AMKASYN
Servo inverter AN/AZ/AW
Option card AW-IWI / AW-IWR
Pulse transmission

Version: 1998/14
Part No.: 26964

Table of contents

Important advice:

Touching of the electrical connections on the card must be avoided, otherwise electronic components could be destroyed through static discharge.
Take card directly out of packing and install it in the assigned AW module.

1 AW Option card AW-IWI „Pulse transmission“

(only for AW modules AW 1,3/2,6, AW 2,5/5, AW 4,5/9 and redesigned AW modules AW xx/yy-2 with AW-R01 controller card.)

The option card AW-IWI may only be used together with a motor with I/T type encoder.

The AW-IWI card is used to transmit motor encoder signals to a higher ranking controller.
The sine-wave encoder signals are converted into square-wave pulses (two channels in quadrature and a reference pulse). The square wave output can serve as actual position feedback for an external CNC or as master pulses for a separate drive system in synchronous control. To increase the resolution the number of encoder pulses can be multiplied by factor 1, 2, 5 or 10.

The AW-IWI outputs are optically isolated, short-circuit protected line drivers according to EIA standard RS422. The 5V-voltage for the output signals must be supplied by the customer.

Output signal level:	U_{high}	>=	2V at $-I_{aHigh}$	=	40mA
	U_{low}	<=	0,4V at I_{aLow}	=	40mA
Output load capability:	$-I_{high}$	<=	40 mA		
	I_{low}	<=	40 mA		
Switching times:	Rise time	<=	20 ns		
	Fall time	<=	20 ns		
External voltage supply:	5V / 150 mA				

Max. output frequency: 250 kHz.
With 10-fold evaluation the max. input frequency from motor encoder is limited to 25 kHz (max. input frequency without limitation: 100 kHz).
The minimum pulse-edge interval at 250 kHz is ≥ 500ns.

The outputs are led to a 9-pole D-SUB connector (X60). The mating connector is interlocked by 2 screws with UNC4-40 thread.

Under usage of shielded, twisted-pair cable, the maximum distance between inverter and follower electronics is limited to 100 m (325 ft). The cable shield has to be grounded (PE) at the receiver end through the metallized D-SUB shell.
(For pulse transmission within one AMKASYN system the shield must be grounded at both ends!)

Pulse transmission multiplier:

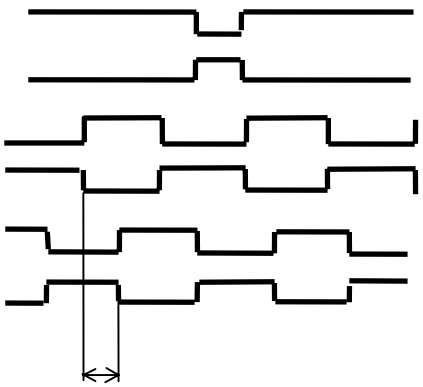
The required factor must be entered into ID 32890. Only the factors 1, 2, 5 or 10 are permitted. Other factors will generate an error during system booting.

1.1 Option card variant AW-IWR

The AW option card version AW-IWR is used for pulse transmission for motors with resolver.

For pulse transmission the internal resolution is fixed at 1024 pulses/rev. for transmission (2 channels in quadrature and a reference pulse).
ID32890 must be set to „1“.

