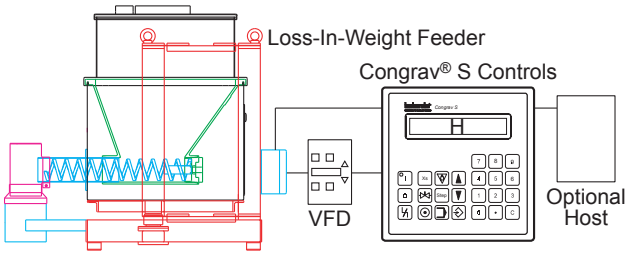
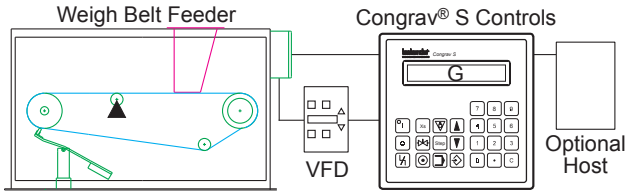
# Continuous Gravimetric Feeder Controls

## Congrav® S Model Specifications




### RELATED DOCUMENTS:

7200-C00-1 – Continuous Gravimetric Controls Table of Contents
7200-C25-1 – Product Description
7200-C26-1 – Model Selection Guide
7200-C31-1 – Standard Options and Accessories

### MODELS

| Model Number | Software Type | Single Feeder Control Feeder Types |
|---|---|---|
| Congrav-S/H | H | Loss-In-Weight Screw Feeders<br>Loss-In-Weight Vibrating Feeders<br>Loss-In-Weight Fiber Feeders<br>Loss-In-Weight Liquid Feeders |
| Congrav-S/G | G | Weigh Belt Feeders |


### SOFTWARE

| | | |
|---|---|---|
| **Software Configuration** | Manual Data Entry or Automatic Self-Tuning | |
| **Typical Configuration Data** | Maximum Output, PID, Bulk Density | |
| **Feeding Modes** | Gravimetric Feeding | Normal Gravimetric Mode with Refill |
| | Volumetric Feeding | Only for Loss-In-Weight - Run at a constant motor speed with Refill |
| | Gravimetric Discharging | Only for Loss-In-Weight Feeders - Gravimetric Mode to nearly empty the hopper - no Refill |
| | Discharging | Run at a constant motor speed to nearly empty the hopper - no Refill |
| **Alarms** | Underload/Overload; Speed Min/Max; Deviation +/-; Refill Fault; Load Cell Fault | |
| **Alarm Modes** | Warning Only On Alarm, Cut-Out On Alarm with configurable Time Delay | |

### ELECTRICAL SPECIFICATIONS

| | |
|---|---|
| **Input Power** | 85-250 VAC, 47-63 Hz, Single Phase, 35VA; Standard IEC 3 prong connector (with two 2A, Time Delay fuses) |
| **Enclosure Rating** | Front Panel: IP65; Rear Housing IP30 |
| **Electrical Approvals** | IEC, CE |
| **Electrical Standards** | VDE 0842 Part 4, IEC 801 Part 4 (Burst); VDE 0842 Part 2, IEC 801 Part 2 (ESD), VDE 0878/ VDE 0875 (Radio Interference), EN60204-1:1992, EN50081:1993, EN50082:1994 |

## BASE UNIT INPUTS, OUTPUTS AND COMMUNICATIONS

| | | |
|---|---|---|
| **I/O Connections** | All I/O wiring to the separate Field Wiring Module with Screw Terminals. The Field Wiring Module is connected by cables to the Congrav® S **(not included if controller is ordered without a panel)**. | |
| **Feeder I/O** | | |
| **Load Cell** | IDL-F or DigiMASS®-2 Digital Load Cell or AED Precision Strain Gauge Load Cell Amplifier | Digital, RS-422 |
| | Standard Strain Gauge Load Cell | Analog, 0-25mV (Optional 0-10V) |
| **Motor** | Motor Speed Control Signal | Analog, 0-10V, 0.5s per Update |
| | Motor Speed Feedback | Digital Tachometer, Pulse – Max. 6KHz |
| | | Analog, 0-10V |
| **User I/O** | | |
| **8 Digital Inputs** | Interlock | Isolated, Selectable Logic, 24V |
| | Start; Stop; Alarm Reset; Refill (H), Autotare (G); Gravimetric Discharge (H) | Isolated, Positive Logic, 24V, Pulse (0.5-2sec) |
| | Key Switch | Isolated, Positive Logic, 24V |
| **8 Digital Outputs** | Operation; Alarm; Refill (H), Autotare (G) | Dry Contact, SPDT (230VDC, 2A) |
| | Feed Rate Deviation; Overload; Underload; Alarm Report | Isolated, Positive Logic, Open Emitter, 24V, 0.25A |
| | Throughput Pulse (Min. Duration: 100ms, Maximum Frequency: 5Hz) | Isolated, Negative Logic, Open Collector, 24V, 0.25A |
| **1 Analog Input** | Remote Setpoint *1 | Isolated, 0-10V |
| **1 Analog Output** | Actual Feed Rate | Isolated, 0/4-20ma |
| **System Communications** | | |
| **Host Communications** | With other Congrav® S controls | RS-422 Master/Slave operation |
| | Standard Host Communications | RS-422 (Siemens RK512 with 3964R) |
| | Optional Internal Add-in Card | Profibus-DP |
| | Optional External DataLink Module | Data Highway+, Modbus RTU or DF1 |

