ABB MEASUREMENT & ANALYTICS | RELEASE NOTES

Spirit^{IT} Flow-X

Gas Metric application

Gas_Metric v3.1.0 (June 2023)

The Gas_Metric version 3.1.0 application has been released in June 2023.

This application requires Flow-Xpress 3.2.6 or later.

The Gas_Metric application is released in three different variations:

- **Gas_Metric_Master_3.1.0.fxm**
  Application for single run flow computers (e.g. X/C, X/M) and multiple run flow computers (e.g. X/P2, X/P3 etc.) running one run per module.

- **Gas_Metric_Master_3.1.0_2runs.fxm**
  Application for version 2 flow computers with 2 runs (e.g. X/C, X/M, X/P1).

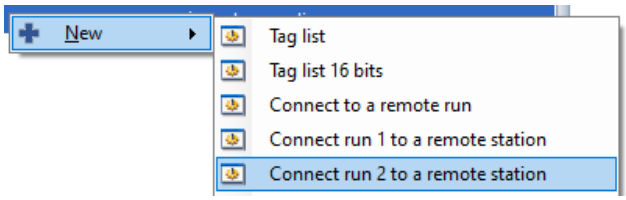
- **Gas_Metric_Master_3.1.0_4runs.fxm**
  Application for version 2 flow computers with 3 or 4 runs (e.g. X/C, X/M, X/P1).

New Features/Changes

Besides the features and changes described below, this release also contains around 35 minor improvements and bug-fixes.

For a complete list of changes please contact ABB.

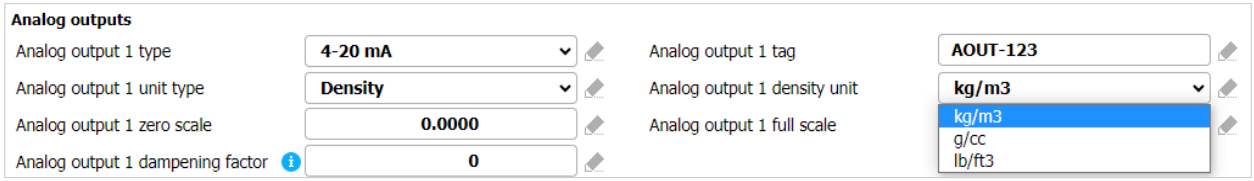
Use second run of remote flow computer as remote run
In previous versions, a remote run could only be the first (or only) run of a remote flow computer. From this version, it's also possible to connect to the second run as well.



Configurable analog output units

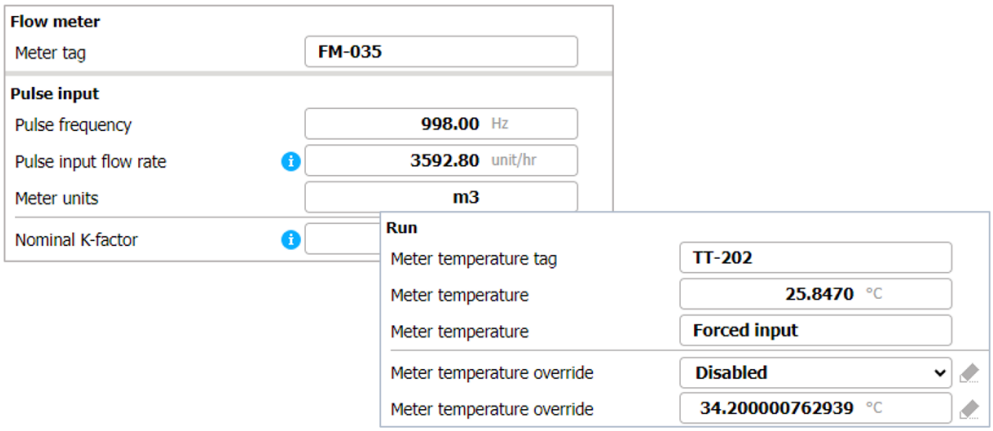
Formerly, analog output configuration was only possible using native application units (e.g. °C for temperature, kg/m3 for density, m3/hr for volume flow rate). Now analog outputs can also be configured using non-standard units (similar to the

configuration of analog inputs). As the flow computer does the unit conversion, it's not needed anymore to manually convert the zero and full scale factors.