1.1.1 Pin assignment X60 (female connector)

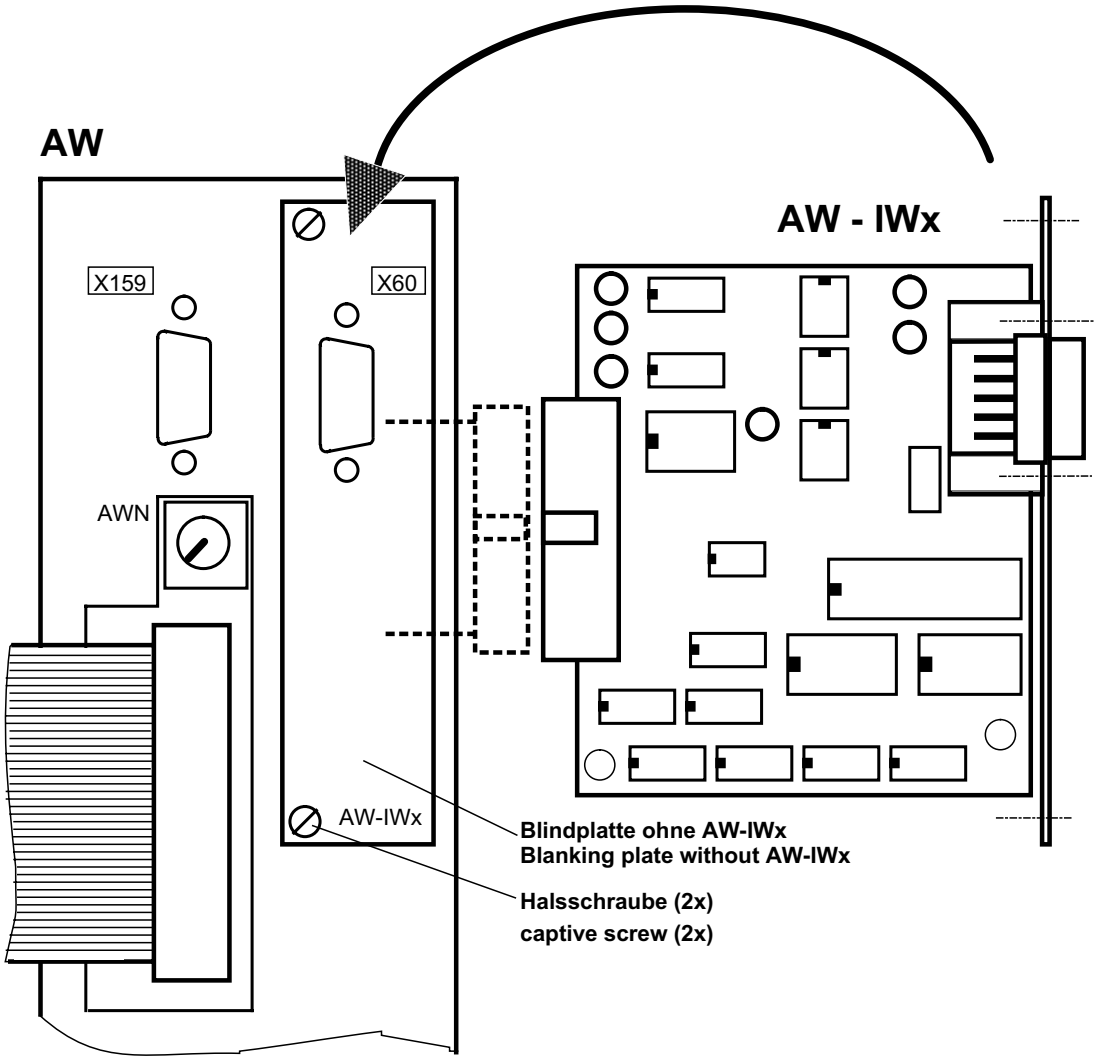
D-Sub-Pin	Signal designation		Output signals after multiplication
1	Reference pulse inverted	Ua0-	
2	Reference pulse	Ua0	
3	Channel 1 inverted	Ua1-	
4	Channel 1	Ua1	
5	Channel 2 inverted	Ua2-	
6	Channel 2	Ua2	
7	+5V external supply	V+	
8	Signal common 0V ext	V-	
9	-	-	

