

automation solutions

bachmann.

Measurement Accuracy Better than 1 mHz

Safe, integrated solutions. Excellent value for money.



SIMPLY
PRECISE

GMP232/x



SIMPLY
PRECISE

GMP232/x

**FULLY CERTIFIED TO DELIVER YOUR ENERGY
SAFELY INTO THE GRID**

**YOUR BENEFITS – STRAIGHTFORWARD.
SECURE. ON BUDGET.**

▶ Fulfil NGENO measurement accuracy requirements ≤ 1 mHz:

Bachmann's GMP232/x is fully certified to ensure no deviations from the required grid frequency range.

▶ Highly accurate voltage and current measurement:

Not only do we deliver best in class frequency measurement, our voltage and current measurement is also extremely accurate.

▶ Effortless value acquisition:

As a fully integrated system, the GMP232/x cannot be beaten when it comes to installation and commissioning.

▶ Exceptional price/performance ratio with maximum flexibility:

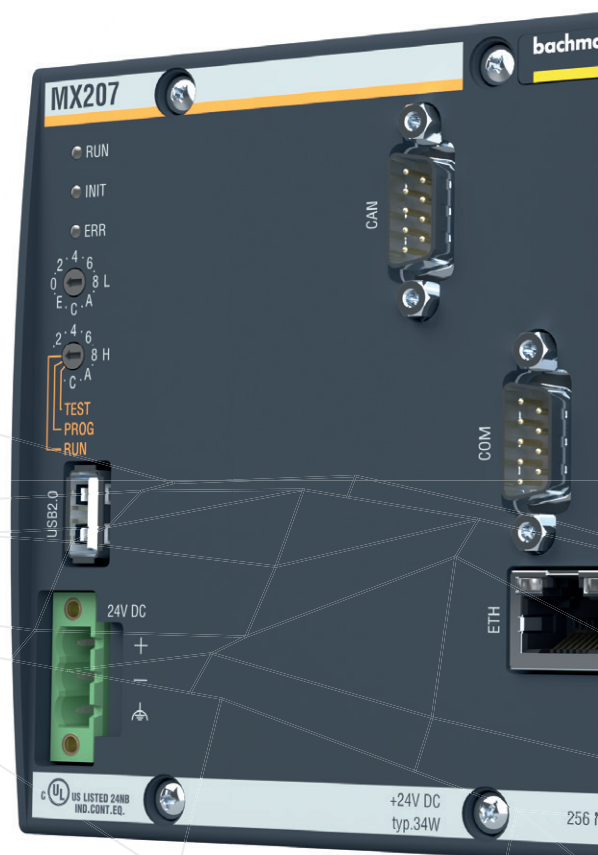
The GMP232/x has everything it takes to meet NGENO requirements, including real-time network event analysis and rapid fault detection.

A Challenge for many, Business as Usual for us

Frequency deviation under 1 mHz is nothing new for Bachmann

The newest statutory frequency range regulations from the National Grid ESO's new Dynamic Containment (DC) service place an extremely high demand on grid measuring devices.

As pioneers in the energy field for many years, Bachmann has long fulfilled these requirements with our controller-integrated solution; the GMP232/x.



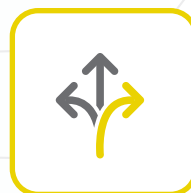
AVAILABILITY THROUGH QUALITY

- In-house production
- 48-hour run-in testing
- 100% series testing
- High temperature exposure



Grid Measurement GMP232/x

- Accuracy
Frequency: 0.001 Hz
Current and voltage: 0.1%
- Measurement Interval
(rms value update rate)
Frequency: 1.66ms
Current and voltage: 1ms



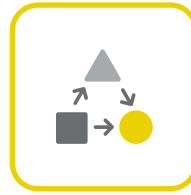
Controller Functions

- Data logging of local and external values within 50ms
- CSV files generated according to the NGENSO's Performance Monitoring CSV-File Format specification
- Customer-specific functionality in IEC 61131, C/C++



Security

- Layer-based protection concept
- Ethernet load limitation
- Network services and protocols secured through authentication and end-to-end encryption (SSL/TLS)
- Access control and access logging
- Protective functions at system level
- Predefined security levels for basic protection



Communication and Protocols

- IEC60870-5-101/103/104
- IEC61850 Client and Server (MMS, Goose, Sampled Values)
- IEC61400-25 Client and Server
- DNP3 Master and Outstation
- Modbus TCP/RTU
- Profibus DP
- Profinet
- OPC UA Server/Client
- MQTT
- RS232/422/485
- FTP/FTPS
- NFS
- SNMP
- Email
- Web visualisation



Certification

- ENA G99 Issue 1 Amendment 4, June 2019 (UK)
- VDE-AR-N 4110:2018, FGW TR3 (Rev. 25), FGW TR8 (Rev. 9) (GER)
- IEEE C37.90:2005 (USA)



Time Synchronisation

- SNTP
- PTP/IEEE 1588

Above and Beyond the Standard Requirements

— Autonomous measurement, real-time detection

Minimal configuration for flexible, precise power measurement

Each GMP232/x module requires a Bachmann controller system. The recommended minimum requirement is our MX207 controller combined with the GMP232/x. This combination not only fulfils statutory measurement requirements; it also offers many other useful functions and advantages for power generation plant operators.



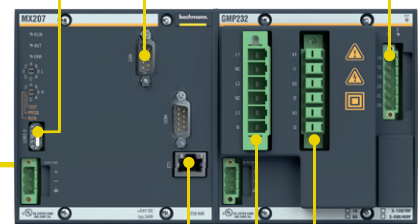
**SIMPLY
PRECISE**

GMP232/x

Basic Package

MX207 plus GMP232/x controller, appropriate backplane, connector and terminal set.

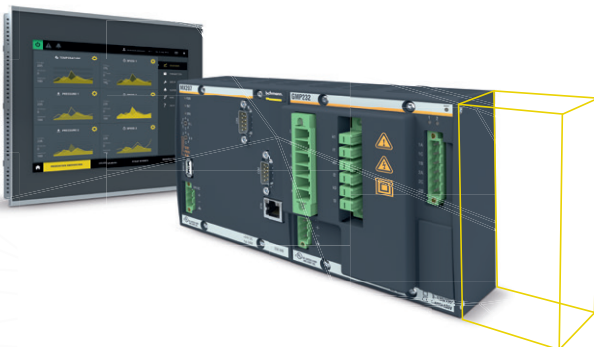
USB memory CAN / CANopen, SAEJ1939 Protection / Signalling



Web visualisation (webMlpro)
Remote maintenance (SC),
FTP/FTPS / NFS / ... / Email
Grid U Grid I

Expandable, decentralised measurement configuration

- Complete network acquisition & monitoring setup with GMP232/x
- Modular software design allows additional applications
- Expandable with display devices
- Visualisation server runs directly on CPU
- Dynamic data display compatible with any web browser, PC, tablet, smartphone
- Special industrial operator panels 7 - 21"
- Comprehensive visualisation software suite M1 webMlpro
- Expandable with I/O & fieldbus modules
- Modular controller system allows comprehensive expansion
- Up to 16 modules per station (minimum set plus 12)



PRODUCT-DATASHEET



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GMP232/x Campaign EN | Subject to change without notice
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