

AS-i Gateways/Links to PROFIBUS

PROFIBUS DP

1 or 2 AS-i Masters

AS-i Scope function

AS-i Specification 2.1



IP20



graphical display



Function

The AS-i/PROFIBUS Gateways serve to connect AS-i systems to the PROFIBUS. They act as a Master for the AS-i and as a slave for the PROFIBUS.

AS-i Specification 2.1

The AS-i/PROFIBUS DP Gateways already fulfil the AS-i Specification 2.1. This means:

- Up to 62 AS-i slaves can be connected per 1 AS-i network
- The transfer of analog signals via AS-i is integrated in the Masters
- All further functions of the new specification as e. g. the diagnosis of the AS-i peripheral fault are implemented.

The AS-i functions are provided cyclically via PROFIBUS DP V0 and acyclically via PROFIBUS DP V1.

In the cyclic data transfer optionally up to 32 Bytes I/O data are transferred for the binary data of 1 AS-i network. Furthermore analog signals and all further commands of the new AS-i specification can be transferred in the mailbox channel via PROFIBUS.

The serial PROFIBUS Master (Article no. BW1258) and the AS-i Control Tools can be used for the monitoring of the AS-i data online via the PROFIBUS DP V1.

AS-i Scope

Diagnostics, which go far beyond the standard diagnostics facilitate the simple detection of the occasionally occurring configuration errors and further irritations towards the AS-i communication. So in case of an error the down time of machines can be minimized or you can initiate preventive maintenance.

Two sort of housing

The AS-i/PROFIBUS Gateways with one Master can be delivered in a housing for cabinet mounting or in a field housing in IP65. The handling of the AS-i/PROFIBUS Gateway in IP65 is identically with the AS-i/PROFIBUS DP Gateway in IP20. The high protection category IP65 makes the device suitable for applications in the extreme industrial environments frequently encountered in the field. AS-i is connected using the penetration technique of EMS (Electromechanical Interface). PROFIBUS is connected with heavy gauge terminals and cage clamp terminal blocks.

Commissioning and monitoring

The AS-i/PROFIBUS Gateways can be commissioned respectively programmed with the help of the software "AS-i Control Tools" in combination with the PROFIBUS DP Master Simulator. The GSD file as well as the type files are included in the package.

Commissioning, debugging and setting up of the AS-i parameters without the software can only be accomplished with the use of two push-buttons, the display and the LEDs directly on the system.

Gateways with graphical display

The AS-i Gateways with Graphical Display are a high-end solution to link AS-i with a superior PROFIBUS system

Simple and Fast Commissioning

Using the AS-i Gateway with graphical display, the entire AS-i network can be commissioned and the connected periphery can be completely tested without PLC or PROFIBUS Master. The new interactive graphic display also enables the user to complete all tasks which previously required the "AS-i Control Tools" software package. This allows for simpler and faster commissioning.

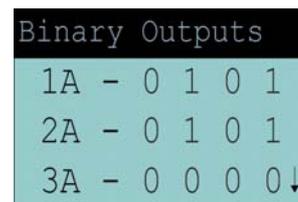
Addressing Unit within the AS-i Master

With the help of the new graphical display, the hand held unit is now obsolete. The slaves can now be easily addressed directly on the gateway. Slaves with extended address mode are detected automatically and are used only when allowed. This ensures that no two AS-i slaves with the same address will be on the same network.



Testing of connected periphery without additional test tools

Once the AS-i is put into operation, the cabling and the connected sensors and actuators can be tested, inputs can be read and outputs can be set and even analog sensors and actuators can be checked just using the Gateway with graphical display.



On-board Diagnostics:

Configuration fault, periphery fault

At a glance, the display shows the configuration faults (missing slave, additional slave detected, wrong slave type) as well as periphery faults, such as a short circuit at a sensor cable. This allows the user to get the proper information to solve the problem in the shortest amount of time.

```
actual config
0A   | 1A-Cf
2Ax  | 3Ad
4p   | 5A ↓
```

Detection of occasional faults

A list of slaves, which have previously caused an error, is also available through the graphical display. This can be very helpful in solving problems.

```
Reset ↑
APF- | 1A-x
2A-  | 3A-
4A-x | 5A ↓
```

