

## 17. Resolver plug-in module 8BAC0122.000-1

### 17.1 General description

The Resolver plug-in module 8BAC0122.000-1 can be used in an ACOPOSMulti slot. The module contains a resolver interface for evaluating BRX resolvers.

The plug-in module handles the output from resolvers which are built into B&R servo motors or used as an encoder for external axes. This resolver delivers the absolute position over one revolution. Normally, the movement path is longer than one revolution. In this case, a reference switch must be used and a homing procedure carried out.

The encoder input signals are monitored. In this way, broken connections, shorted lines and encoder supply failure (reference signal) can be recognized.

During start-up, the AC122 module is automatically identified by the ACOPOSMulti operating system. Making automatic adjustments to the motor (resolution parameter) and reading the motor parameters and limit values is not possible because the resolver does not have parameter memory like the EnDat encoder.

If the precision, resolution, bandwidth or ease of setting parameters is not sufficient with the resolver, the EnDat system should be used (see ).

### 17.2 Order data


Model number	Short description	Figure
8BAC0122.000-1	ACOPOSMulti plug-in module, resolver interface	

Table 60: Order data - resolver plug-in module 8BAC0122

## Technical data • Resolver plug-in module 8BAC0122.000-1

Optional accessories				
Model number	Amount	Short description	Comment	Page
8CR005.12-1	1	Resolver cable, length 5m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intercontec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	---	
8CR007.12-1	1	Resolver cable, length 7m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intercontec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	---	
8CR010.12-1	1	Resolver cable, length 10m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intercontec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	---	
8CR015.12-1	1	Resolver cable, length 15m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intercontec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	---	
8CR020.12-1	1	Resolver cable, length 20m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intercontec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	---	
8CR025.12-1	1	Resolver cable, length 25m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intercontec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	---	

Table 61: Optional accessory for resolver plug-in module 8BAC0122

## 17.3 Technical data

Product ID	8BAC0122.000-1
<b>General information</b>	
C-UL-US listed	Yes
Module type	ACOPOSmulti plug-in module
Slot <sup>1)</sup>	Slots 1 and 2
Max. power consumption	1 W
<b>Encoder connection <sup>2)</sup></b>	
Connection, module-side	9-pin DSUB socket
Indicators	UP/DN LEDs
Electrical isolation Encoder - ACOPOSmulti	No
Encoder monitoring	Yes
Max. encoder cable length	100 m

Table 62: Technical data - resolver plug-in module 8BAC0122

<b>Product ID</b>	<b>8BAC0122.000-1</b>
<b>Encoder supply</b>	
Signal transfer	Differential signals
Frequency	10 kHz
Output voltage	Typ. $3 V_{\text{eff}}$
Output current	Max. $50 \text{ mA}_{\text{eff}}$
Protective measures Overload protection Short circuit protection	Yes Yes
<b>Analog inputs</b>	
Signal transfer	Differential signals
Input voltage	Resolver transfer: $0.5 \pm 10\%$
Input impedance	$10.4 \text{ k}\Omega - j 11.1 \text{ k}\Omega$
Common mode voltage	Max. $\pm 20 \text{ V}$
ADC resolution	14-bit
<b>Position</b>	
Resolution @ $\ddot{u} = 0.5$	Number of pole pairs * 22600
Bandwidth	In preparation
Accuracy	In preparation
Noise	In preparation
<b>Operational conditions</b>	
Ambient temperature during operation	... <sup>3)</sup>
Relative humidity during operation	... <sup>3)</sup>
<b>Storage and transport conditions</b>	
Storage temperature	-25 to +55°C
Relative humidity during storage	5 to 95%, non-condensing
Transport temperature	-25 to +70°C
Relative humidity during transport	95% at +40°C

Table 62: Technical data - resolver plug-in module 8BAC0122 (Forts.)

- 1) The 8BAC0122.000-1 is an encoder module. Two encoder modules can also be inserted. In this case, the encoder module in the first slot automatically serves as motor feedback for the first axis and the encoder module in the second slot serves as motor feedback for the second axis. The second slot can be used for other purposes when in single-axis operation.
- 2) The resolver must be wired using a cable with a single shield and twisted pair signal lines.
- 3) ACOPOSmulti plug-in modules can be used in an ACOPOSmulti inverter or power supply module; the corresponding values can be found in the technical data of the respective ACOPOSmulti inverter or power supply module.

## 17.4 Indicators

The indicators (UP/DN LEDs) are located on the front of the ACOPOSmulti drive or power supply module where the plug-in module is installed.

The UP/DN LEDs are lit depending on the rotational direction and the speed of the connected encoder. <sup>1)</sup>

UP LED ... indicates when the encoder position changes in the positive direction.

DN LED ... indicates when the encoder position changes in the negative direction.

## 17.5 Firmware

The firmware is part of the operating system for the ACOPOSmulti drive system. The firmware is updated by updating the ACOPOSmulti operating system.

