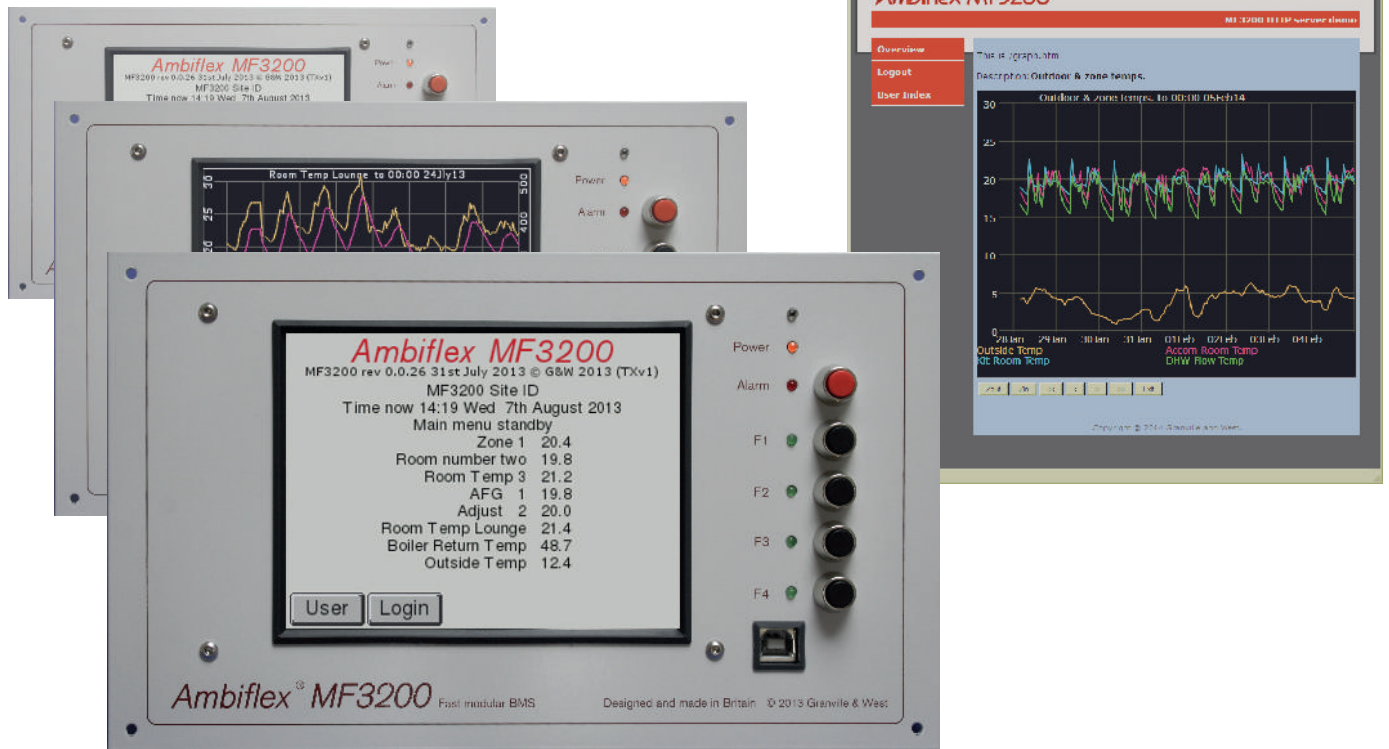


Ambiflex MF3200

Touchscreen BMS controller with integral ethernet TCP/IP

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The Ambiflex MF3200 is a fully programmable modular BMS controller with integral 10/100 ethernet. Local user interface is a 5.7inch colour touchscreen supplemented by programmable dedicated user pushbuttons and alarm indication, with multi level password access control. Remote communications support password controlled remote supervision, application engineering and exception reporting. Direct web level services include user web access and email / SMS relay exception reporting.

A robust RS485 input-output bus is expandable according to system requirements up to 16 LDCX i/o modules providing up to 256 input and 192 output points per MF3200. Each controller supports up to 64 metering accumulators derived from pulse counting inputs on the i/o cards or via Modbus/RTU over a dedicated metering bus. Up to 32 MF3200 can share realtime control parameters through the seperate DSN data sharing bus.

Hardware Specification

Power Supply

230/240 50Hz, 10VA approx.