Scope functions shown on the display

While strange phenomena can occur as the AS-i gets to its limits (e. g. cable length >100 m, EMC problems), the AS-i Gateway with Graphical Display has on-board diagnostic tools. With the help of the AS-i error counters the user can easily check the quality of AS-i communications. The user can then test the impact of any actions taken.

```
Error Counters
Reset
APF - C
1A - 34 ↓
```

Accessories:

- Software "AS-i Control Tools" (Article no. BW1203)
- Serial PROFIBUS Master (Article no. BW1258)
- PROFIBUS DP Master Simulator DP V0 and DP V1 (Article no. BW1257)
- Transmission cords (Article no. BW1097)

AS-i/PROFIBUS Gateway

AS-i/PROFIBUS DP Gateway/Link

1 AS-i Master
PROFIBUS Slave

AS-i Specification 2.1

AS-i Scope function



IP20



graphical display



Graphical display	Art. no. BW1307	 
Graphical display	Art. no. BW1249	
Operating current	Master power supply A Approx. 200 mA out of AS-i circuit	
Operating voltage	AS-i voltage 30 V DC	
PROFIBUS Interface	According to DIN 19245 part 3	
Baud rates	9,6 Kbaud up to 12000 Kbaud, automatic recognition	
DP functions	Imaging of the AS-i slaves as I/O Data of the PROFIBUS Complete diagnosis and configuration via the PROFIBUS DP	
AS-i cycle time	150 µs*(Number of slaves + 1)	
Displays		
LCD	Displaying slave addresses and error messages	
LED green (power)	Power on	
LED green (ser active)	Communication and control information	
LED red (config error)	Configuration error	
LED green (U AS-i)	AS-i voltage OK	
LED green (AS-i active)	AS-i normal operation active	
LED green (prg enable)	Automatic address programming enabled	
LED yellow (prj mode)	The Master is in configuration mode	
Push-buttons	2 (mode/set), devices with graphical display: 4	
Voltage of insulation	≥ 500 V	
EMC directions	EN 50082, EN 50081	
Operating temperature	0°C ... +55°C	
Storage temperature	-25°C ... +85°C	
Housing	Housing for DIN-rail mounting	
Dimensions (L, W, H)	75 mm, 100 mm, 110 mm	
Protection category (DIN 40 050)	Housing IP40 Terminals IP20	
Tolerable loading referring to impacts and vibrations	Screw-mounting: b ≤ 30 g, T ≤ 11 ms Spring lock-mounting: b ≤ 15 g, T ≤ 11 ms Screw-mounting: f ≤ 55 Hz, a ≤ 1 mm Spring lock-mounting: f ≤ 55 Hz, a ≤ 0,5 mm	
Weight	420 g	

AS-i/PROFIBUS Gateway

AS-i/PROFIBUS DP Gateway/Link

2 AS-i Masters

AS-i Specification 2.1

AS-i Scope function



graphical display



Graphical display	Art. no. BW1309	 
Operating current	Master power supply A with plug connectors: Approx. 200 mA out of AS-i circuit 1 Approx. 70 mA out of AS-i circuit 2 without plug connectors Approx. 150 mA out of power supply Approx. 70 mA out of AS-i circuit 1 Approx. 70 mA out of AS-i circuit 2	
Operating voltage	24 V DC (18-31,6 V DC)	
PROFIBUS interface	According to DIN 19245 part 1-3	
Baud rates	9,6 Kbaud up to 12000 Kbaud, automatic recognition	
DP-Functions	Imaging of the AS-i slaves as I/O Data of the PROFIBUS. Complete diagnosis and configuration via the PROFIBUS DP	
AS-i cycle time	150 µs*(Number of slaves + 1)	
Displays		
LCD	Displaying slave addresses and error messages	
LED green (AS-i 2)	AS-i network 1 / AS-i network 2	
LED green (ser active)	Communication and control information	
LED red (config error)	Configuration error	
LED green (power)	Power on	
LED green (U AS-i)	AS-i voltage OK	
LED green (prg enable)	Automatic address programming enabled	
LED yellow (prj mode)	The Master is in configuration mode	
Push-buttons	4	
Voltage of insulation	≥ 500 V	
EMC directions	EN 50082, EN 50081	
Operating temperature	0°C ... +55°C	
Storage temperature	-25°C ... +85°C	
Housing	Housing for DIN-rail mounting	
Dimensions (L, W, H)	75 mm, 100 mm, 110 mm	
Protection category DIN 40 050	Housing IP40 Terminals IP20	
Weight	420 g	