



Components for S5

Converter Cables

Memory Cards

RAM Submodules

EPROM, EEPROM

Digital Input/Output Modules

Analog Input/Output Modules

Serial Interface Modules

SSW5/LAN, S5 Ethernet Converter

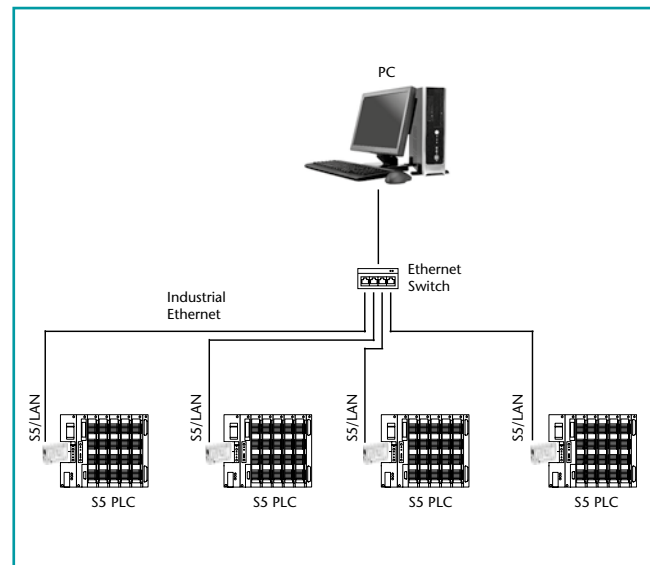


SSW5/LAN, S5 Ethernet Converter

The SSW5/LAN is an S5 Ethernet converter suitable for programming S5 controllers via the Ethernet. A special virtual COM-port driver enables the usage of common programming tools, e.g. STEP¹⁾ 5 V7.2 from Siemens. The power is drawn from the CPU or from an external source (24 V). A virtual COM port is available for all common installation tools.

Features

- S5 programming via TCP/IP
- Virtual COM port for all common installation tools
- Power supply from the CPU or external 24 V
- Compatible with every common S5 CPU
- Clearly recognition in the network by device name



Application example SSW5/LAN

Ordering Data

	Order No.
SSW5/LAN (incl. 3 m Ethernet cable, manual, CD with software)	700-750-LAN13

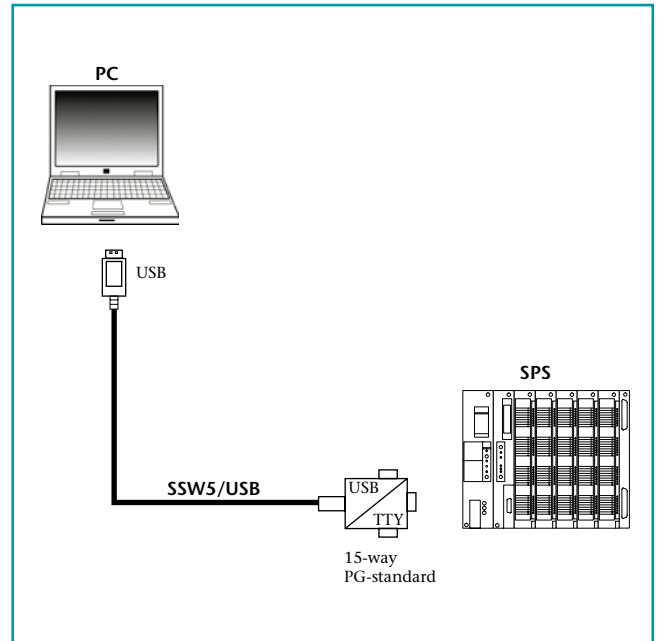
1) STEP is a registered trademark of Siemens AG.

