SpiritIT Flow-X series
Flow computer
For high accuracy measurement data

**Highest accuracy in flow computing**
- Unique 4-20 mA inputs with HART accuracy
- High accuracy clock and time measurement
- Supports the latest calculations, e.g. AGA-8 Part 2
- 64-bit resolution from input to output

**Cost-effective**
- Single stream: a single module handles a complete run
- Multi-stream: version 2 module for 3 gas or 2 liquid runs

**All the data you ever need**
- 4 sets of period data plus batch data
- Recalculated ticket data
- Mass, volume, energy totals per component

**Simple hardware concept**
- One and the same module used for all enclosures
- No hardware switches, instead fully software configurable

**Secure**
- Personal user accounts to prevent unauthorized access
- Audit trail shows the actual person

**Flexible**
- Panel mount, DIN-rail mount, wall mount and 19” rack
- Connects to any Modbus and HART field device
- Web services
- Highy customizable (displays, reports, archives, comms,...)

**Complete**
- Bi-directional flow
- Support for two provers
- Extensive control functions
- Multi-lingual operator interface
Flow-X/M - Flow computer module

The Flow-X/M module is the core element of the Flow/X series and provides a complete flow computer for gas and liquid flow measurement. The module is placed in one of the Flow-X enclosures, except for the Flow-X/C.

### System

**CPU and memory**
- Version 1: 400 MHz, 128 MB RAM, 1024 MB flash
- Version 2: 800 MHz, 512 MB RAM, 1024 MB flash

**Clock**
- Real-time clock, accuracy better than 1 sec/day
- Battery: version 1 lithium cell, version 2 Goldcap

**Watchdog**
- Hardware and software watchdog timer

### Display & buttons

**Display type**
- Graphical 196 x 64 pixel LCD.
- White LED, 100 step dimmable

**Buttons**
- 4 navigation buttons

**Tamper switch**
- Mechanical tamper switch to prevent changing of the application and vital parameters within that application.

### Physical

**Weight**
- 0.8 kg (1.7 lb)

**Dimensions (w x h x d)**
- 50 x 166 x 115 mm (2.0 x 6.5 x 4.5 inch)

### I/O per Flow-X/M module

<table>
<thead>
<tr>
<th>I/O type</th>
<th>Amount</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog inputs*</td>
<td>6</td>
<td>Analog transmitter input, high accuracy. Input types are 4 to 20mA, 0 to 20mA, 0 to 5V, 1 to 5V. Accuracy 0.002% FS at 21°C, 0.008% at full ambient range of 0-60°C, resolution 24 bits. Inputs are fully floating (optically isolated).</td>
</tr>
<tr>
<td>4-wire PRT inputs</td>
<td>2</td>
<td>Resolution 0.02 °C for 100 ohms input. Error depending on range: 0 to 50 °C: Error &lt;0.05 °C or better; -220 to +220 °C: Error &lt;0.5 °C or better.</td>
</tr>
<tr>
<td>HART*</td>
<td>4</td>
<td>Independent HART loop inputs, on top of 4 to 20 mA signals. Support includes multi-drop for each transmitter loop, as well as support for redundant FC operation.</td>
</tr>
<tr>
<td>Analog outputs</td>
<td>4</td>
<td>Analog output for flow control, pressure control 4 to 20mA, outputs floating. Resolution 14 bits, 0.075% FS.</td>
</tr>
<tr>
<td>Pulse Inputs**</td>
<td>1 or 4(1)</td>
<td>Single or dual pulse input. Adjustable trigger level at various voltages. Frequency range up to 10 kHz (single) or 5kHz (dual). Compliant with ISO65551, IP252, and API 5.5. True Level A and level B implementation.</td>
</tr>
<tr>
<td>Density/viscosity**</td>
<td>4</td>
<td>Periodic time input, 100μs to 5000μs. Resolution &lt; 1 ns.</td>
</tr>
<tr>
<td>Digital inputs**</td>
<td>16</td>
<td>Digital status inputs. Resolution 100ns (10MHz)</td>
</tr>
<tr>
<td>Digital outputs**</td>
<td>16</td>
<td>Digital output, open collector (0.5A DC). Rating 100mA @24V.</td>
</tr>
<tr>
<td>Pulse outputs**</td>
<td>4(2)</td>
<td>Open collector, max. 10Hz</td>
</tr>
<tr>
<td>Sphere detector inputs**</td>
<td>4</td>
<td>Supports 1, 2 and 4 detector configurations mode. Resolution 100ns (10MHz)</td>
</tr>
<tr>
<td>Prover bus outputs**</td>
<td>1</td>
<td>Meter pulse output for remote proving flow computers. Resolution 100ns (1MHz).</td>
</tr>
<tr>
<td>Frequency outputs**</td>
<td>4</td>
<td>Frequency outputs for emulation of flow meter signals. Maximum frequency 10KHz, accuracy 0.1%.</td>
</tr>
<tr>
<td>Serial</td>
<td>2</td>
<td>RS485 / RS232 serial input for ultrasonic meter, printer or generic, 115kb</td>
</tr>
<tr>
<td>Ethernet</td>
<td>2</td>
<td>RJ45 Ethernet interface, TCP/IP</td>
</tr>
</tbody>
</table>