Meter / transmitter tags shown on all operator displays

Meter tags / transmitter tags have been added to all applicable operator displays for easier interpretation:



Support of new devices

The following Modbus drivers have been added:

- ABB PGC 5000 gas chromatograph
- Pietro Fiorentini FioSonic ultrasonic flow meter

Gas_Metric v3.0.0 (September 2021)

The Gas_Metric version 3.0.0 application has been released in September 2021.

This application requires Flow-Xpress 3.2.0 or later.

The Gas_Metric application is released in three different variations:

- **Gas_Metric_Master_3.0.0.fxm**
  Application for single run flow computers (X/C, X/M, X/P1) or multiple run flow computers (one run per module).

- **Gas_Metric_Master_3.0.0_2runs.fxm**
  Application for version 2 flow computers with 2 runs (X/C, X/M, X/P1).

- **Gas_Metric_Master_3.0.0_3runs.fxm**
  Application for version 2 flow computers with 3 runs (X/C, X/M, X/P1).

No 'abbreviated' version (for version 1 multiple run flow computers) has been released.

New Features/Changes

Besides the features and changes described below, this release also contains around 30 minor improvements and bug-fixes.

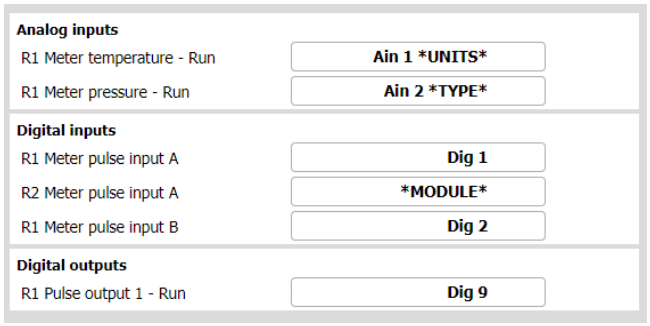
For a complete list of changes please contact ABB.

New menu structure for improved ease of configuration

Configuration has been made easier, using a more intuitive menu structure. All configuration parameters are now collected within one configuration menu which can be followed top down to configure the complete flow computer. **Furthermore, c**onfiguration displays have been optimised, hiding all non-applicable settings and thus avoiding confusion as much as possible.

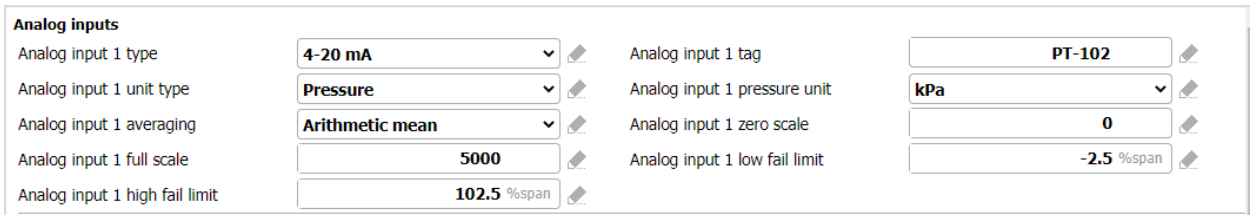
Improved 'IO assignment' display.

The 'IO assignment' display, which provides a complete overview of all assigned IO, now also shows configuration errors like 'incorrect input type', 'incorrect module', 'incorrect unit' etc.



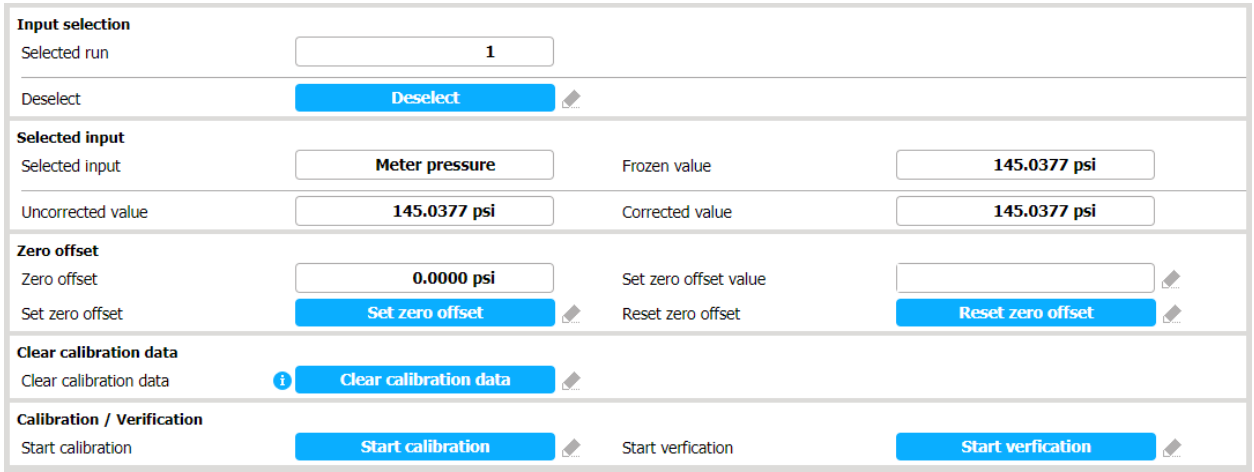
Support of non-standard transmitter units