Technical Data	
Dimensions (D x W x H mm)	65 x 21 x 42
Weight	Approx. 50 g
Power Supply Voltage	24 V DC via AG-interface or extern
Current consumption	Approx. 55 mA (typ.)
S5-AG Interface Type	TTY, 20 mA
Transmission rate	9.6 kBaud
Protocol	AS 511
Connection	15-way Sub-D connector
Ethernet interface Type	10 Base-T/100 Base-T; RJ45 female
Transmission rate	10/100 Mbps
Ambient temperature Transport and storage temperature	0 °C ... 60 °C -25 °C ... 75 °C
Degree of protection	IP 20

SSW5/USB, Programming Cable



SSW5/USB programming cable



Application example SSW5/USB

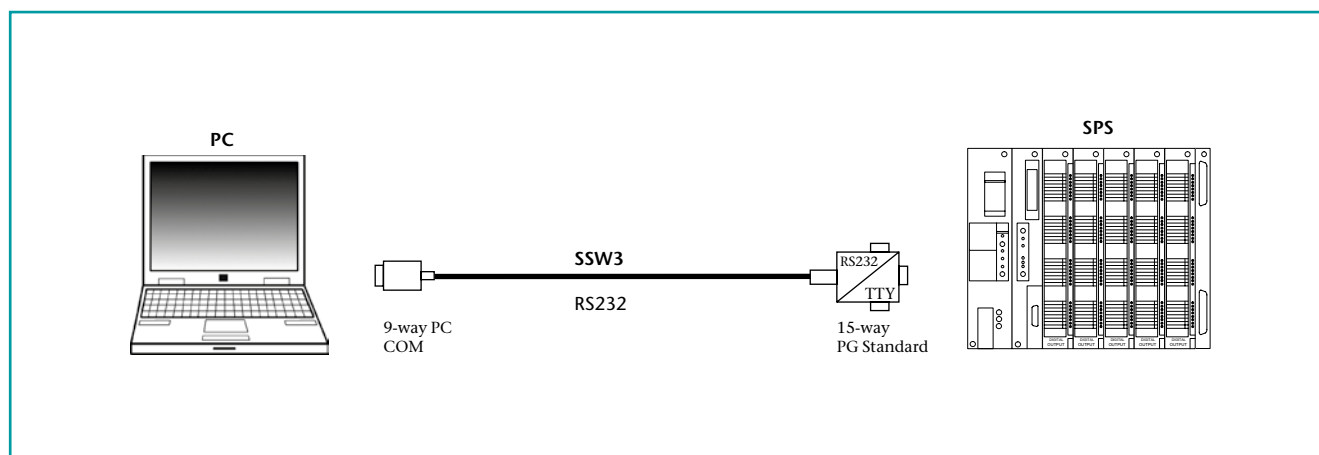
The SSW5/USB programming cable enables a connection between a PC or Laptop via USB to an S5 PLC.
A special virtual COM-port driver enables the usage of common programming tools, e.g. STEP¹⁾5 V7.2 from Siemens.
The SSW5/USB is equipped with a 15-pole Sub-D connector.

Ordering Data	
	Order No.
SSW5/USB, programming cable, length 3 m (incl. manual, CD with software)	700-750-0US13
SSW5/USB, programming cable, length 5 m (incl. manual, CD with software)	700-750-1US13

1) STEP is a registered trademark of Siemens AG.

Technical Data	
Conversion Interface	USB to TTY USB
Transmission	USB
TTY interface	SUB-D male connector, 15-way
Max. transmission rate	38400 Bps
Max. cable length	5 m
Source of supply voltage	USB-sided

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.

