Recording and optimising energy consumption

Product Information

Metering module NZM-XMC

EATON
Powering Business Worldwide

MOELLER
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Metering and communication module for energy distribution and motor control centres

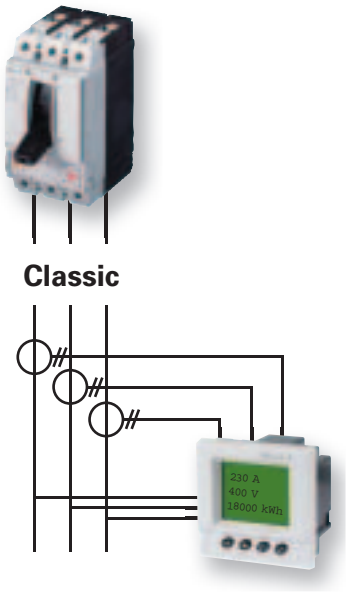
Recording energy consumption

The requirement for a simple metering function to detect the transferred energy is in demand with energy distribution and motor control centres. Energy is a precious resource and everyone is urged to conserve it. A prerequisite for reduction in consumption requires knowledge of the level of consumption, and accordingly simple sensors for recording energy consumption are becoming ever more important.

The product range

The new range of metering and communication modules (MCx) are specially designed for engineering and can be used universally in a voltage range from 35 V - 690 V and in a current range from 1.5 - 630 A. There are two sizes matched to the NZM current ranges. Size 2 (NZM2-XMC) extends up to 300 A and size 3 (NZM3-XMC) accordingly up to 630 A. Each of these sizes are available as 3 or 4-pole versions.

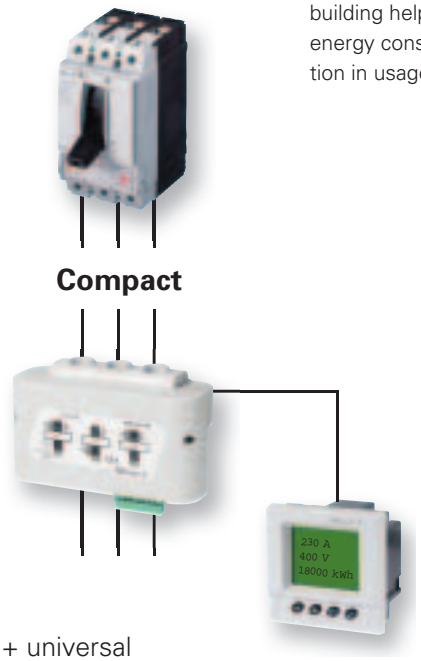
Recording energy usage in a building helps in the analysis of energy consumption and reduction in usage.



Classic

+ universal

- high level of wiring effort



Compact

+ universal
+ simple installation
+ low price

The new compact solution

A combination of current transformer, voltage tap-off, measurement electronics, fieldbus interface and display interface in an enclosure is a very interesting solution. Four individual devices (3 current transformers and 1 measurement device) are combined in a single enclosure. Considerable wiring and installation effort and expense are avoided. The installation of the metering and communication module can be undertaken at any location in the control panel. The system is independent of the switch design and model. All existing circuit-breakers and switch disconnectors can be used, only the minimum clearances required by the design of the respective switches must be observed. This solution offers a very large range of applications and can even be retrofitted in a short time to existing switchboards.

The recording of energy consumption is a prerequisite in industry for the avoidance of expensive energy usage peaks.

MCx as a data source for 3 recipients

All relevant data is provided for the control level in addition to the local display for on-site personnel. These include the current states ON/OFF/TRIP of the circuit-breaker as well as control of a remote operator for automatic switch functions. The **management level** is concerned with the present values of currents, voltages and powers which can be individually displayed as well as saved. The course for optimization of consumption can be set here.

Pre-processing in the MCx enables load shedding

Pre-processing means reducing the load on the processing stations. A simple form of optimization is load shedding. If a defined threshold is reached, a digital output can be controlled that is integrated into the interlock. A range of digital and analog input/output expansion boards are available for this extended functionality. These boards are installed in the base unit and can be supplied directly with the unit, or retrofitted later. The following expansion boards are available:

1. 2 outputs as a changeover contact
2. 4 outputs as NO contacts
3. 4 digital inputs / 4 digital outputs
4. 2 analog outputs 4 - 20 mA

As an intelligent pre-processing unit the MCx offers further information for the control and management level. For example, the **maximum values** of measured values can be calculated and issued over a time period, or **time window values** can also be mapped for a specific time. The MCx can also score points in terms of **diagnostics**. Load warnings can be issued and fault currents to earth can be detected and reported.

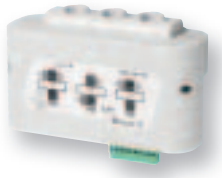
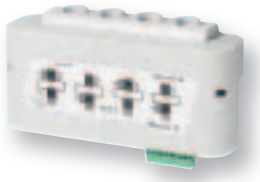
Summary

MCx is a component for modern energy distribution which can be easily mechanically integrated and where the measured values can be transferred on-location as well as via a fieldbus. It plays an important role in the area of recording energy consumption, control of switchgear, load shedding and diagnostics.

Mechanical connection

A central factor in its success is the simplicity of the mechanical installation of the devices. The cables or braids are wired through the apertures of the MCx to the switching/protective device. They can be mounted on both the incoming and outgoing side. The tunnel diameter in the respective size is rated so that the maximum cross-section passes through.

	MC2/3
Tunnel diameter	27.5 mm
Conductor cross-section with adapter	35 mm²-120 mm²
Conductor cross-section without adapter	95 mm²-185 mm²

	Moeller Type	Number of poles	Maximum rating	Main features
	NZM2-XMC-S0	3	300	Digital S_0 output
	NZM3-XMC-S0	3	630	Digital S_0 output
	NZM2-XMC-MB	3	300	+ MODBUS + DISPLAY INTERFACE
	NZM3-XMC-MB	3	630	+ MODBUS + DISPLAY INTERFACE
	NZM2-4-XMC-S0	4	300	Digital S_0 output
	NZM3-4-XMC-S0	4	630	Digital S_0 output
	NZM2-4-XMC-MB	4	300	+ MODBUS + DISPLAY INTERFACE
	NZM3-4-XMC-MB	4	630	+ MODBUS + DISPLAY INTERFACE
	NZM-XMC-DISP			Display for all Modbus types

	EXPANSION CARDS			
	NZM-XMCEX-ERL			Differential protection 300 mA
	NZM-XMCEX-MB			Modbus protocol
	NZM-XMCEX-AO			Analog output 4-20 mA
	NZM-XMCEX-2S			2 switched contacts
	NZM-XMCEX-4R			4 NO contacts
	NZM-XMCEX–4DI-4DO			4 digital input/outputs

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Issued by Moeller GmbH
Hein-Moeller-Str. 7-11
D-53115 Bonn

W1230-7614 en ip 05/09
Printed in Germany (05/09)
Article No.: 129003

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