Configuration

CPU module with ethernet, colour touchscreen, USB-B local update port, RS485 i/o bus, Modbus/RTU metering bus, DSN controller data sharing bus. Max 16 i/o card, 64 Modbus meters per controller; data sharing between up to 32 CPU.

Dimensions

CPU module 250mm x 150mm x 60 mm

Electrical

Belden 4 core screened cable for i/o, metering and DSN bus.

RJ45 cat5 ethernet.

USB-B CDC for on-site data collection and application updates, firmware updates.

Control I/O points

Isolated RS485 i/o interface bus supporting up to 16 external LDCX cards giving up to:

- 128 measured analogue values - NTC or voltage
- 128 LV AC/DC binary input points
- 128 binary (power c/o relay) output points
- 64 analogue (0..10V) output points
- 64 local DDC control loops

RS485 metering bus is capable of accessing up to 64 Modbus/RTU meters.

RS485 dedicated Ambiflex-DSN X2 inter-controller data sharing bus capable of sharing realtime control data between up to 32 MF3200 controllers. Compatible with existing Ambiflex X2 type DSN networks.

Local User interface:

5.7inch colour LCD touchscreen

Screen user functions include:

- Display of any current operating values and control zone status
- 12 x user graphs each displaying up to 6 data series
- Classified user information and status points
- 16 x customised user data and control pages
- 32 x fully configurable override functions
- 32 x user adjust points
- Time schedule review and edit
- Diary schedule review and edit
- Alarm / fault / event list review
- Commissioning overrides of input and output points
- Application configuration and engineering settings.

Access to all screen functions is controlled by a multi level password system.

Dedicated hardware alarm event view pushbutton
Alarm LED and AWD

4 x programmable hardware user page buttons

Control functions

Up to 384 total weekly time schedule cycles in 16 time channels each with up to 12 different timetables

Up to 128 total diary schedule cycles in 12 event types

Up to 16 preengineered time control zones with standard functions including:

- Preoccupancy timing
- Start optimisation with self adaption
- Stop optimisation
- Duty Cycling with optional reset
- Protection and economy limit controls from up to 30 setpoints
- Comprehensive override options at each scheduling level

Additional general purpose control modules which can be interconnected to create most possible control functions include:

- 56 x P+I analogue control modules (SPG)
- 36 x analogue function / switching modules (AFG)
- 12 x Multiplying reset generator (RSG)
- 6 x analogue profile generator (PFG)
- 192 x multi-input combination logic with latch and timers
- 48 x analogue comparator with differential and setpoint offset

24 x accumulator threshold detector
32 x user override controls
32 x user analogue adjustment points

Metering

64 x general purpose accumulators configurable for:
Pulse counting using any binary input with programmable scaling
Hours run from any internal logic state
Degree-days integrator from any analogue variables, with programmable reference temperature
RS485 Modbus meter value, with scaling.

Logging

12 x energy logs, sampling intervals 15 minutes to 1 month, capacity 10 fields x 558 records each
4 x performance monitoring log, sampling from 1 to 120 minute intervals, up to 20 fields x 1581 records each
8 x analysis log, sampling interval from 1 to 120 minutes, 10 fields x 1518 records each.
1 x default energy log, 2 analogue (min and max), 8 binary state, 7 accumulator, 776 daily samples
1 x default GP log, 18 x analogue value, 8 x binary state, 5 x accumulator, 3008 samples at 30 minute intervals.
The two default logs are the data source for the onboard graphs; data from all logs can be downloaded for offboard use.

Communications

Integrated 10/100 ethernet supporting:
Exception reporting client
Email / SMS relay exception reporting client
Remote inspection and engineering server
RLD data point server
MODbus/TCP data exchange server
MODbus/TCP data exchange client
HTTP server

Front panel USB-B port:
Firmware update as HID
Application inspection and engineering as CDC

Online Security

Remote logon protected with second level passcode
Multi user HTTP logon with preset access level control.
Optional peer whitelisting and bad passcode lockout on IP functions
CMT architecture minimises operating system vulnerabilities
Firmware can only be modified by physical access.

Application and data storage:

32 bit high integration RISC CPU
2 x 32MB flash, data retention > 10 years
1 x 128x8 Quantum Trap nvSRAM with RTC, data retention > 20 years
Power-down clock backup: replaceable onboard lithium cell, est life > 10 years

