

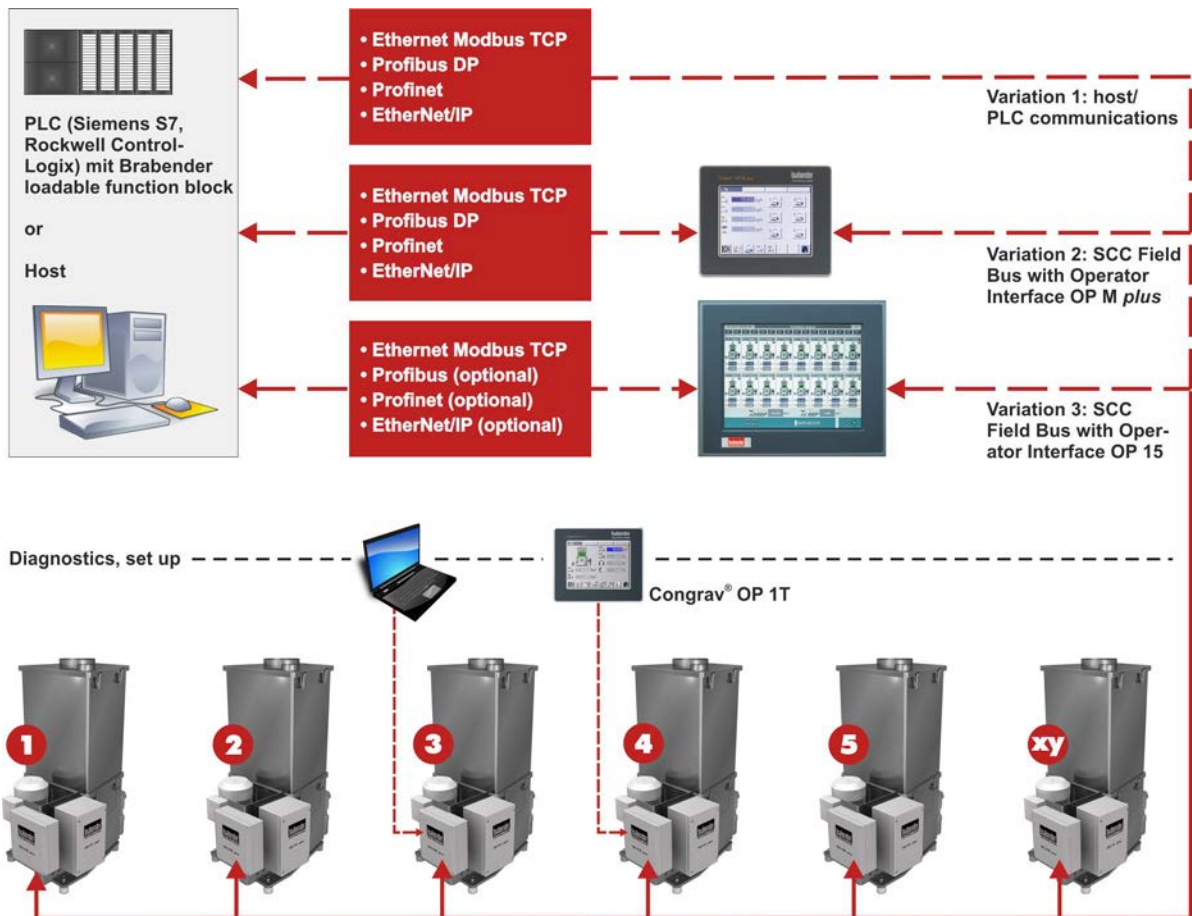
# Brabender Feeder Control and Speed Control Modules ISC-CM *plus* / ISC-FC *plus* for Multiple Gravimetric Feeders

The Brabender ISC *plus* (Intelligent Signal Conditioning) systems are feeder mounted and wired modules for all Brabender loss-in-weight or weigh belt gravimetric feeders. There are two modules for each feeder, the ISC-CM *plus* feeder control module and the ISC-FC *plus* module for motor speed control. These modules work together to provide dependable and accurate feeding. In multiple feeder control configurations, the ISC-CM *plus* feeder control modules are interconnected by a bus and connected to either the Congrav<sup>®</sup> OP M *plus* or the Congrav<sup>®</sup> OP15 Operator Interface by a single cable connection (SCC). Direct communication is also available for most host/PLC systems via one of the following: Ethernet Modbus TCP, Profibus DP, Profinet, EtherNet/IP, others on request. For Siemens PLC operation, loadable function blocks (software) are available to ensure dependable feeder performance.

