

Resolver-to-digital converter



The MSX-RDC-17 is a device for supplying and acquiring a resolver. It converts the position value given by the resolver into a digital incremental output signal. The resolution of the incremental encoder output can be defined using the switch on the front side of the MSX-RDC-17.

MSX-RDC-17

Resolver-to-digital converter

Conversion of resolver signals into digital signals

4 different resolution settings

Features

Power supply

Nominal voltage: 5 V

Resolver output/input

- Frequency: 10 kHz

Incremental encoder output

- Output signals: incremental A+, A-, B+, B-, Index+, Index-
- Output type: differential, RS485
- Resolution: 10-/12-/14-/16-bit

Power supply connector

For the power supply of the MSX-RDC-17, a 4-pin screw terminal is fixed on the bottom side of the housing.

Pin No.	Signal
1	+V _s (5 V)
2	Ground
3	Ground
4	+V _s (5 V)

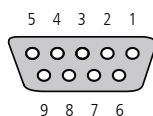


The Ground and the supply pins are connected internally with each other. For less current flow over the terminals, please connect all four pins externally with each other!

Resolver connector

The resolver has to be connected to the 9-pin D-Sub female connector on the front side of the MSX-RDC-17.

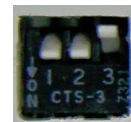
Pin No.	Signal
1	Ref-
2	Not connected
3	Not connected
4	Not connected
5	SIN+
6	SIN-
7	Ref+
8	COS+
9	COS-
Shield	PE



Switch

On the front side of the MSX-RDC-17, a switch panel with three switches is installed. Switches 1 and 2 are used for setting the resolution of the incremental encoder output. Switch 3 allows you to reset the MSX-RDC-17. To do a reset, you have to switch on switch 3 for a short time and then switch it off again. Please do not leave switch 3 switched on permanently, because the MSX-RDC-17 is not functional with this switch position!

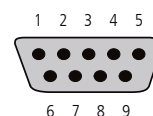
1	2	3	
OFF	OFF	OFF	16-bit resolution
OFF	ON	OFF	14-bit resolution
ON	OFF	OFF	12-bit resolution
ON	ON	OFF	10-bit resolution
X	X	ON	Whole device in reset state



Incremental encoder output

The incremental encoder signals are available at the 9-pin D-Sub male connector of the MSX-RDC-17.

Pin No.	Signal
1	Ground
2	Index-
3	Index+
4	A-
5	A+
6	Not connected
7	+V _s
8	B-
9	B+
Shield	PE



Specifications*

Power supply

Nominal voltage:	+5 V
Supply voltage:	+4.9 V to +5.25 V
Current consumption at 5 V:	140 mA (at 100 rps / 16-bit resolution)
Reverse voltage protection:	-6 V

Resolver output/input

Output reference signal

Amplitude:	7 V _{pp} (differential)
Frequency:	10 kHz
Max. output current:	100 mA

Input signals

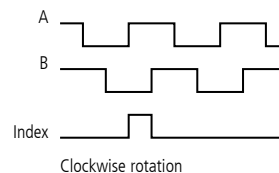
Max. amplitude:	4 V _{pp}
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Incremental encoder output

Output signals:	A+, A-, B+, B-, Index+, Index-	
Output type:	differential, RS485	
Nominal voltage:	+5 V	
Max. output current:	100 mA	
Resolution:	selectable via switch:	A/B pulse / revolution:
	10-bit	256
	12-bit	1024
	14-bit	4096
	16-bit	16384
Accuracy:	±5 arcmin	
Max. speed:	depends on the selected resolution	
	10-bit:	2500 rps
	12-bit:	1000 rps
	14-bit:	500 rps
	16-bit:	125 rps

Index signal (incremental encoder output)

An Index pulse is generated when the absolute angular position passes through 0.



Intended Use

The resolver-to-digital converter MSX-RDC-17 has to be used as electrical equipment for measurement, control and laboratory pursuant to the norm EN 61010-1 (IEC 61010-1).

The power supply for the resolver-to-digital converter MSX-RDC-17 must fulfil the requirements of IEC 60950-1 (SELV) or EN 60950-1 (SELV) and EN 55022 or IEC/CISPR 22 and EN 55024 or IEC/CISPR 24.

Usage restrictions

The resolver-to-digital converter MSX-RDC-17 must not be used as safety related part (SRP).

The resolver-to-digital converter MSX-RDC-17 must not be used for safety related functions, for example for emergency stop functions.

The resolver-to-digital converter MSX-RDC-17 must not be used in potentially explosive atmospheres.

The resolver-to-digital converter MSX-RDC-17 must not be used as electrical equipment according to the Low Voltage Directive 2006/95/EC.

Limits of use

All safety information and the instructions on this data sheet must be followed to ensure proper intended use.

Uses of the resolver-to-digital converter beyond these specifications are considered as improper use. The manufacturer is not liable for damages resulting from improper use.

The resolver-to-digital converter must remain in its anti-static packaging until it is installed.

Please do not delete the identification numbers of the resolver-to-digital converter or the warranty claim will be invalid.

Ordering information

MSX-RDC-17

Resolver-to-digital converter, conversion into digital signals, 4 different resolution settings.

*Preliminary product information