* Analog input = 6 (of which 4 support HART)  
**Total number of pulse inputs + digital inputs + digital outputs + pulse outputs + density inputs + sphere detector inputs + prover bus outputs + frequency outputs = 16  
(1) Version 1 hardware supports 1 dual pulse input, while version 2 hardware supports 4 dual pulse inputs  
(2) Version 1 also supports 4 pulse outputs only, while version 2 also supports 8 pulse outputs with a phase shift
Enclosures for the Flow-X/M

The Flow-X module can be used in several different enclosures. The Flow-X/S and Flow-X/K are single module enclosures providing respectively onboard wiring terminals and remote IO connectivity through 37 pins D-sub connectors. The Flow-X/P is a multi-stream flow computer with an integrated station module and touch screen and can hold up to 4 modules. The Flow-X/C is the compact version of the Flow-X/P with one module integrated into the enclosure. The Flow-X/R is a 19 inch rack enclosure for up to 8 modules.

<table>
<thead>
<tr>
<th>Enclosures</th>
<th>Dimensions (h x w x d) [mm/inch]</th>
<th>Weight [kg/lbs]</th>
<th>Mount type</th>
<th>Mount position</th>
<th>Interface</th>
<th>Max. Flow-X/Ms</th>
<th>Maximum I/O</th>
<th>Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow-X/S</td>
<td>250/9.8 x 142/5.6 x 164/6.5*</td>
<td>2.5 / 5.4*</td>
<td>Wall / DIN rail</td>
<td>Horizontal &amp; vertical</td>
<td>4 line LCD Web server</td>
<td>1</td>
<td>2 x 39 screw terminals / 2 x Ethernet / 1 x 8 pin power</td>
<td>Flow-X/B Breakout board</td>
</tr>
<tr>
<td>Flow-X/K</td>
<td>353/13.9 x 60/2.4 x 131/5.2*</td>
<td>1.7 / 3.6*</td>
<td>Wall / DIN rail</td>
<td>Vertical</td>
<td>4 line LCD Web server</td>
<td>1 (integrated)</td>
<td>2 x 37 pin D-Sub / 2 x 4 pin power</td>
<td>Flow-X/T 7” remote touch screen</td>
</tr>
<tr>
<td>Flow-X/C</td>
<td>237/9.3 x 139/5.5 x 142/5.6</td>
<td>2,7 / 6.0</td>
<td>Panel / Rack</td>
<td>Horizontal and vertical</td>
<td>7 in. color touch screen Web server</td>
<td>3</td>
<td>1 x 9 pin D-Sub / 2 x Ethernet / 1 x 4 pin power</td>
<td>Flow-X/T 10” remote touch screen</td>
</tr>
<tr>
<td>Flow-X/P</td>
<td>235/9.3 x 137/5.4 x 322/12.7</td>
<td>3,7 / 8.2</td>
<td>Panel / Rack</td>
<td>Vertical</td>
<td>7 in. color touch screen Web server</td>
<td>4</td>
<td>3 x 9 pin D-Sub / 2 x 37 pin D-Sub / 2 x Ethernet / 1 x 4 pin power</td>
<td>Flow-X/R 4-P.S</td>
</tr>
<tr>
<td>Flow-X/R</td>
<td>355/14.0 x 482/19.0 x 135/5.3</td>
<td>5,0 / 11.0</td>
<td>Rack / Wall</td>
<td>Vertical</td>
<td>4 line LCD Web server</td>
<td>8</td>
<td>16 x 37 pin D-Sub / 16 x Ethernet / 8 x 4 pin power****</td>
<td>Flow-X/R enclosure without a module</td>
</tr>
</tbody>
</table>

