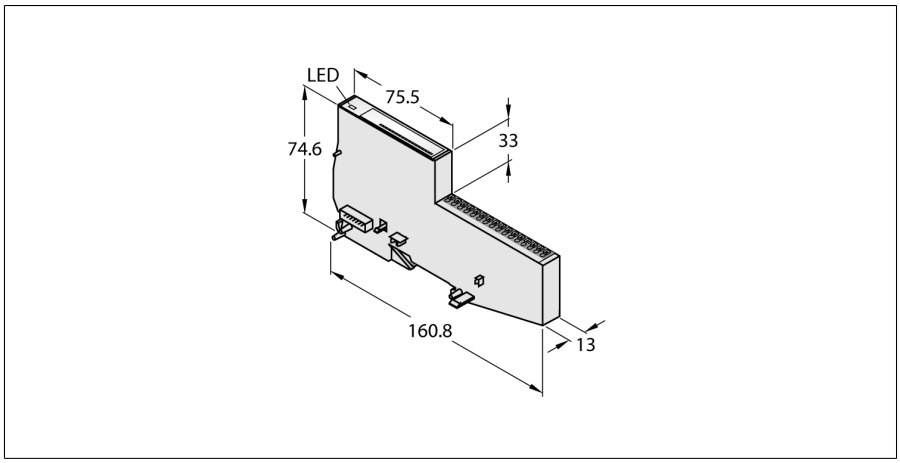
PRELIMINARY

BL20 Economy Module
3-Phase Energy Measurement Module
For Connecting Current Transformers (1 A/5 A)
BL20-E-3EMM-CT



Type	BL20-E-3EMM-CT
ID	100027913
Nominal current from field supply	≤ 110 mA
Nominal current from module bus	≤ 55 mA
Number of channels	3 phases + N
Rated power	30...300 VAC
Input signal	1 A (0.03… 1.1 A)/5 A (0.1… 5.5 A)
Frequency range	42…70 Hz
Sampling rate	8 kHz (phase angle: 1 kHz)
Frequency range of harmonic analysis	0…3200 Hz
Cut-off frequency of the input filter	7.2 kHz
Harmonic analysis	Up to 51st harmonic
Insulation	707 VDC 3.0 kVeff
Impulse withstand voltage	4 kV
Surge category	III
Temperature coefficient U/I	150 ppm/K
Electrical connection	Push-in
Dimensions (W x L x H)	13 x 160.8 x 74.6 mm
Approvals	CE
Ambient temperature	0…+55 °C
Storage temperature	-25…+85 °C
Relative humidity	15…95 %, no condensation allowed
Vibration test	Acc. to IEC 60068-2-6
Shock test	Acc. to IEC 60068-2-27
Drop and topple	Acc. to IEC 60068-2-31
Electromagnetic compatibility	Acc. to EN 61131-2
Protection class	IP20
MTTF	183 years acc. to SN 29500 (Ed. 99) 20 °C

- Fieldbus-independent
- Electronics and connection technology in one housing
- Connectivity: Push-in terminals
- Protection class IP20
- Electronics galvanically isolated from the field level via optocouplers
- Current/voltage measurement via three channels for up to three phases
- Separate channel for the neutral conductor
- Harmonic analysis up to 51st harmonic vibration at 50-Hz signals
- True RMS with high-resolution delta sigma modulation
- Sampling rate: 8 kSamples/s
- Accuracy: 0.5 % for U/I measurement (measuring range end value), 1.0 % for calculated values

Functional principle

Electronics and connection technology are integrated in the housing. A base module is not needed. Economy modules and modules with separate electronics and connection technology can be fitted into a station, provided the base modules feature tension spring connections.

The use of gateways makes economy modules completely independent from the higher level fieldbus.

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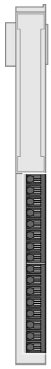
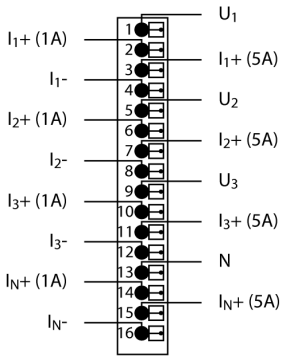
Connection Overview

	**Energy measurement terminal** Depending on the current transformer, the input for 1 A or 5 A must be used.	Pin assignment 

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Compatible economy gateways				
ID	**Type**	**Communication**	**Version and higher**	**Application**
6827329	BL20-E-GW-EN	Modbus TCP PROFINET EtherNet/IP	VN 4.0	PLC systems with Modbus TCP master or PC-based solutions using Modbus driver software. PLC systems with EtherNet/IP scanner (master). PLC systems with PROFINET master.
6827338	BL20-E-GW-EN/ET	Modbus TCP PROFINET EtherNet/IP	VN 4.0	PLC systems with Modbus TCP master or PC-based solutions using Modbus driver software. PLC systems with EtherNet/IP scanner (master). PLC systems with PROFINET master.
Compatible CODESYS V3 programmable gateways				
ID	**Type**	**Communication**	**Version and higher**	**Application**
6827393	BL20-PG-EN-V3	Modbus TCP PROFINET EtherNet/IP	/	PLC systems with Modbus TCP master or PC-based solutions using Modbus driver software. PLC systems with EtherNet/IP scanner (master). PLC systems with PROFINET master.
6827398	BL20-PG-EN-V3-WV	Modbus TCP PROFINET EtherNet/IP	/	PLC systems with Modbus TCP master or PC-based solutions using Modbus driver software. PLC systems with EtherNet/IP scanner (master). PLC systems with PROFINET master.

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