Now transmitters with non-standard units (like pressure transmitters in kPa, or temperature transmitters in ˚C / ˚F) can be easily used, making use of the new capability to convert the input into the right units.



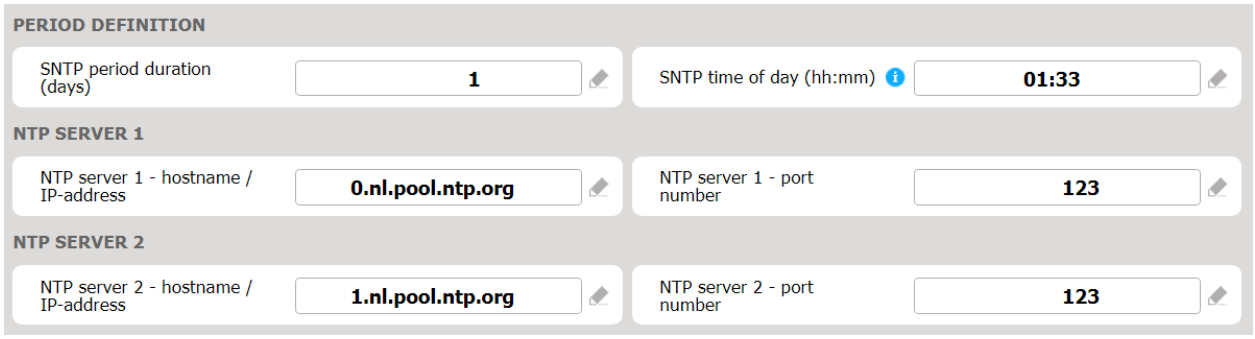
New calibration / verification procedure

The application is provided with a new, extended procedure for calibration, verification and zeroing of process inputs, analog inputs, PT100 inputs, analog outputs and multivariable transmitters. Selection is by 'Meter run' (for process inputs) or by 'IO module' (for IO points). Inputs selected for calibration, verification or zero offset adjustment can be frozen before the calibration is started. Up to 5 calibration and up to 8 verification points are supported. Calibration results are stored at the end of the calibration sequence and a calibration / verification report is generated.



SNTP Time Synchronization

From this application version, the Flow-X supports time synchronization with one or more NTP time servers. Both servers on local networks and on the Internet are supported. It’s possible to configure communication with up to four separate NTP servers.


PERIOD DEFINITION
SNTP period duration (days)
1
SNTP time of day (hh:mm)
01:33
NTP SERVER 1
NTP server 1 - hostname / IP-address
0.nl.pool.ntp.org
NTP server 1 - port number
123
NTP SERVER 2
NTP server 2 - hostname / IP-address
1.nl.pool.ntp.org
NTP server 2 - port number
123

Gas_Metric v2.3.0 (March 2019)

The Gas_Metric application version 2.3.0 has been released in March 2019.

The application is compatible with Flow-Xpress versions 2.1.0 and higher.

Besides the features and changes described below, this release also contains around 20 minor improvements and bug-fixes.

For a complete list of changes please contact ABB.

New Features/Changes

Three separate application files
The Gas_Metric application comes in three variations:

- **Gas_Metric Master 2.3.0.fxm**
  Full application for single run (X/S, X/P1, X/R1) or 2 run (X/P2, X/R2) flow computers on version 1 hardware, and single run applications on version 2 hardware.
- **Gas_Metric Master 2.3.0 abridged.fxm**
  Abridged application for multiple run flow computers with 3 or 4 runs (X/P3, XP4) on version 1 hardware. This application has the following restrictions: no reverse totals and averages, no hourly and period B totalizers and averages.
- **Gas_Metric Master 2.3.0 v2 3runs.fxm**
  Application for version 2 flow computers with 2 or 3 runs (X/M or X/C).