*1 The Analog Input is only available if not used for Motor Speed Feedback

## ENVIRONMENTAL SPECIFICATIONS

| | | |
|---|---|---|
| **Temperature** | **Ambient** | Operating: 0° to 45°C (32° to 112°F), Storage: -40° to 85°C (-40° to 185°F) |
| **Humidity** | **Ambient** | 0% to 85% (no condensation) |
| **Pressure** | **Altitude** | To 10,000 feet (3,048 m) |
| **Vibration** | | Normal plant vibration does not effect performance. |

## ACCURACY

| | |
|---|---|
| **Digital Load Cell** | 1:1,000,000 resolution (IDL-F, AED); 1:4,000,000 resolution (DigiMASS®) |
| **Analog Load Cell** | 1:32,000 resolution |

## Standard Options and Accessories (See Document 7200-C31-1 for Details)

### I/O Options

| | |
|---|---|
| **IO-3A** | Analog I/O Card (2 AI, 2 AO) with 6' Cable |
| **IO-5A** | Printer Interface |
| **IO-9** | Field Wiring Module |
| **IO-10** | Field Wiring Cable Set |

### Host Communications

| | |
|---|---|
| **HO-1A** | Internal Profibus Add-in Card |
| **HO-5A** | External DataLink Module for DH+ (DL-2000) |
| **HO-6A** | External DataLink Module for ModBus RTU or DF1 (DL-4000) |

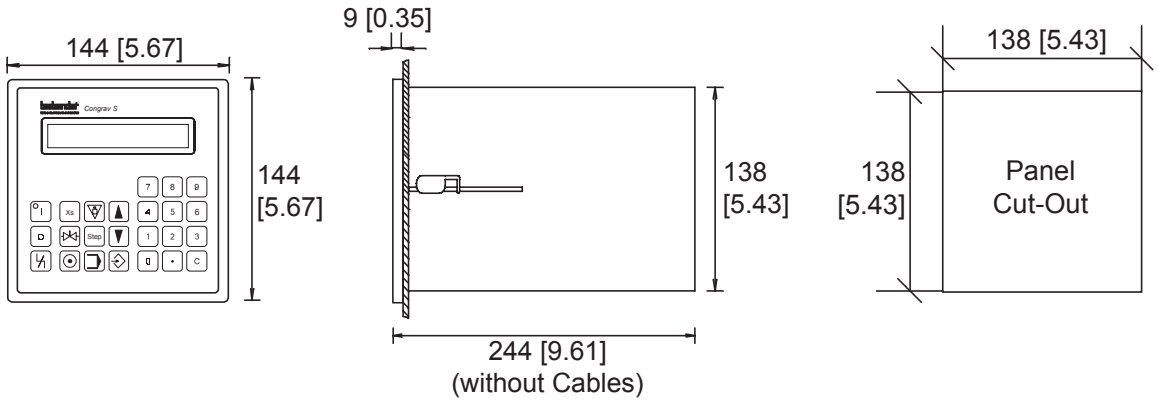
### Panel Enclosures

| | |
|---|---|
| **PE-3A** | NEMA 12 – Wall Mount, Lexan Window |
| **PE-7A** | NEMA 4X – Stainless Steel Wall Mount |

### Accessories

| | |
|---|---|
| **ACC-20A** | Precision Digital Load Cell Amplifier (AED) |
| **ACC-25A** | Signal Converter – BT-1100 (1 Signal) |

