

8AC131.60-1

1 General information

The AC131 plug-in module provides a maximum of 2 analog inputs (± 10 V differential inputs or single-ended inputs) and 2 digital inputs or digital outputs.

The analog inputs have a resolution of 12 bits and are scanned synchronously using the 50 μ s clock for the ACOPOS servo drive. The analog inputs have a 10 kHz analog input filter (3rd order low pass).

The digital inputs and outputs can be configured individually as input or output. The digital inputs are equipped with a counter function. The digital outputs (push-pull) can be read.

2 Order data

Model number	Short description	Figure
	Plug-in modules	
8AC131.60-1	ACOPOS plug-in module, 2 analog inputs ± 10 V, 2 digital I/Os configurable as 24 V input or output 45 mA, order terminal block TB712 separately!	
	Required accessories	
	Terminal blocks	
7TB712.9	Accessory terminal block, 12-pin, screw clamps 1.5 mm ²	
7TB712.91	Accessory terminal block, 12-pin, cage clamp terminal block 1.5 mm ²	
	Optional accessories	
7TB712:90-02	2003 B&R terminal block, 12 pin 20 pieces, screw clamp	
7TB712:91-02	2003 B&R terminal block, 12 pin 20 pieces, cage clamp	

Table 1: 8AC131.60-1 - Order data

3 Technical data

Model number	8AC131.60-1
General information	
Module type	ACOPOS plug-in module
B&R ID code	0x11E9
Slot	Slots 2, 3 and 4
Power consumption	Max. 1 W
Certifications	
CE	Yes
UL	cULus E225616
KC	Power conversion equipment
	Yes
Inputs/Outputs	
Module-side connection	12-pin multipoint connector
Status indicators	24 V LED
Configuration of digital inputs/outputs	Individually configurable as digital input or output
Power supply	
Voltage monitoring (24 V - LED)	Yes, supply voltage >18 V
Reverse polarity protection	Yes
Power supply	
Minimum	18 VDC
Nominal	24 VDC
Maximum	30 VDC
Digital inputs	
Quantity	Max. 2
Modulation compared to ground potential	Max. ± 50 V
Circuit	Sink
Input current at nominal voltage	Approx. 8 mA

Table 2: 8AC131.60-1 - Technical data

Model number	8AC131.60-1
Switching threshold	
Low	<5 V
High	>15 V
Input voltage	
Nominal	24 VDC
Maximum	30 VDC
Electrical isolation	
Channel - ACOPOS	Yes
Channel - Channel	No
Switching delay	
Counter	Max. 5 µs
Digital input	Max. 55 µs (digitally filtered)
Event counters	
Signal form	Square wave pulse
Input frequency	Max. 100 kHz
Counter size	16-bit
Inputs	
Input 1	Counter 1
Input 2	Counter 2
Analog inputs	
Quantity	2
Digital converter resolution	12-bit
Conversion time	<50 µs
Output format	INT16 \$8000 - \$7FF0 LSB = \$0010 = 4.883 mV
Variant	Differential input or single-ended input
Electrical isolation	
Input - ACOPOS	Yes
Input - Input	No
Input signal	
Nominal	-10 to +10 V
Maximum	-15 to +15 V
Operating modes	Cyclic measurement synchronous to 50 µs ACOPOS clock
Conversion procedure	Successive approximation
Input filter	Analog third-order low-pass filter / cutoff frequency: 10 kHz
Gain drift	Max. ±0.006% / °C ¹⁾
Offset drift	Max. ±0.0005% / °C ¹⁾
Common-mode rejection	
DC	Min. -73 dB
50 Hz	Min. -73 dB
Crosstalk between analog inputs	Min. -90 dB at 1 kHz
Nonlinearity	±1 LSB
Differential input impedance	>10 MΩ
Modulation compared to ground potential	Max. ±50 V
Modulation between analog input channels	Max. ±5 V
Basic accuracy at 25°C	±0.05% ¹⁾
Digital outputs	
Quantity	Max. 2
Readable outputs	Yes
Continuous current	Max. 45 mA
Short-circuit current at 24 V (until cutoff)	Approx. 0.3 A
Switching frequency (resistive load)	Max. 100 kHz
Switching delay	Max. 5 µs
Type	Push-Pull transistor outputs
Electrical isolation	
Output - ACOPOS	Yes
Output - Output	No
Switching voltage	
Minimum	18 VDC
Nominal	24 VDC
Maximum	30 VDC
Protection	
Short-circuit proof	Yes
Overload-proof	Yes
Ambient conditions	
Temperature	
Operation	
Nominal	5 to 40°C
Maximum	55°C
Storage	-25 to 55°C
Transport	-25 to 70°C

Table 2: 8AC131.60-1 - Technical data

Model number	8AC131.60-1
Relative humidity	
Operation	5 to 85%
Storage	5 to 95%
Transport	Max. 95% at 40°C

Table 2: 8AC131.60-1 - Technical data

1) Based on the measurement range end value.

4 Status indicators

The 24V LED is lit as soon as the supply voltage for the plug-in module goes above 18 VDC.

5 Firmware

The firmware is part of the operating system for the ACOPOS servo drives. Firmware is updated by updating the ACOPOS operating system.