Multistream application for version 2 hardware

With the release of version 2 hardware (X/M and X/C), which has much more memory available, it has become possible to control more than one run from one Flow-X module. The new Gas_Metric v2 3runs application supports up to 3 runs on a single X/M or X/C flow computer.

New metrological calculations
The following metrological calculations have been added / updated:

- GOST30319-SGERG91 2015 edition
- AGA-3 2012 edition
- AGA-8 2015 edition
- ISO6976 2016 edition
- GPA-2145 2009 and 2016 editions

Automatic HART slave ID lookup

With this new feature, finding the configured slave ID of a connected HART transmitter is made very simple. Just tell the flow computer to search for a transmitter, upon which flow computer starts a search on the HART loop and reports back any transmitter it has found.

Gas_Metric v2.2.0 (June 2017)

The Gas_Metric application version 2.2.0 has been released in June 2017.

The application is compatible with Flow-Xpress versions 1.7.6 and higher.

Besides the features and changes described below, this release also contains around 110 minor improvements and bug-fixes.

For a complete list of changes please contact ABB.

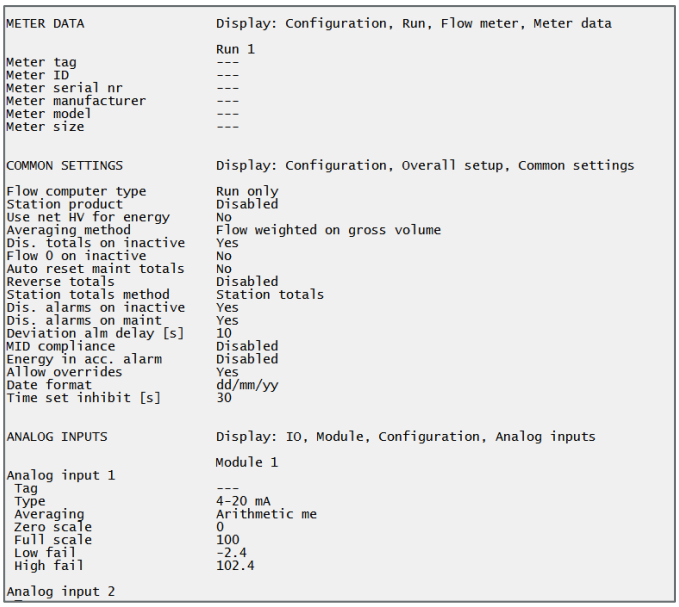
New Features/Changes

Two separate application files
The Gas_Metric application is released in two different variations:

- **Gas_Metric Master 2.2.0.fxm**
  Full application for flow computers with up to 2 runs (X/S, X/P1, X/P2, X/R1, X/R2)
- **Gas_Metric Master 2.2.0 abridged.fxm**
  Abridged application for multiple run flow computers with 3 or 4 runs (X/P3, XP4). This application has the following restrictions: no reverse totals and averages, no hourly and period B totalizers and averages.

Flow computer configuration report
From version Gas_Metric v2.2.0 it is possible to generate a configuration report directly from the flow computer. This report contains an extensive overview of the flow computer's configuration settings.

Because the configuration report is a large report containing a lot of data, it requires quite a lot of extra memory and is, therefore, only available in the Gas_Metric Master 2.2.0.fxm file for single and dual run flow computers.



```
METER DATA                  Display: Configuration, Run, Flow meter, Meter data

                            Run 1
Meter tag                   ---
Meter ID                    ---
Meter serial nr             ---
Meter manufacturer          ---
Meter model                 ---
Meter size                  ---


COMMON SETTINGS             Display: Configuration, Overall setup, Common settings

Flow computer type          Run only
Station product             Disabled
Use net HV for energy       No
Averaging method            Flow weighted on gross volume
Dis. totals on inactive     Yes
Flow 0 on inactive          No
Auto reset maint totals     No
Reverse totals              Disabled
Station totals method       Station totals
Dis. alarms on inactive     Yes
Dis. alarms on maint        Yes
Deviation alm delay [s]     10
MID compliance              Disabled
Energy in acc. alarm        Disabled
Allow overrides             Yes
Date format                 dd/mm/yy
Time set inhibit [s]        30


ANALOG INPUTS               Display: IO, Module, Configuration, Analog inputs

                            Module 1
Analog input 1
 Tag                        ---
 Type                       4-20 mA
 Averaging                  Arithmetic me
 Zero scale                 0
 Full scale                 100
 Low fail                   -2.4
 High fail                  102.4

Analog input 2
```

