

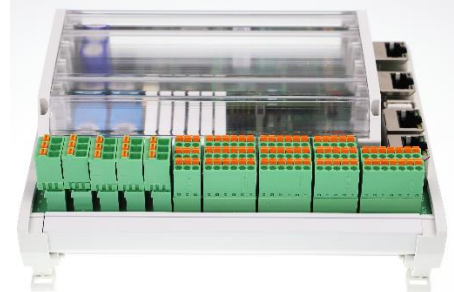
## Feeder Controller

### General Information

The Congrav® CB-E 3.0 is the latest generation of DIN rail mounted controller for all Brabender Technologie loss-in-weight or weigh belt gravimetric feeders. This module is typically mounted in a control cabinet.

Each Brabender Congrav® CB-E 3.0 module has multiple advanced RISC processors that perform the calculations necessary to provide accurate feeder performance and is designed for demanding industrial environments.

The control module Congrav® CB-E 3.0 is interconnected by a bus and connected to either the Congrav® OP1-S (for a single feeder) Congrav® OP6-E (up to 6 feeders) or the Congrav® OP16-E (up to 16 feeders) The controllers can also communicate directly with most host/SPS systems, whether as a single component or multi-component controller.



The unit conforms to CE directives and is characterized by high electromagnetic compatibility.

### Inputs and outputs

Inputs	6 digital inputs* (24 VDC) often used for start/stop or interlock 1 digital input can be used as frequency input for digital speed measurement.
Outputs	6 digital outputs* (24 VDC) often used for run, refill and alarms

\*1 input/output is occupied internally – only 5 inputs/outputs are available for customer use

### Interfaces

The control module Congrav® CB-E offers several interfaces including:

Interface	Function
Interface for IDL-F, MD, DLS load cell and DMS digital Module (RS 422)	To read the load cell weight signal
Host-/SPS-interface	Communicate to host systems. Available protocols: Ethernet Modbus TCP, Profibus DP, Profinet, EtherNet/IP
Brabender-fieldbus interface (RS 485)	For communication to Congrav® OP6-E and OP16-E operator interface or PC for operation, diagnostics and maintenance
Speed controller (RS 485)	To regulate motor speed
I/O interface	Digital and analog expansion modules (RS 485)
Interface to Congrav® OP1-S (RS485)	For communication to Congrav® OP1-S single feeder operator interface for operation, diagnostics and maintenance

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### Optional expansion

The hardware of the Congrav® CB-E 3.0 can be extended by optional expansion modules. These modules are connected to the serial interface and are supplied with 24VDC power from the Congrav® CB-E 3.0.

Digital I/O module: 4 digital inputs (e.g. start, stop, clear fault, etc.) and 4 digital outputs (e.g. operation, fault, etc.)

Analog I/O module: 2 analog inputs 0(2)-10 V (e. g. analog guidance), 2 analog outputs 0(4)-20 mA (e. g. process value, manipulated variable)

### Technical Specification

Technical Specification	
Rated voltage	DC 24V (20 - 36V)
Ripple, spikes	< 200mVss; < 300mVss
Rated power	Type. 10 VA (with extensions up to 24 VA)
Rated current	1000 mA
Fuses	Reverse polarity protection + electronic fuses Fuse external I/O: 1 AT
Ambient temperature	0°C to +45°C (32°F to +113°F)
Transport/storage:	-20°C to +85°C (-4°F to +185°F)
Humidity of the air	Up to 85% without condensation
Protection	IP 20 (~ NEMA 1)
Dimensions (HxWxD)	143 x 177 x 69 mm
Housing material	Plastic
Mounting	DIN rail
Weight	Aprox. 0.6 kg (1.3 lb)

### Electromagnetic compatibility (EMC)

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Emitted interference	DIN EN 61131-2 : 2008	
	Test method: DIN EN 55016-2-3	
Interference resistance	DIN EN 61131-2 : 2008	
	Requirement	Norm
	ESD	EN 61000-4-2
	HF radiation	EN 61000-4-3
	Burst	EN 61000-4-4
	Surge	EN 61000-4-5
	Inflow	EN 61000-4-6