* With Flow-X/M module
** In combination with an DIN rail - Rack adapter
*** Integrated in the enclosure
**** Each individual stream module is individually, independently powered (24 V DC) and individually exchangeable

Ordering Information

<table>
<thead>
<tr>
<th>Enclosures</th>
<th>Number of modules</th>
<th>Exceptions</th>
<th>Mounting</th>
<th>Exceptions</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Flow-X/S</td>
<td>0</td>
<td>1</td>
<td>F : Front panel</td>
<td>N : None</td>
</tr>
<tr>
<td>C</td>
<td>Flow-X/C</td>
<td>1</td>
<td>1</td>
<td>B : Back panel</td>
<td>S : Standard</td>
</tr>
<tr>
<td>P</td>
<td>Flow-X/P</td>
<td>2</td>
<td>2</td>
<td></td>
<td>C : Custom</td>
</tr>
<tr>
<td>R</td>
<td>Flow-X/R</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Flow-X/K</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Exceptions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow-X/B Breakout board</td>
<td>Not for enclosure C</td>
<td>Flow-X/R-4-F.S</td>
</tr>
<tr>
<td>Flow-X/T 7” remote touch screen</td>
<td>Only for enclosures P and R</td>
<td>Flow-X/P-2-C</td>
</tr>
<tr>
<td>Flow-X/T 10” remote touch screen</td>
<td>Only for enclosure R</td>
<td>Flow-X/K-0</td>
</tr>
</tbody>
</table>
System specifications

Environmental Data
Ambient operating temperature
0 to 60 °C
Storage temperature
–20 to 70 °C
Operating humidity
Max. 90% relative humidity, non-condensing
Sunlight
Store and operate out of direct sunlight

Power Supply
DC power supply
External, 24 V DC (± 10%), with redundant connections

Power Consumption
Flow-X/P0
Nominal 0.3 A
Startup peak 0.8 A
Flow-X/C
Nominal 0.5 A
Startup peak 1.0 A
Flow-X/M
Nominal 0.3 A
Startup peak 0.8 A

Communication protocols
Modbus RTU / ASCII Master and Slave
Modbus TCP Server and Client
HART Master
Flow-X Client protocol
Web services API

Flow meter diagnostics
ABB CoriolisMaster
SICK FlowSic 600
SICK FlowSic 600XT
E+H Promass
Caldon LEFM 380CI
FMC MPU
GE Panametrics GF868
Faure Herman 8400
Q.Sonic plus
Micro Motion
AltoSonic V12
RMG USZ08

Gas analyzers
ABB NGC 8200 series
ABB BTU8100
Siemens Maxum
Siemens Sitrans
Danalyzer
Yamatake HGC
Encal 3000
Angus GQA

Density Meters
Density Meters
Solartron
Sarasota
UGC
Densitrak
Anton Paar L-Dens 427 (HART/Modbus)

Calculations
Liquid
API 5, 6, 23, 24, 53, 54, 59 and 60 tabes (A.B. D and E)
API 11.1 1980 (API 2540) and 2004/2007
API 1952 historical tables
API 11.2.1, 11.2.2, 12.2, 21.1, 21.2
API 11.3.2, Ethylene (API-2565)
GPA TP15, TP16, TP25, TP27
Propylene (API 11.3.3.2)
Butadiene (ASTM D1550)
Ethylene (IUPAC 1988, NIST 1045, API 2565)
Carbon dioxide (NIST)
Ethanol / Alcohol (OIML R22)

Gas
AGAS, AGA7, AGA8 Parts 1 and 2, AGA10, AGA11
AGA-NX19
SGERG-88
GERG-2008
GOST 30319-2
GPA 2172
IAPWS-IF97 (steam and water)
ISO 6976 (all editions)
GSSSD MR113

Flow
ISO 5167-1, 2, 3 and 4 (all editions)
ISO/TR15377
AGA3
GOST 8-586
V-cone
Software applications