New metrological calculations
The following metrological calculations have been added:

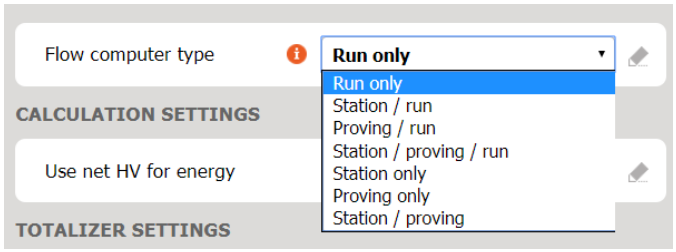
- Heating value calculation according to AGA-5
- Compressibility / density calculation according to GOST30319-SGERG91
- Mass flow calculations for orifices with pipe tappings according to AGA-3 1985

Input frozen alarms for all process inputs
The application now features 'input frozen' alarms for all live process inputs like meter temperature, meter pressure, density, differential pressure etc.

If enabled the logic checks whether the inputs are varying within a configurable time span. If an input value hasn't changed during this time span, the flow computer creates an 'input frozen' alarm.

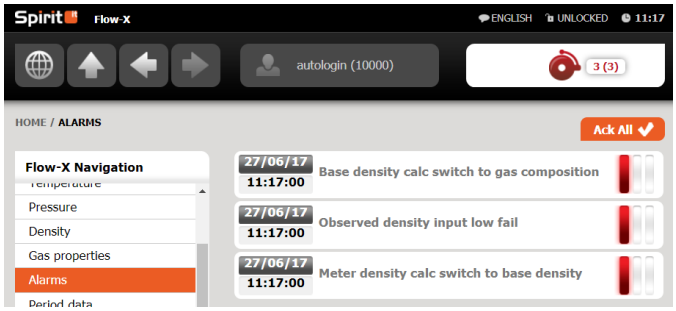
Removed FC type 'Remote run'
In the previous application version 2.1.0 a common configuration parameter 'FC type' has been introduced which enables or disables the run, station and proving functionality of the flow computer. One of the options was 'remote run', which configured the flow computer as a 'remote run' to another flow computer that was serving as station or proving flow computer.

In the new application version 2.2.0 this functionality is still available, but the FC type 'remote run' has been removed from the selection list. Now it suffices to configure the remote run as 'Run only' (and configure the 'Connect to remote station' Modbus list). Please refer to the application manual for more information.



Fallback scenario for densitometers
If a live density is measured and used to calculate the base density, and the observed density source (e.g. densitometer) fails while a gas composition is available, the base density calculation switches to 'gas composition'. This means the base density is calculated from the molar mass (which in turn is calculated from the gas composition).

If the meter density is configured to be calculated from the observed density, the meter density calculation method switches to 'base density'.

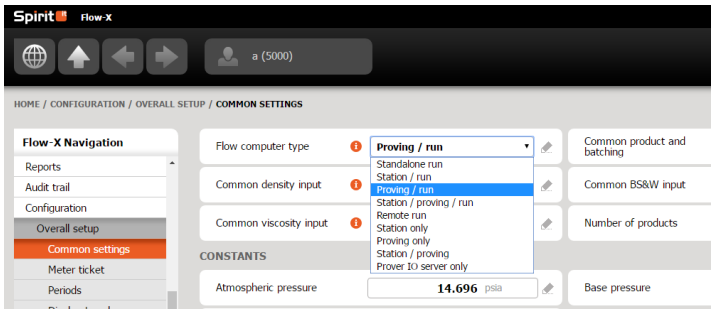


Gas_Metric v2.1.0 (December 2015)

This application version is compatible with Flow-Xpress versions 1.7.5 and higher.

Parameter 'FC type' for easy configuration of run/station/proving combinations

In previous application versions enabling / disabling of the run, station and proving functionality was done by setting several parameters on a number of different displays. In this new version these parameters have been replaced by one global parameter ‘FC type’ on the common settings display. Based on this parameter the flow computer enables or disables the run, station and proving functionality and shows the appropriate display screens for configuration and operation. For more information please refer to the application manual.



When upgrading a flow computer from a previous application version to this new version, please remember to set this parameter accordingly.