Programmable multi-transducers

To measure up to 3 selectable variables in a heavy current system.

Customer benefit

- One measurement unit for up to three heavy current variables
- Fully programmable, therefore hardly any product variance. Reduced stocks
- Ideally suited to modernising existing plants
- EMC resistance far above legally stipulated limits
- PC software with password protection for configuration and commissioning
- Output signal(s) useable for display, registration and monitoring
- Safety through galvanic isolation of all circuits and shock-proof terminals

Application

The instruments of the programmable M56x transducer line are designed for measurement in electric distribution systems or industrial plants. User-defined measured variables can be issued via up to 3 bipolar, galvanicly isolated analogue outputs and used for on-site display or the connection to a supervisory system (e.g. PLC). The area of interest may be highlighted by the scale function.
The measuring system of the transducers has been designed for the acquisition of sinusoidal alternating current signals with low harmonic content. Contents up to the 11th harmonic are taken into consideration. These instruments are suited to measure after phase-angle controls or frequency converters only in a limited fashion. For very distorted signals or after full-wave controls the use of SINEAX CAM is recommended.
The transducer is connected via the PRKAB560 programming cable to the RS232 interface of the PC for programming. During commissioning, the output signals are simulated via PC software and measured values are retrieved and recorded.

Overview of instruments

Features	*M561*	*M562*	*M563*
Number of analogue outputs	1	2	3

Technical data

Meas. input: Nominal voltage 57.7…400 V (Ph-N) or 100…693 V (Ph-Ph)
Nominal current 1…6 A, nominal frequency 50 or 60 Hz
System configuration: Single-phase alternating current, 3/4-wire three-phase current with a balanced/unbalanced load, also in reduced phase-shift connection (2 voltages, 1 current)
Meas. output: Maximum output value 20 mA or customised 1…20 mA or 5…10 V
Output signal unipolar, bipolar, live-zero
Transfer characteristics: Invertible, with/without step (scale function)
Measuring cycle time 0.6…1.6 s, depending on measured variable(s) and programming
Accuracy: Class 0.2 (voltage and current), Class 0.5 (other variables)
Applications in reduced phase-shift connection: double class
Power supply: 24–60 V AC/DC or 85–230 V AC/DC (also internally from measurement input)
H x W x D: 69.1 x 105 x 112.5 mm, top-hat rail assembly

Stock variants

Article No.	*Type*	*Power supply (external)*	*Output signal*
158 411	M561 with 1 analogue output	24–60 V AC/DC	±20 mA
158 429		85–230 V AC/DC	
158 437	M562 with 2 analogue output	24–60 V AC/DC	
158 445		85–230 V AC/DC	
146 458	M563 with 3 analogue output	24–60 V AC/DC	
146 440		85–230 V AC/DC	

Accessories

For M560 configuration software see Page 60, for PRKAB560 programming cable see Page 66

SINEAX M561/M562/M563

Programmable multi-transducer line DME4

To acquire several variables of any heavy current system simultaneously.

Customer benefit

- Only one measuring unit for several heavy current variables, Class 0.2
- Fully programmable, therefore hardly any product variance. Reduced stocks
- Up to 693 V nominal voltage (between phases) in CAT III
- Integrated energy meters with programmable measured variable
- PC software with password protection for configuration and commissioning
- Output signal(s) useable for display, registration, metering and monitoring
- Safety through galvanic isolation of all circuits and shock-proof terminals (SINEAX)

Overview of instruments

Type	*DME442*	*DME424*	*DME406*	*DME400*	*DME401*	*DME440*
Input	100…693 V (Ph–Ph), 1…6 A, 16.7 /50/60 Hz					
Accuracy	Analogue outputs: 0.25%, measured variables of bus: 0.2%					
Analogue outputs	4 bipolar [mA or V]	2 bipolar [mA or V]	—	—	—	4 bipolar [mA or V]
Digital outputs	2	4	—	—	—	—
Meter	up to 2	up to 4	4	4	4	4
Bus	—	—	Profibus DP	LON	Modbus	Modbus

General application

The instruments of the programmable DME4 transducer line are designed for measurement in electric distribution systems or industrial plants. They are used where a high degree of accuracy and flexibility is demanded. Depending on the instrument type, user-defined measured variables are issued at analogue or digital outputs or all acquired variables may be polled via the bus.

The measuring system of the transducers has been designed for the acquisition of sinusoidal alternating current signals with low harmonic content. Portions up to the 15th harmonic are taken into consideration. These instruments are suited to measure after phase-angle controls, for applications after frequency converters they can only be used in a limited fashion . For very distorted signals or after zero crossing controls the use of SINEAX CAM is recommended.

For a comprehensive measured value display on site, the SINEAX A200 display unit can be connected to the serial RS232 interface of the converter in all instrument types of the DME4 line. In this way, all instantaneous or meter values can be displayed.

The transducer is connected via a 1:1 cable to the RS232 interface of the PC for programming. During commissioning, possible output signals can be simulated via PC software. The complete image of the system may be retrieved via the RS232 or a possible bus interface of the instrument, e.g. to check the correct connection.

Common technical data

Meas. input:	Nominal voltage 57.7…400 V (Ph-N) or 100…693 V (Ph-Ph), nominal current 1…6 A, nominal frequency 50, 60 or 16⅔ Hz
System configuration:	Single-phase alternating current, 3/4-wire three-phase current with balanced/unbalanced load or 3-wire three-phase current with balanced load in reduced phase-shift connection (2 voltages, 1 current)
Measurement output:	Depending on instrument type, measuring cycle time 0.13…0.99 s, depending on instrument type and programming
Accuracy:	State variables via bus interface: Class 0.2, measured variables at analogue outputs: Class 0.25 Active power meters: Class 1, reactive power meters: Class 2 Applications with reduced phase-shift connection: double class
Power supply:	24 – 60 V AC/DC or 85 – 230 V AC/DC or AC supply 100, 110, 230, 400, 500, 693 V AC (only DME400, 424, 442), also internally from measuring input
H x W x D:	69.1 x 105 x 112.5 mm, top-hat rail assembly (35 x 15 mm or 35 x 7.5 mm) or plug-in card European format, face plate width 14 TE (EURAX DME 442, 440)

Accessories

For DME4 configuration software see Page 60
For RS232 programming cable (1:1 connection cable) see Page 66
For 19" assembly rack for EURAX plug-in cards see Page 28
For SINEAX A200, display unit for the DME4 line see Page 28