1) The count direction of the encoder can be configured in Automation Studio. However, changing the count direction in Automation Studio does not change the actual count direction of the encoder and therefore does not affect the UP/DN LEDs!

### 8.3 Resolver interface 8BAC0122.000-1

#### 8.3.1 Pin assignments

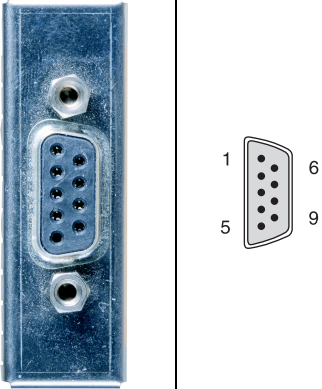
Figure	X11	Pin	Name <sup>1)</sup>	Function	Typical wire colors for the resolver <sup>2)</sup>
		1	T+	Temperature sensor +	---
		2	T-	Temperature sensor -	---
		3	S4	Sine input +	Blue
		4	S1	Cosine input -	Red
		5	R2	Reference output +	black/white (or yellow/white)
		6	---	---	---
		7	S2	Sine input -	Yellow
		8	S3	Cosine input +	Black
		9	R1	Reference output -	red/white

Table 163: Pin assignments - resolver interface 8BAC0122.000-1

1) The names are the same as those used by leading manufacturers (Tanagawa, Tyco, LTN).

2) This refers to the wire colors of the line connected directly to the resolver and used universally by leading manufacturers (Tanagawa, Tyco, LTN). **This does not refer to the wire colors of the B&R resolver cable!**

### 8.3.2 Input/output circuit diagram

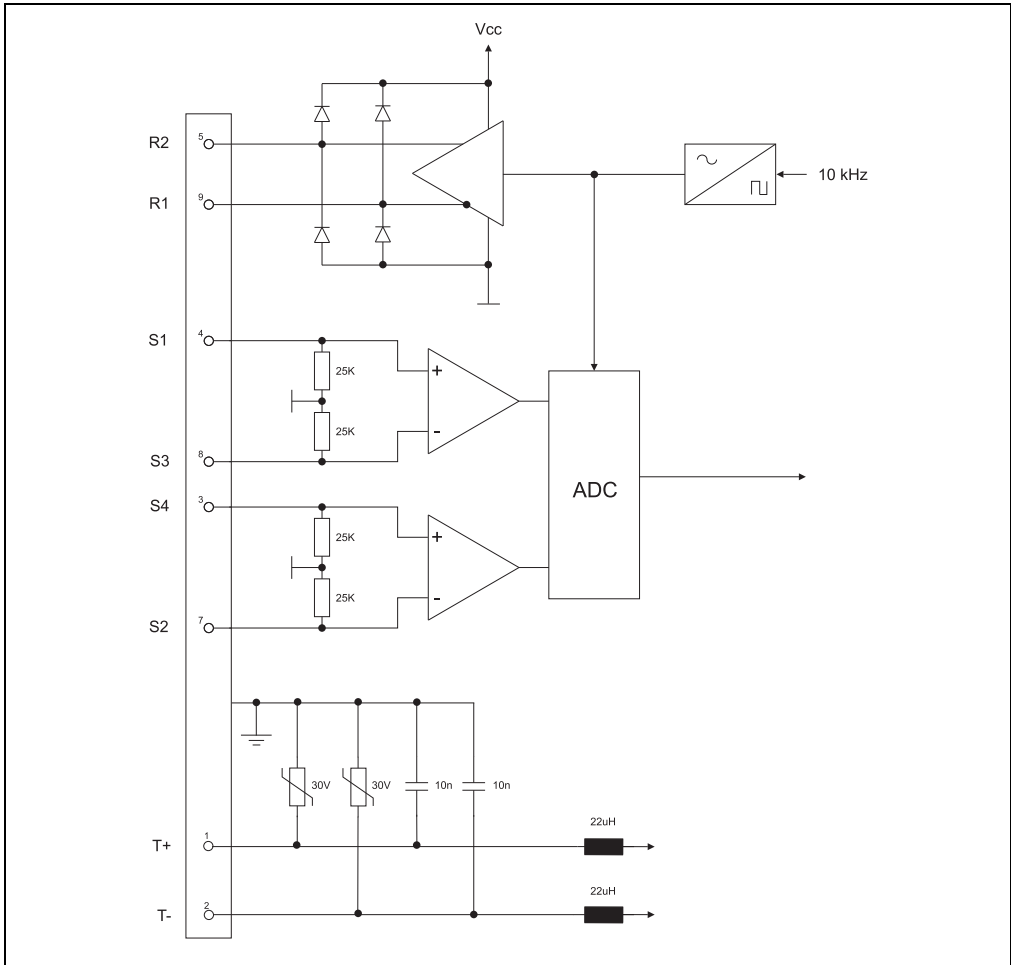


Figure 124: Input/output circuit diagram - Resolver interface 8BAC0122.000-1