<table>
<thead>
<tr>
<th></th>
<th>Gas Metric</th>
<th>Gas USC</th>
<th>Liquid Metric</th>
<th>Liquid USC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base engineering units</td>
<td>Metric</td>
<td>US Customary</td>
<td>Metric</td>
<td>US Customary</td>
</tr>
<tr>
<td>Product</td>
<td>Natural gases, industrial gases and steam</td>
<td></td>
<td>Crude oil, oil and liquid products, natural gas liquids, liquified gases and water</td>
<td></td>
</tr>
<tr>
<td>Flow meter signal</td>
<td>Pulse, analog, Modbus, HART</td>
<td>Pulse, analog, Modbus, HART</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow meter type</td>
<td>Ultrasonic, Turbine, Coriolis, PD Orifice, Cone, Venturi</td>
<td>Coriolis, Turbine, Ultrasonic, PD Orifice, Cone, Venturi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of runs (streams)</td>
<td>1 for Flow-X/M version 1 and Flow-X/C 4 for Flow-X/P version 1 (1 per module)</td>
<td>1 for Flow-X/M version 1 and Flow-X/C 4 for Flow-X/P (1 per module)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote station capability</td>
<td>For maximum 8 runs in total</td>
<td>For maximum 8 runs in total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>Valve, flow, sampler</td>
<td>Valve, proving, batch, flow, sampler, loading, LACT, driver authorization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proving</td>
<td>Up to 2 master meters</td>
<td>Up to 2 sphere provers, compact provers and/or master meters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow direction</td>
<td>Forward and reverse</td>
<td>Forward and reverse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K-factor / Meter factor curve</td>
<td>12 points</td>
<td>12 points</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4  Software applications

Regulatory compliance

EU Directives
2014/32/EU Measuring Instruments Directive
2014/30/EU Electromagnetic Compatibility Directive
2012/19/EU WEEE Directive (WEEE 2)
2011/65/EU RoHS

UL / CSA
CAN/CSA C22.2 No 61010-1: 2012/05/11 Ed:3
ANSI/UL 61010-1, Issued 2012/05/11 Ed:3

IEC Standards
IEC 60068-2-1
IEC 60068-2-2
IEC 60068-2-3
IEC 60068-2-31
IEC 60068-2-36
IEC 60654-2
IEC 61000-4-2:2008
IEC 61000-4-4:2012
IEC 61000-4-5:2015+ A1:2017
IEC 61000-4-6:2014
IEC 61000-4-8:2009
IEC 61000-4-29:2000
IEC 61000-6-2:2016
IEC 61000-6-4:2001+ A1:2011
Flow-X/S specifications

Physical
Dimensions (w x h x d) (with module)
142 x 250 x 164 mm (5.6 x 9.8 x 6.5 inch)
Weight (with module)
2.5 kg (5.4 lbs)
Mounting options
Wall mounted, 4 screws
DIN rail, 2 rails
Modules
1
Streams (meter runs)
1 gas or 1 liquid with version 1 module
3 gas or 2 liquid with version 2 module

Connectors
Ethernet
2 x shielded 8 pole snap-in RJ45 connectors
Power
1 x 8 pole connector
(Phoenix Contact, MSTBVA 2,5/8-G-5.08)
I/O
2 x screw terminal strips with each 39 terminals
(Phoenix Contact, SMKDS 2,5/3-5,08)
Flow-X/K specification

Physical
- Dimensions (w x h x d) (with module) 60 x 353 x 131 mm (2.4 x 13.9 x 5.2 inch)
- Weight (with module) 1.7 kg (3.6 lbs)
- Mounting options
  - Wall mounted, 4 screws
  - DIN rail, 2 rails
  - 8 Height units (U) in a 19 inch rack (with DIN rail adapter)
- Modules
  - 1
- Streams (meter runs)
  - 1 gas or 1 liquid with version 1 module
  - 3 gas or 2 liquid with version 2 module

Connectors
- Ethernet
  - 2 x shielded 8 pole snap-in RJ45 connectors
- Power
  - 1 x 4 pole connector (Phoenix Contact, MSTBVA 2,5/4-G-5.08)
- I/O
  - 2 x 37-pin D-sub female connectors

Dimensions in mm [in.]