## Mechanical Drawing



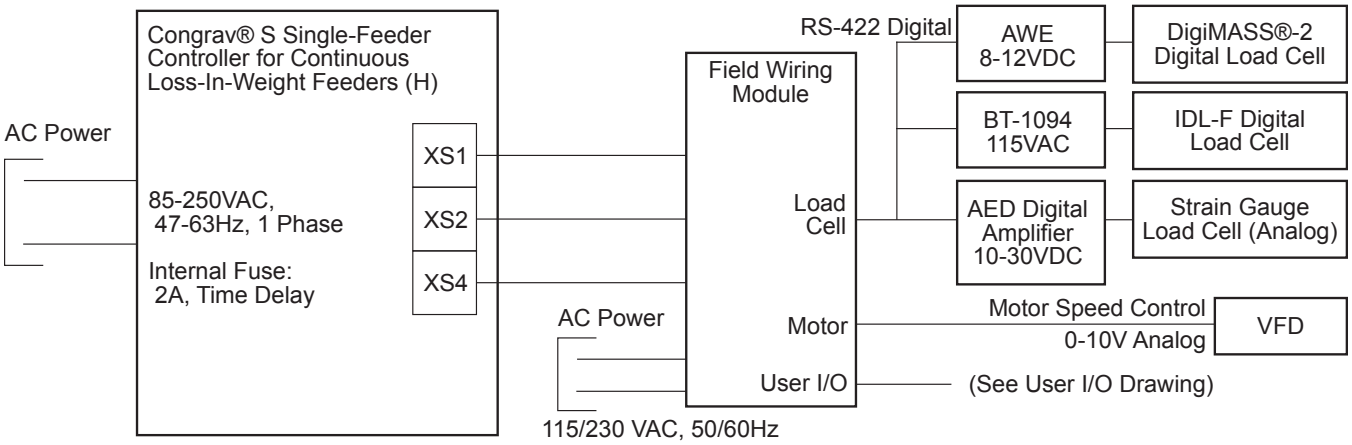

**Notes:**

1) All Dimensions are in Millimeters [Inches]
2) Cooling must be sufficient to prevent exceeding the maximum allowable temperature

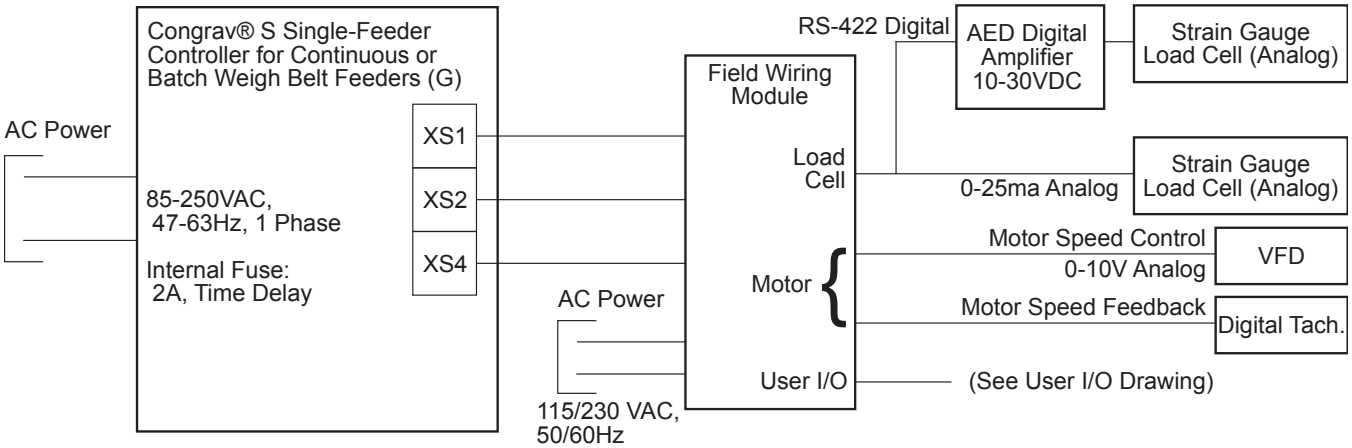
## Typical Feeder Electrical Connections