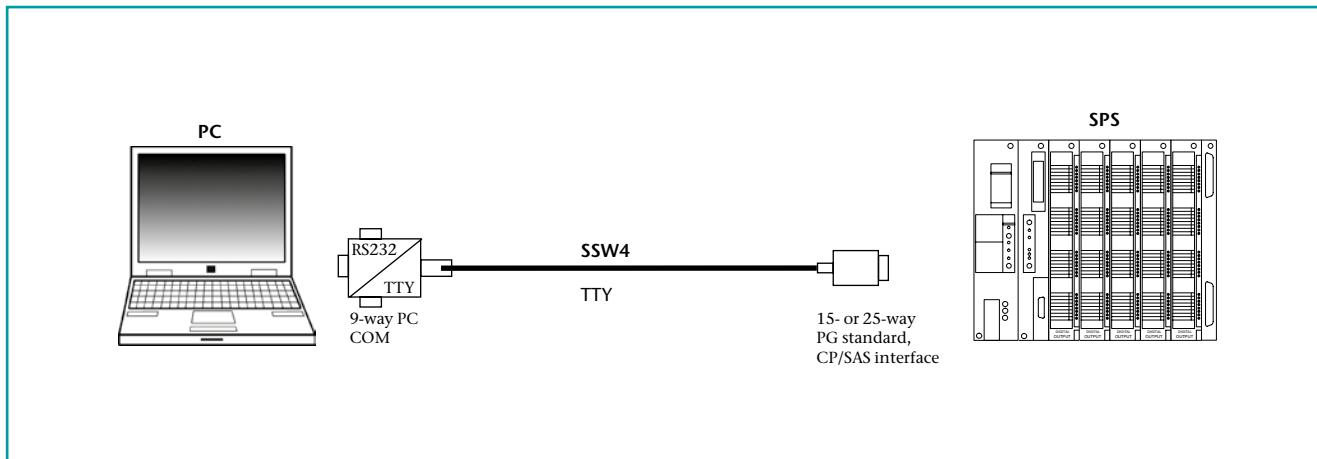
Application in conjunction with:

- 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 Bps
Max. cable length	15 m
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-OSO24
SSW4, 25-way	700-750-OSO14

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 Bps
Max. cable length	200 meters
Source of supply voltage	PC

Memory Cards



Memory card, short type



Memory card, long type

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

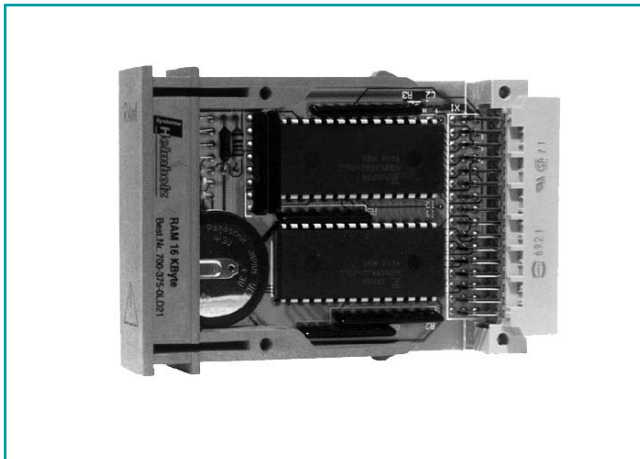
We have been able to achieve a very advantageous price performance ratio with the use of modern, high-quality manufacturing methods.

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

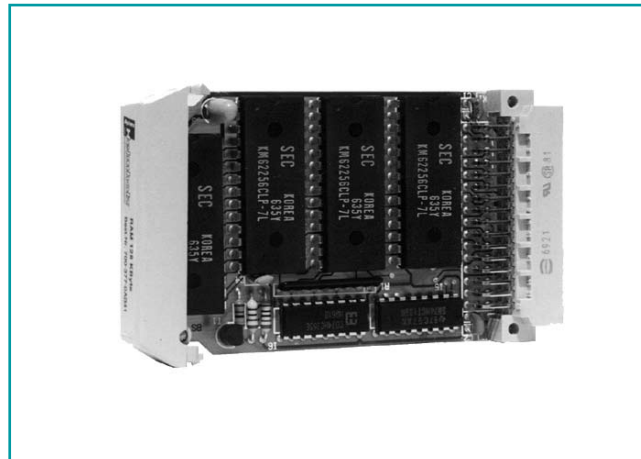
Ordering Data	
	Order-Nr.
Flash EPROM cards short 5 V 128 kByte 256 kByte 512 kByte 1 MByte	700-374-1KG11 700-374-1KH21 700-374-1KJ11 700-374-1KK21
Flash EPROM cards long 5 V 128 kByte 256 kByte 1 MByte	700-374-2KG21 700-374-2KH21 700-374-2KK21
RAM cards long 256 kByte	700-374-2AH21