Figure 4 DIN rail mount

Figure 5 Wall mount
Flow-X/C specification

Physical
Dimensions (w x h x d)
139 x 237 x 142 mm (5.5 x 9.3 x 5.6 inch)
Weight
2.7 kg (6.0 lbs)
Mounting options
Enclosure is delivered with mounting bracket for installation in a cabinet (Panel mounted)
Modules
1 (integral part of the enclosure)
Streams (meter runs)
3 gas or 2 liquid

Connectors
Ethernet
2 x shielded 8 pole snap-in RJ45 connectors
Power
1 x 4 pole connector
(Phoenix Contact, MSTBVA 2,5/4-G-5.08)
I/O
1 x 9-pin D-sub male connector
2 x 37-pin D-sub female connectors
**Flow-X/P specification**

**Physical**
- Dimensions (w x h x d) (without bracket): 137 x 235 x 322 mm (5.4 x 9.3 x 12.7 inch)
- Weight: 3.7 kg (8.2 lbs)
- Mounting options: Enclosure is delivered with mounting bracket for installation in a cabinet (Panel mounted)

**Modules**
- 0 to 4

**Streams (meter runs)**
- Up to 4 gas or 4 liquid (1 per module)

**Connectors**
- Ethernet: 2 x shielded 8 pole snap-in RJ45 connectors
- Power: 1 x 8 pole connector (Phoenix Contact, MSTBVA 2,5/8-G-5.08)
- I/O: 3 x 9-pin D-sub male connectors
  
  8 x 37-pin D-sub female connectors

---

Figure 10 Side view with bracket

Figure 11 Front view with bracket

Figure 12 Rear view with bracket
Flow-X/R specifications

Physical
Dimensions (w x h x d)
482 x 355 x 135 mm (19.0 x 14.0 x 5.3 inch)

Weight
5.0 kg (11.0 lbs)

Mounting options
Front mounted for in a 19 inch rack (8 Height units U) (Figure 16)
Back mounted for wall mounting (Figure 17)

Modules
1 to 8

Streams (meter runs) per module
1 gas or 1 liquid with version 1 module
3 gas or 2 liquid with version 2 module

Connectors
Ethernet
16 x shielded 8 pole snap-in RJ45 connectors

Power
8 x 4 pole connector
(Phoenix Contact, MSTBVA 2.5/4-G-5.08)

I/O
16 x 37-pin D-sub female connectors
Flow-X/T specification

External Touch screen

Physical
Weight
0.7kg (1.43 lbs) | 1.7 kg (3.75 lbs)
Dimensions (w x h x d)
222 x 152 x 56 mm (8.7 x 6.0 x 2.2 inch)
280 x 227 x 56 mm (11.0 x 8.9 x 2.2 inch)
Mounting options
Panel installation with mounting brackets (included)
Panel cutout, see figure 16 & 17 on the next page
Operating temperature
0 °C ~ 70 °C

EMI/EMC Certifications
CE/FCC/KCC Class A

Display
Display Type
7” TFT-LCD (800 x 480 px) | 10.4” TFT-LCD (800 x 600 px)
Backlight
LED Backlight (ON/OFF switchable)
Touch
4 wire resistive panel

Connectors
Ethernet
1 x RJ-45 (100 Base-TX)
Power
12V ~ 24 V DC (500mA | 800mA)

Compatible with
All Spirit™Flow-X computers
Flow-X/B specifications

Break out board
Breakout board with pull-up resistors, fuses & relays\(^1\) for easy field connectivity and to protect the flow computer from any misuse or field influence. Embedded green and red LED lights for simple signal overview of flow equipment. One Flow-X/B board is required for each 37-pin D-Sub connector.

Physical
Dimensions (w x h x d)
177 x 130 x 55 mm (7.0 x 12.2 x 2.2 inch)
Weight
1.2 kg (2.6 lbs)
Mounting options
Wall mounted, 4 screws

Connectors
Power
1 x 5 pole header and plug connector
Field I/O
8 x 5 pole header and plug connector (DI)
2 x 3 pole header and plus connector (AO)
3 x 3 pole header and plug connector (AI)
1 x 4 pole header and plug connector (PRT)
1 x 4 pole header and plug connector (I/O_GND)
(WE, Serie 311 & 3445-5.08mm)

Compatible with
All Spirit\(^\text{R}\) Flow-X computers, except Flow-X/S
1 x 5 pole header & plug connector
(WE, Serie 311 & 3445-5.08mm)
Flow-X I/O
1 x 37-pin D-sub female connectors

\(^1\) Fuses and relays are NOT included with the delivery of the Flow-X/B.
Terminal block specification
37 pin Sub D Terminal Block with cable

Type
DECA MOD-37-F02

Dimensions (w x h)
113 x 85,2 mm (4.4 x 3.4 inch)

Connectors
1 x 37-pin D-sub female connectors
1 x double row screw terminal strip with 37 terminals

