already ensured during development.

Moreover, we are able to conduct the series production of your products. The products are manufactured, tested, and delivered according to ISO 9001:2000.

With our modern and flexible development and manufacturing capacity we are able to implement small to medium-sized projects very quickly.

More examples of customer-specific applications

Hardware:

- Special variants DEA 300
- MPI-PROFIBUS Gateways for customer-specific protocols
- Operating units for building technologies

Software:

- CANopen slave handling block
- Special protocols for linking customer-specific devices to PLC
- Production data acquisition and evaluation in a network environment under Windows
- Application development for Windows 9x/ME/200 with Borland Builder, C++ or Borland Delphi

Training Courses

The Systeme Helmholz GmbH also offers product training for:

- **CAN 300 and S7 link**
- **S7 Teleservice**
- **NetLink and OPC-server**
- **MPI-Bus**

The trainers will teach you all you need to know about correct handling of products by way of practical examples.

Make an appointment with one of our specialists for your own in-depth consultation.

Ask for your own individual offer!

Ordering Data

	Order-No.
CAN/CANopen/CAN-modules (1 day)	400-600-CAN01
MPI-BUS/Teleservice/NETLink (1 day)	400-600-MPI01

Fax Order Form

Just copy, fill in and fax.

To:

Systeme Helmholz GmbH
Gewerbegebiet Ost 36
D-91085 Weisendorf
Germany

Fax: +49 9135/73 80-50
Phone: +49 9135/73 80-0

Your address:

Name of contact

Company

Street/No.

Postcode/City

Phone/Fax

Pos.	Order No.	Product name	Qty	Unit price	Total price

Delivery address (if different from above):

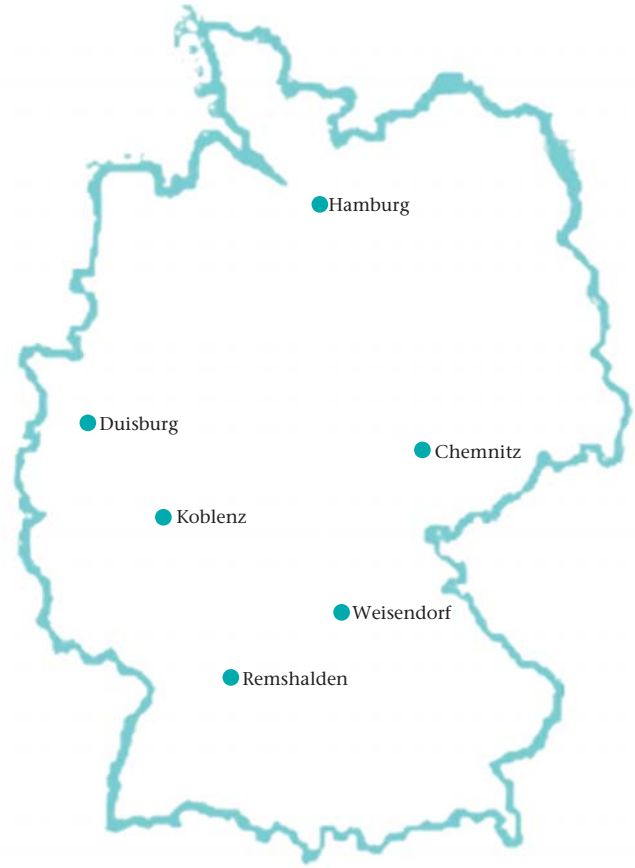
Company

Street/No.

Postcode/City

Date/Signature

Contacts in Germany



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China


Czech Republic


Egypt


Finland


France


Hungary


Italy


Malaysia


Netherlands


Norway

Poland


Portugal


Romania


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Slovakia


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Spain


Sweden


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United Arabien Emirates


United Kingdom


USA

Please find the contact details of our sales partner on our homepage www.helmholz.com

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