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 Submodules



RAM submodule 375



RAM submodule 377, long type

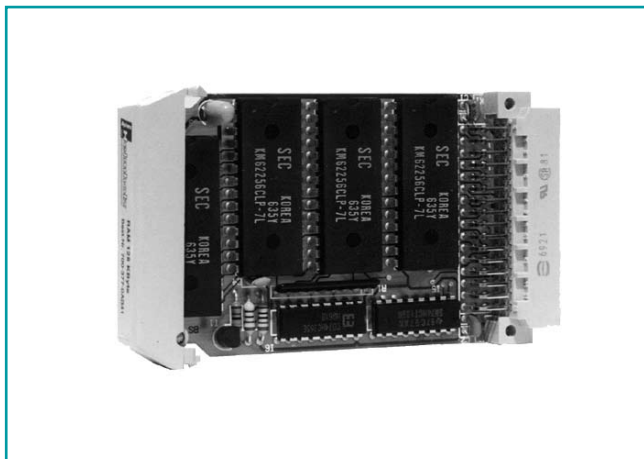
RAM submodules from the Systeme Helmholtz GmbH, suitable for the S5, are designed for use in CPU main memory and in WF and CP modules.

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

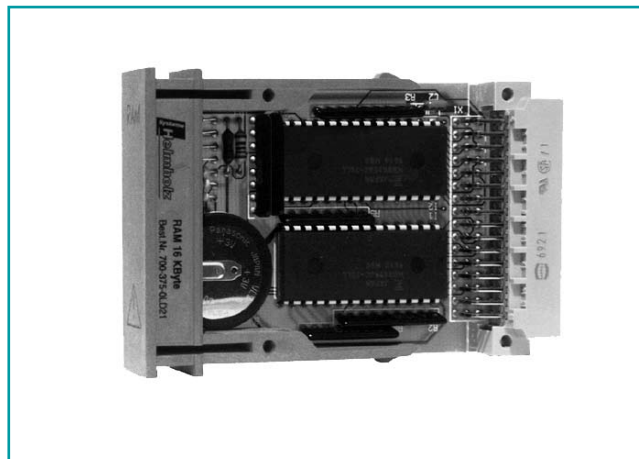
Ordering Data	
	Order No.
RAM submodules series 375 with battery 8 kByte 16 kByte 32 kByte	700-375-OLD11 700-375-OLD21 700-375-OLD31
RAM submodules series 377 short type 16 kBytes without battery 32 kBytes without battery 64 kBytes without battery 64 kBytes with battery	700-377-0AA11 700-377-0AA21 700-377-0AA32 700-377-0BA31
RAM submodules series 377 long type 32 kByte 64 kByte 128 kByte	700-377-0AB21 700-377-0AB31 700-377-0AB41

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

EPROM, EEPROM



EPROM submodule 373



EPROM submodule 375

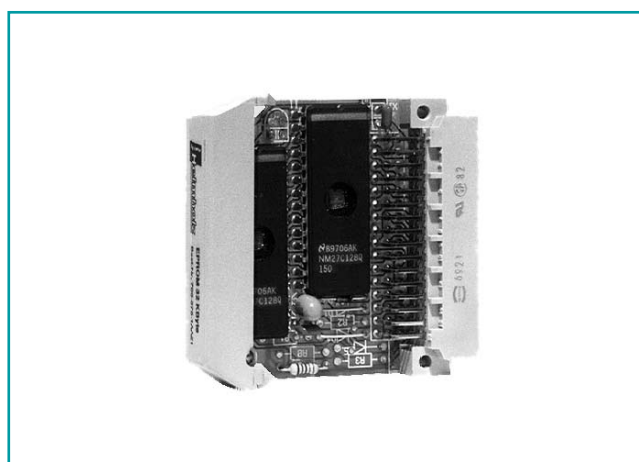
EPROM and EEPROM submodules from the Systeme Helmholtz GmbH, suitable for the S5, are designed for use in CPU main memories and in WF and CP modules.

All Helmholtz EPROM submodules with the ordering code -0LAxx or -0Axx 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 -1Axx are equivalent to the new CMOS submodules and can be programmed on 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.