Each ISC-CM *plus* also has a connection port to a PC, laptop or Brabender Congrav<sup>®</sup> OP 1T Operator Interface for diagnostics and set up. These features allow the Brabender ISC *plus* systems unparalleled ease of installation and service as:

- The single cable connection reduces field wiring.
- The prewired and feeder mounted ISC *plus* modules reduce the main control panel size.
- The feeder and ISC *plus* modules are factory tested and ready to be operated.
- Since the ISC-FC *plus* module powers the ISC-CM *plus* module there is only a single power source.
- Easy expansion for future feeders.
- Easy integration into existing feeder lines.

The Brabender Intelligent Signal Conditioners ISC-CM *plus* and ISC-FC *plus* conform to CE directives and feature high electromagnetic compatibility.



## Technical Data

### Application

- Control of multiple Brabender loss-in-weight or weigh belt gravimetric feeders

### Design

- Brabender Intelligent Signal Conditioner ISC-CM *plus* (feeder control module)



- Brabender Intelligent Signal Conditioner ISC-FC *plus* for motor speed control



The Brabender ISC *plus* (Intelligent Signal Conditioning) modules are designed for the most demanding industrial environments. The modules are mounted on the feeders, prewired and tested. Both modules offer the following:

- IP65 (≈ NEMA 4) rated enclosure and fittings
- Epoxy painted enclosures (RAL 7035)
- Operation in environmental conditions of 0-50°C (32-122°F) and up to 85% humidity without condensation
- Noise immunity in compliance with the following directives and harmonized specifications of the European Union:
  - EN 61000-4-2 (ESD immunity)
  - EN 61000-4-3 (radiated RF immunity)
  - EN 61000-4-4 (burst immunity)
  - EN 61000-4-5 (surge immunity)
  - EN 61000-4-6 (conducted RF immunity)
  - CISPR 16 / EN 55011 class A (interference voltage)
- Compliance with CE directives

### Feeder Control ISC-CM *plus*

The Brabender ISC-CM *plus* module is the feeder control module. It has an advanced 32 bit RISC processor that performs the calculations necessary to provide accurate feeder performance. The ISC-CM *plus* module is powered from the ISC-FC *plus* module (+24 VDC).

Other features are:

#### Interfaces

- SCC field bus: RS 485
- Host/PLC interface (direct communication is available via one of the following: Ethernet Modbus TCP, Profibus DP, Profinet, EtherNet/IP, others on request)
- RS 422 for DigiMASS-2 or IDL-F digital load cells, or strain gauge load cell (with strain gauge to digital converter module)
- RS 485 feeder speed control interface to ISC-FC *plus*
- RS 485 for diagnostics or set up via Congrav® OP 1T, PC or laptop

#### Inputs

- 3 digital inputs (24 VDC) often used for start/stop or interlock
- Frequency input for digital speed feedback (input voltage 24 VDC, frequency range 0-10 kHz)

#### Outputs

- 3 24 VDC relay outputs most often used for run, refill and alarms

#### Variations

- ISC-CM-SG *plus* with integrated strain gauge to digital converter module for weigh feeders with strain gauge load cell
- ISC-CM-A *plus* with 1 additional analog input (often used for analog speed feedback) and 1 additional analog output (often used for analog actual value)
- Combination of both

#### Accessories

- Loadable function block (software) for easy Siemens PLC integration
- Congrav® OP 1T touch screen operator interface for diagnostics and set up
- Diagnostics software "Smart Service" available for PC or laptop use

### Speed Control ISC-FC *plus*

The Brabender ISC-FC *plus* module is a variable frequency drive device. It is used for speed control on all three phase AC motors commonly used on Brabender loss-in-weight and weigh belt feeders.

#### Interfaces/Inputs

- Power in: 180-264 V ± 0%, 48-62 Hz (1/N/PE AC). A grounded neutral [TT, TN] is recommended.
- RS 485 for feeder speed control signal from ISC-CM *plus*

#### Outputs

- Three phase motor power supply

### Operating and Display Units

When direct host/PLC communication is not used, Brabender gravimetric feeders with ISC *plus* modules are operated by one of the Brabender touch screen human/machine interfaces Congrav® OP M *plus* (max. 6 feeders) or Congrav® OP 15 (max. 16 feeders).



Congrav® OP M *plus*



Congrav® OP 15

Please refer to the appropriate separate Works Standards for further details.



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