Cable
1, 2 or 3 meter; straight or 45° angled

Compatible with
All Spirit Flow-X computers, except Flow-X/S
## Connector overview

### Connectors

- **D-SUB 9 connector (Male)**
  - **COM1**
    - Pin Description
    - 1 |  | — | Rx –
    - 2 | Rx | — | Rx +
    - 3 | Tx | — | Tx –
    - 4 | — | — | Rx –*
    - 5 | 24V out
    - 6 | 7 | 8 | 9 | RS-232 only

- **D-SUB 37 connector (Female)**
  - **Connector A**
    - Pin Description
    - 1 | COM1 — | Sig + | Tx +
    - 2 | COM1 | Tx | Sig – | Tx –
    - 3 | COM1 — | — | Rx –
    - 4 | COM1 Rx | — | Rx +
    - 5 | 24V out
    - 6 | 7 | 8 | 9 | COM2 & COM3**

- **4 pin power terminal**
  - **Pin Description**
  - 1 | 24V Primary +1
  - 2 | 24V Secondary +2
  - 3 | 0V
  - 4 | 0V

- **8 pin power terminal**
  - **Pin Description**
  - 1 | 24V Primary +1
  - 2 | 24V Primary +2
  - 3 | 0V
  - 4 | 0V

### Connector A (X1A)

- **Pin Description**
  - 1 | 24V out
  - 2 | 0V, Digital common
  - 3 | Digital 1
  - 4 | 0V, Digital common
  - 5 | Digital 2
  - 6 | 0V, Digital common
  - 7 | Digital 3
  - 8 | 0V, Digital common
  - 9 | Digital 4
  - 10 | 0V, Digital common
  - 11 | Digital 5
  - 12 | 0V, Digital common
  - 13 | Digital 6
  - 14 | 0V, Digital common
  - 15 | Digital 7
  - 16 | 0V, Digital common
  - 17 | Digital 8
  - 18 | 0V, Digital common
  - 19 | 24V out
  - 20 | 0V, Digital common
  - 21 | Digital 9
  - 22 | 0V, Digital common
  - 23 | Digital 10
  - 24 | 0V, Digital common
  - 25 | Digital 11
  - 26 | 0V, Digital common
  - 27 | Digital 12
  - 28 | 0V, Digital common
  - 29 | Digital 13
  - 30 | 0V, Digital common
  - 31 | Digital 14
  - 32 | 0V, Digital common
  - 33 | Digital 15
  - 34 | 0V, Digital common
  - 35 | Digital 16
  - 36 | 0V, Digital common
  - 37 | 24V out
  - 38 | 0V, Digital common
  - 39 | 24V out

### Connector B (X1B)

- **Pin Description**
  - 1 | 24V out
  - 2 | 0V, Digital common
  - 3 | Digital 1
  - 4 | 0V, Digital common
  - 5 | Digital 2
  - 6 | 0V, Digital common
  - 7 | Digital 3
  - 8 | 0V, Digital common
  - 9 | Digital 4
  - 10 | 0V, Digital common
  - 11 | Digital 5
  - 12 | 0V, Digital common
  - 13 | Digital 6
  - 14 | 0V, Digital common
  - 15 | Digital 7
  - 16 | 0V, Digital common
  - 17 | Digital 8
  - 18 | 0V, Digital common
  - 19 | 24V out
  - 20 | 0V, Digital common
  - 21 | Digital 9
  - 22 | 0V, Digital common
  - 23 | Digital 10
  - 24 | 0V, Digital common
  - 25 | Digital 11
  - 26 | 0V, Digital common
  - 27 | Digital 12
  - 28 | 0V, Digital common
  - 29 | Digital 13
  - 30 | 0V, Digital common
  - 31 | Digital 14
  - 32 | 0V, Digital common
  - 33 | Digital 15
  - 34 | 0V, Digital common
  - 35 | Digital 16
  - 36 | 0V, Digital common
  - 37 | 24V out
  - 38 | 0V, Digital common
  - 39 | 24V out

* RS-232 | RS-485 2 wire | RS-485 4 wire
** Flow-X/C COM3 only

### Screw terminals Flow-X/S

- **Connector A**
  - **Pin Description**
  - 1 | 24V Secondary +2
  - 2 | 24V Primary +1
  - 3 | 0V
  - 4 | 0V

- **Connector B**
  - **Pin Description**
  - 1 | 24V Secondary +1
  - 2 | 24V Primary +2
  - 3 | 0V
  - 4 | 0V