EPROM submodule 376

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, with new CMOS submodules	700-375-1LA15
16 kByte, with new CMOS submodules	700-375-1LA21
32 kByte, with new CMOS submodules	700-375-1LA41
64 kByte, with new CMOS submodules	700-375-1LA61
128 kByte, with new CMOS submodules	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 submodules series 376	
16 kByte	700-376-1AA11
32 kByte	700-376-1AA21
64 kByte	700-376-1AA31

Technical Data	
EPROM modules series 375	
Memory capacity	8 kByte 16 kByte 32 kByte 64 kByte 128 kByte
Areas of application	PLC 95, PLC 100, PLC 115, CP 530
EPROM modules series 376	
Memory capacity	16 kByte 32 kByte
Areas of application	PLC 91351, IP 257
EPROM modules series 373	
Memory capacity	32 kByte 64 kByte 128 kByte
Areas of application	PLC 155, WF 470, CP 524, CP 525, CP 526, CP 527
EEPROM modules series 375	
Memory capacity	2 kByte 4 kByte 8 kByte 16 kByte 32 kByte
Areas of application	PLC 95, PLC 100, PLC 115, CP 530

1) The new version of the CPU 928B now only uses memory cards

DEA 115, Digital Input/Output Modules



Digital input/output module

The digital input modules from the Systeme Helmholtz 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 outputs (DC 24 V; 0,7 A) non isolated	700-441-7LA12
32 outputs (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 +3 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 time¹⁾ • turn on • turn off	typ. 2.3 ms typ. 2.5 ms	2.3 ms 4.6 ms
Cable length • unshielded • shielded	max. 600 m max. 1000 m	600 m 1000 m
Front connector	46-way	46-way

Technical Data		
	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. DC 24 V 3.6 V 20 to 30 V max. 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, $d=20\%$)	0.5 A 5 mA to 0.7 A max. 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. 1 kHz max. 100 Hz max. 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. 0.13 ms typ. 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 μ A	300 μ A
Signal level of the outputs • for "0" signal • for "1" signal	max. +2 V min. $U_p - 1,0$ V	+2 V $U_p - 1,0$ V

1) Other delay times on request

DEA 135, Digital Input/Output Modules



Digital input module

The digital input modules from the Systeme Helmholtz 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 inputs (DC 24 V) non-isolated	700-420-4UA14
32 inputs (DC 24 V) isolated	700-430-4UA14
DEA 135	
32 outputs (DC 24 V; 0,7 A) non-isolated	700-441-4UA14
32 outputs (DC 24 V; 0,7 A) isolated	700-451-4UA14

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 5.2 ms
Cable length • unshielded • shielded		max. max.	600 m 1000 m
Enable input F Input voltage (nom. value) • for enable • for disable		DC 24 V +13 to +33 V -33 to +5 V	DC 24 V +13 to +33 V -33 to +5 V
Input current of the F input	typ.	5 mA	5 mA

Technical Data			
		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.	DC 24 V 3.6 V 20 ... 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
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)
Total load capability • without fan at 55 °C • without fan at 35 °C • with fan at 55 °C			60% 100% 100%
Residual current for "0" signal	max.	300 μ A	300 μ A
Signal level of the outputs • for "0" signal • for "1" signal		max. min.	+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 Helmholtz 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 Pt100 resistance thermometer non-isolated	700-465-7LA13
Meas. range subm. 498 for AEA 115 ±50 mV/±500 mV/Pt100 ±100 mV/±1 V ±1 V/±10 V ±2 mA/±20 mA 4 ... 20 mA; 2-wire ±500 mV/±5 V 4 ... 20 mA; 4-wire	700-498-1AA11 700-498-1AA21 700-498-1AA31 700-498-1AA41 700-498-1AA51 700-498-1AA61 700-498-1AA71

Technical Data	
Number of inputs	16 voltage/current inputs, 8 Pt100 resistance thermometers
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	min.
700-498-1AA11	10 MΩ
700-498-1AA21	90 kΩ
700-498-1AA31, 700-498-1AA61	50 kΩ
700-498-1AA51, 700-498-1AA71	31.25 Ω
700-498-1AA41	25 Ω
Basic error limits ±50 mV/Pt100 ±500 mV ±1 V/±5 V/±10 V ±20 mA/+ 4 to 20 mA	±2 ‰ ±1.5 ‰ ±3.5 ‰ ±2.5 ‰
Basic error limits ±50 mV/Pt100 ±500 mV ±1 V/±5 V/±10 V ±20 mA/+ 4 to 20 mA	(0 °C to +55 °C) ±5 ‰ ±4,5 ‰ ±7.7 ‰ ±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) • external (at 24 V)	typ. 200 mA 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
Ambient temperature Transport and storage temperature	0 °C ... +55 °C -25 °C ... +75 °C