1.2 Connection and installation of the option card AW-IWx in AW modules AW 1,3/2,6, - AW 4,5/9 and AW xx/yy-2:

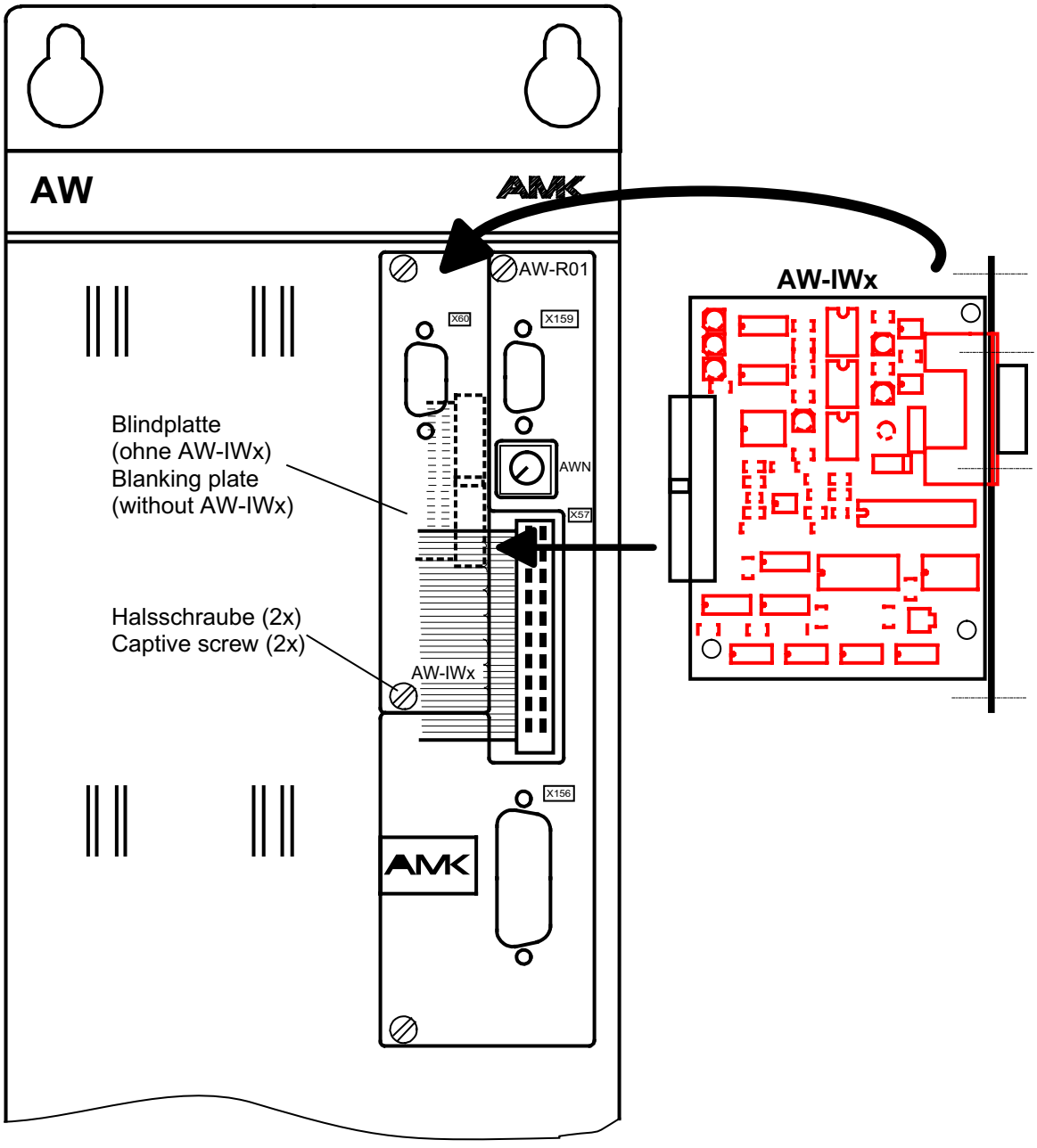
The AW-IWx card must be inserted into the slot at the top right of the AW module. The slot normally is covered by a blanking plate:

1. Open the blanking plate by loosening the 2 captive screws.
2. Disconnect the ribbon cable from the socket on the back of the blanking plate, then remove the blanking plate.
3. Carefully connect the ribbon cable to the socket on AW-IWx card. Ensure that it is firmly connected.
4. Carefully insert AW-IWx card into the slot. Don’t squeeze or buckle the ribbon cable! Tighten the captive screws on the AW-IWx card.

1.3 Connection and installation of option card AW-IWx in AW modules AW 1,3/2,6, - AW 4,5/9:



1.4 Connection and installation of option card AW-IWx in AW modules AW xx/yy-2:



2 Imprint

Title **PDK_026964_AZAW_AWIWI-IWR_en**

Purpose **Hardwaredescription option card AW-IWI / AW-IWR "pulse transmission"**

Part number **26964**

History

Publication date
1998/14

Reservation Modifications to the content of the documentation and the delivery options for the products are reserved.

Service Tel. no. **+49/(0)7021 / 5005-191, Fax -193**

Office hours:
Mon.-Fri. 7:30 - 16:30, on weekends and public holidays the phone number of the standby service personnel is available on the answering machine.

You can assist us in finding a fast and reliable solution for the malfunction by providing our service personnel with the following:

- Information located on the ID plate of the devices
- The software version
- The device setup and the application
- The type of malfunction, suspected cause of the failure
- The diagnostic messages (error codes)

Publisher AMK Arnold Müller Antriebs- und Steuerungstechnik GmbH & Co. KG
Gaußstraße 37 – 39, 73230 Kirchheim/Teck

Tel.: 07021/5005-0, Fax: 07021/5005-176
E-mail: info@amk-antriebe.de

Additional information www.amk-antriebe.de

AMK Arnold Müller GmbH & Co. KG
Antriebs- und Steuerungstechnik
Gaußstrasse 37 – 39
D-73230 Kirchheim/Teck
Telefon: +49 (0) 70 21 / 50 05-0
Telefax: +49 (0) 70 21 / 50 05-199
info@amk-antriebe.de
www.amk-antriebe.de