MERLIN
Measurement Module for Automotive Interiors

- 8 measurement channels for resistance measurement
- 8 measurement channels for current measurement
- EtherCAT interface for integration into test systems
- Adjustable measurement range

Brief description	The compact Merlin measurement module can be used in electrical test applications in production and development. The measurement module performs all required resistance and current measurements on a test system. The module is suited to test a variety of components in the automotive sector. It can be used in test systems for door panels, control elements, car seats, window regulator motors, roof control modules etc.
Current measurement	For current measurement, a total of 8 measurement channels can be used to supply all consumers on a car seat with voltage separately and to switch them on and off. Each of these supply channels is equipped with a fast current measurement channel.
Resistance measurement	A total of 8 measurement channels are available for resistance measurement, with automatically or permanently set measurement ranges.
Interfaces	The measurement module can be integrated into a test bench concept via the EtherCAT interface, which transfers configurations and queries measurement data.
Software integration	NI LabVIEW library or DLL for integration into measurement applications, recording of measurement curves and service functions.
Hardware integration	EtherCAT interface for integration into a test bench concept.

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Module data	
Designation	MERLIN measurement module
Dimensions	19" 3HU standard slide-in module
Current supply	230 VAC
Interface	EtherCAT interface to the PC or controller
Software	NI LabVIEW library, DLL
Current measurement	
Number of measurement channels	8 current supplies with integrated current measurement
Measurement ranges	1 x 20 A, 2 x 10 A, 2 x 1A, 2 x 100 mA, 1 x 10 mA
Power supply unit, total	0-15 VDC, 0-50 A, all supply channels programmable via EtherCAT telegram
Resolution	16 bits
Transformation time	Configurable from 20 to 400 ms per measurement channel
Measurement error	± 0.5% relative to the final measurement range value
Current monitoring	Per supply channel, can be reset via EtherCAT telegram
Parallel operation	Possible across all 8 supply channels, max. total current of 50 A
Switch-off capability	Supply channels can be switched off individually; galvanic isolation
Resistance measurement	
Number of measurement channels	8
Measuring current limit	3 measurement channels with measuring current limit against accidental actuation of pyrotechnic devices such as airbags
Measurement ranges	Automatically or permanently set; per measurement channel 10 mΩ, 1 Ω, 10 Ω, 100 Ω, 1 kΩ, 10 kΩ, 100 kΩ, 1 MΩ, 10 MΩ adjustable via EtherCAT telegram
Resolution	16 bits
Transformation time	Min. 10 ms, depending on the measurement range and settings
Measurement error	± 0.5% relative to the final measurement range value
Parallel operation	Possible across all 8 measurement channels

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