AEA 115, Analog Output Modules



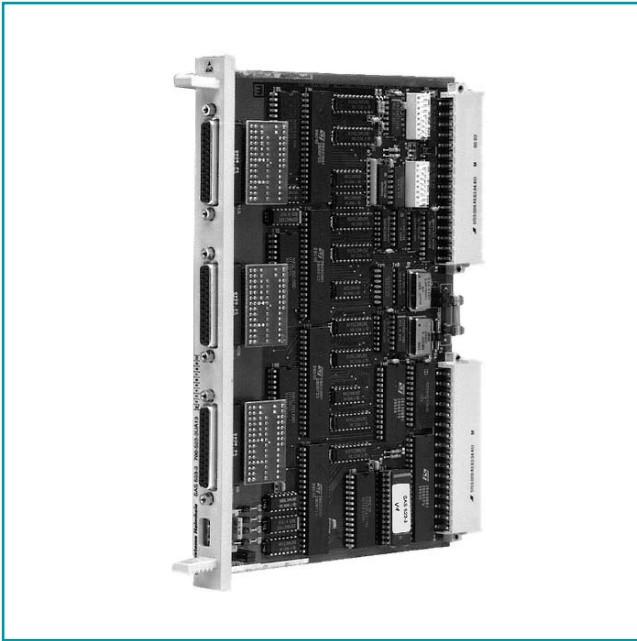
Analog output module

The analog output modules from the Systeme Helmholtz 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 ... 20 mA/max. 300 Ω	± 10 V/min. 3.3 k Ω -	1 ... 5 V/min. 3.3 k Ω 4 ... 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) • external (at 24 V, without load)	typ. 300 mA typ. 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
Ambient temperature Transport and storage temperature	0 °C ... +55 °C -25 °C ... +75 °C	0 °C ... +55 °C -25 °C ... +75 °C	0 °C ... +55 °C -25 °C ... +75 °C

SAS 523/525, Serial Interface Modules



SAS 523 interface module

The SAS 523/525 communication processors from the Systeme Helmholtz 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 523-3/525-3 has 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.

If you are using the open driver and if you have implemented bus transmission, the modules can buffer 255 bytes per channel and direction of data flow, handle the serial communication actively and therefore off-load the CPU.

The open transmission protocol of the SAS 525 is the same as that of the SAS 523. In addition a driver can be initialized for the RK512 protocol.

Data exchange with the programmable controller is executed by function blocks (data handling blocks), which are parameterized by the user.

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.

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

Note

Please also order the appropriate interface submodule for each interface.

Ordering Data	
	Order No.
Serial interface SAS 523-3	700-523-3UA13
Serial interface SAS 525-3	700-525-3UA13
Interface modules SAS 523/525 TTY	700-523-1UA11
RS232	700-523-1UA21
Manual SAS 523/525 German/English	900-523-0AA11
Data handling blocks for SAS 523 on data storage media PLC 115 ... PLC 155	802-523-1AA61
Data handling blocks SAS 525 on data storage media PLC 115 ... PLC 155	802-525-1AA61

Technical Data	
Supply voltage	+5 V \pm 5%
Current consumption	
• SAS 523-3/525-3	460 mA
• TTY submodule additionally, if active	10 mA
• RS232 submodule	40 mA / 24 V 10 mA
Transmission mode	Serial asynchronous
Transmission rate	150 to 38400 Bps
Parity	Even, odd, none
Data format	7 or 8 Bits
Handshake	RTS, CTS (RS232) break (TTY) bus (RS422/485)
Supported protocols for SAS 523	ASCII
Supported protocols for SAS 525	ASCII, RK512
Connector	SUB-D, 25-way
Max. cable length	
TTY	1000 m
RS232	16 m