6 Wiring

6.1 Pinout

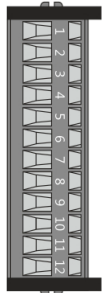
Figure	X11	Pin	Name	Function
		1	Analog I 1 +	Analog input 1 plus
		2	Analog I 1 -	Analog input 1 minus
		3	COM (1, 2, 5, 6)	0 V analog input
		4	Shield	Shield
		5	Analog I 2 +	Analog input 2 plus
		6	Analog I 2 -	Analog input 2 minus
		7	COM (1, 2, 5, 6)	0 V analog input
		8	Shield	Shield
		9	Digital I/O 1	Digital input/output 1
		10	Digital I/O 2	Digital input/output 2
		11	+24 V	+24 V supply
		12	COM (9 - 11)	0 V supply
Terminal cross sections		[mm²]		[AWG]
Solid core / multiple-conductor lines		0.5 - 1.5		20 - 14
Flexible, multiple wire line				
Without wire end sleeves		0.5 - 1.5		20 - 14
With wire end sleeves		0.5 - 1.5		20 - 14
Approval Data (UL/C-UL-US- and CSA)				
UL/C-UL-US		---		26 - 14
CSA		---		26 - 14
Tightening torque for the terminal screws [Nm]		0.2 ... 0.25		

Table 3: AC131 mixed module - Pinout

6.2 Input/Output circuit diagram

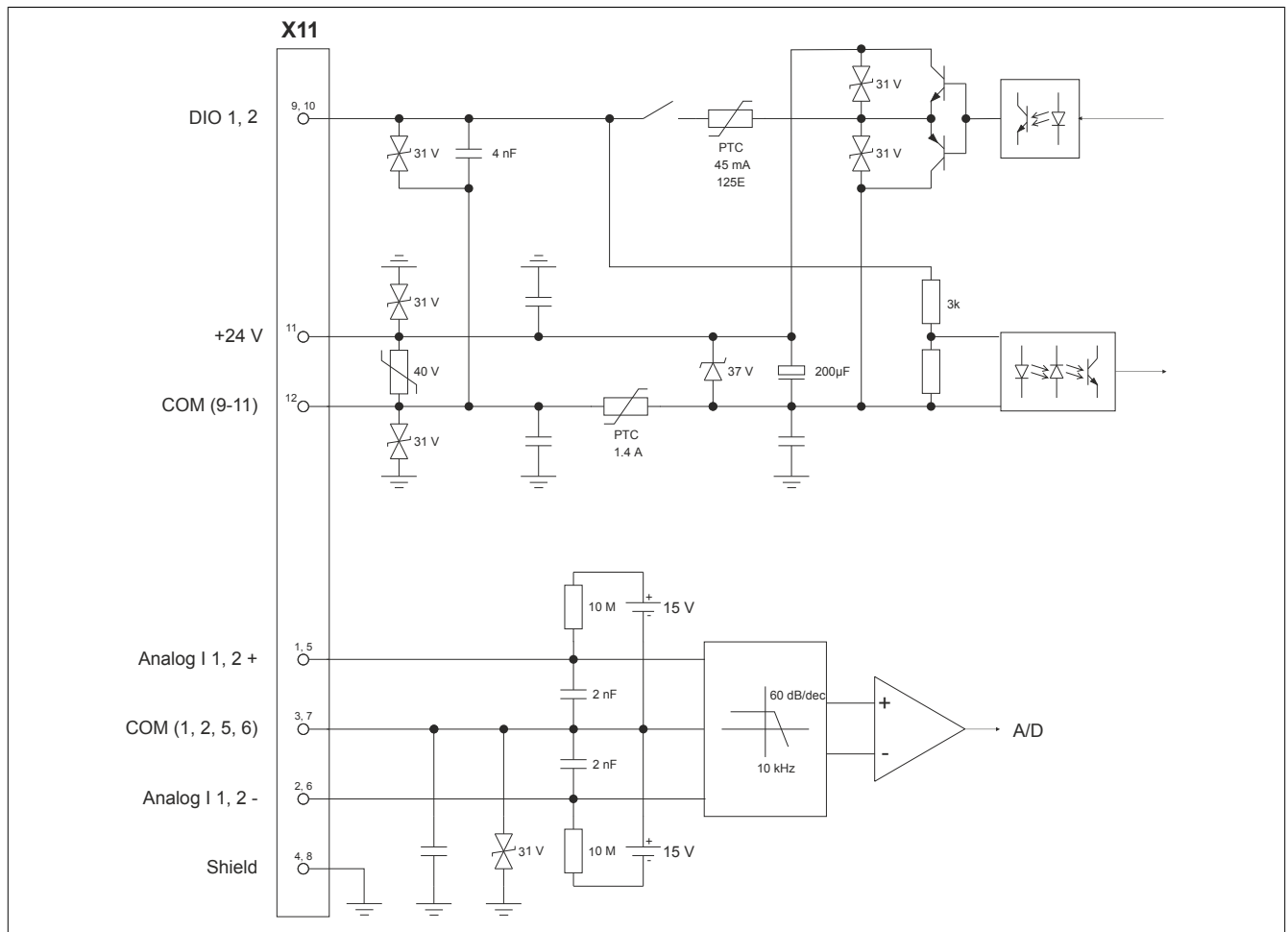


Figure 1: AC131 mixed module - Input/Output circuit diagram