**Note:** The power wiring and the wiring beyond the Field Wiring Module are by others.

**Loss-In-Weight**

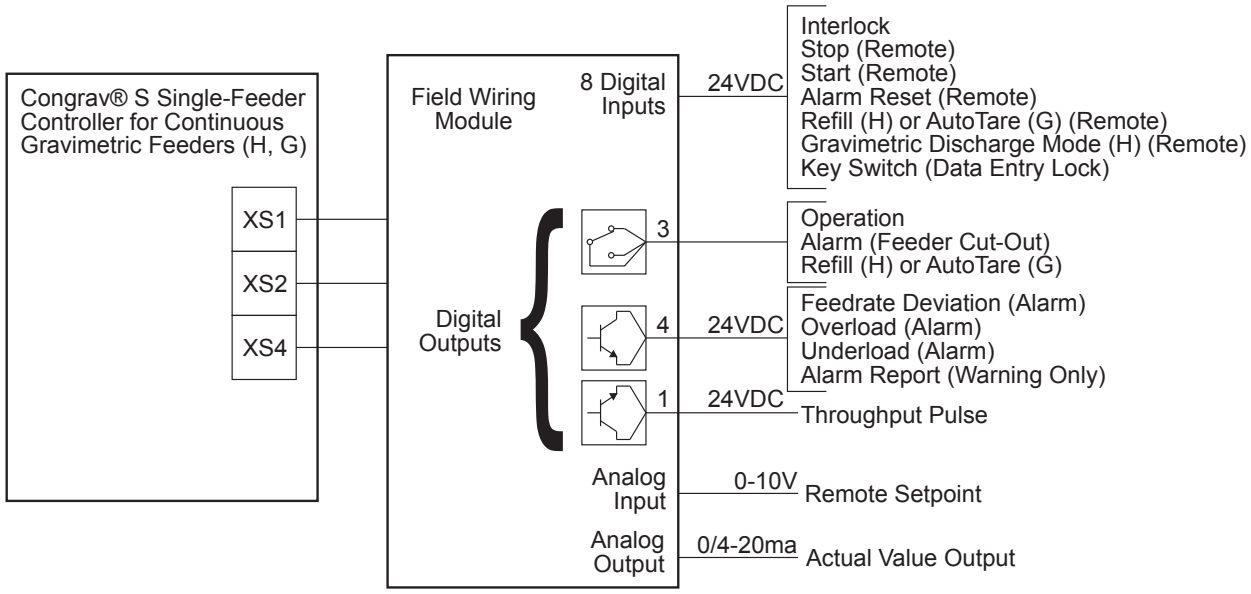



**Weigh Belt**



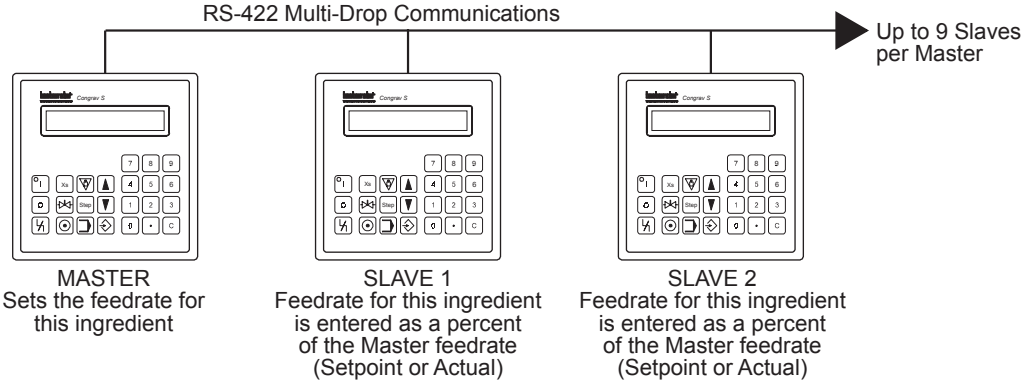
## User I/O Connections

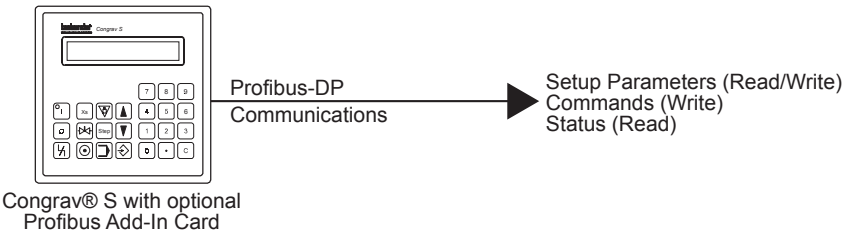
**Note:** The power wiring and the wiring beyond the Field Wiring Module are by others.

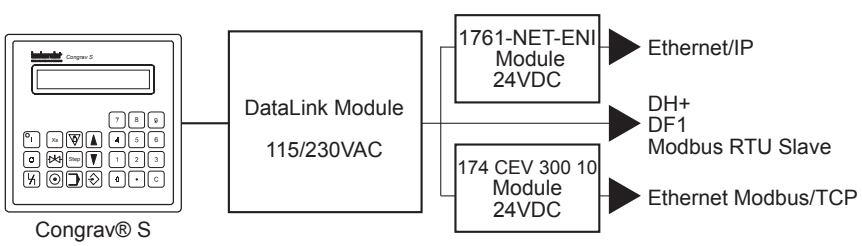



## Communications Configurations

**Note:** The wiring is by others.




**Head Office:**
6500 Kestrel Road
Mississauga, Ontario
Canada, L5T 1Z6

Telephone: (905) 670-2933
Toll Free: (888) 284-4574
Facsimile: (905) 670-2557
Email: sales@brabenderti.com