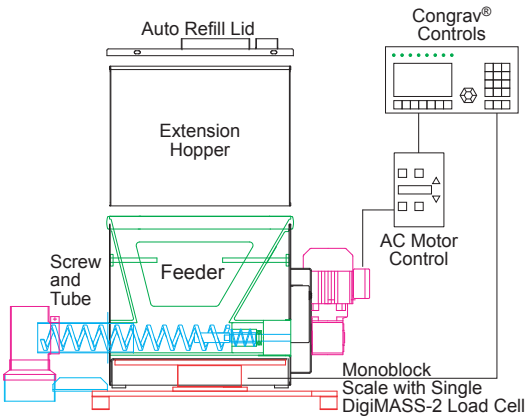
Loss-In-Weight FlexWall® Plus Feeders

DDW-MD5-FW40/5Plus, DDW-MD5-FW40/6Plus Model Specifications



RELATED DOCUMENTS:

3110-C00-1 – Loss-In-Weight FlexWall® Plus Table of Contents
3110-C25-1 – Product Description
3110-C26-1 – Model Selection Guide
3110-C31-1 – Standard Options and Accessories
7200-C25-1 – Congrav® Controls

Components:

1300-C21-2 – FlexWall® Screw Trough
1300-C21-3 – AC Motor Controller
1300-C21-9 – Digital and Analog Scales
1300-C21-10 – Digital Load Cell (DigiMASS-2)
7200-C30-5 – ISC Controls (ISC-CM, ISC-DC)

WEIGHTS AND MEASURES

Model Number	Total Scale Capacity	Feeder Dead Weight	Max. Ingredient Capacity	Screw Trough Volume	Extension Hopper Volume	Total Volume
	Kg (lb)	Kg (lb)	Kg (lb)	liters (cu.ft.)	liters (cu.ft.)	liters (cu.ft.)
DDW-MD5-FW40/5Plus-50 DDW-MD5-FW40/6Plus-50	95 (209)	48 (106)	47 (103)	10 (0.35)	50 (1.8)	60 (2.15)

SCREW AND TUBE SIZES AND FEED RATES

Screw and Tube Designation	Max. Particle Size	Tube ID	Tube OD	Max. Feed Rate at Specified Screw Speed*			
				High Screw Speed**		Low Screw Speed	
	mm (inch)	mm (inch)	mm (inch)	RPM (Hz)	cu.ft./hr (liters/hr)	RPM (Hz)	cu.ft./hr (liters/hr)
Spiral Screw and Tube for Powders							
S18/13-210	1.5 (0.06)	21 (0.83)	25 (0.98)			144 (75)	0.708 (20)
S18/19-210	1.5 (0.06)	21 (0.83)	25 (0.98)			144 (75)	1.16 (32.8)
S20/24-210	0.5 (0.02)	21 (0.83)	25 (0.98)			144 (75)	1.93 (54.7)
S24/35-260	1.0 (0.04)	26 (1.02)	30 (1.18)			144 (75)	4.35 (123)
S28/22-320	2.0 (0.08)	32 (1.26)	35 (1.38)			144 (75)	3.61 (102)
S28/35-320	2.0 (0.08)	32 (1.26)	35 (1.38)			144 (75)	6.01 (170)
S33/35-350	1.0 (0.04)	35 (1.38)	38 (1.50)			144 (75)	8.47 (240)
S40/27-443	2.2 (0.08)	44.3 (1.74)	48.3 (1.90)			144 (75)	9.56 (271)
S40/42-443	2.2 (0.08)	44.3 (1.74)	48.3 (1.90)			144 (75)	15.3 (433)
Spiral Screw and Tube for Granules/Pellets							
S18/13-320	7.0 (0.28)	32 (1.26)	35 (1.38)	251 (75)	1.73 (49)	144 (75)	0.991 (28.1)
S18/19-320	7.0 (0.28)	32 (1.26)	35 (1.38)	251 (75)	2.83 (80.2)	144 (75)	1.62 (45.9)
S20/24-320	6.0 (0.24)	32 (1.26)	35 (1.38)	251 (75)	4.71 (133)	144 (75)	2.7 (76.5)
S24/35-350	5.5 (0.22)	35 (1.38)	38 (1.50)	251 (75)	10.6 (301)	144 (75)	6.09 (172)
S28/22-443	8.2 (0.32)	44.3 (1.74)	48.3 (1.90)	251 (75)	8.81 (249)	144 (75)	5.05 (143)
S28/35-443	8.2 (0.32)	44.3 (1.74)	48.3 (1.90)	251 (75)	14.7 (416)	144 (75)	8.42 (238)
S33/35-443	5.7 (0.22)	44.3 (1.74)	48.3 (1.90)	251 (75)	20.7 (586)	144 (75)	11.9 (336)
Blade Screw and Tube							
B28/28-320	2.0 (0.08)	32 (1.26)	38 (1.50)			144 (75)	3.68 (104)
B32/38-350	1.5 (0.06)	35 (1.38)	38 (1.50)			144 (75)	7.14 (202)
B40/32-443	2.2 (0.08)	44.3 (1.74)	48.3 (1.90)			144 (75)	9.56 (271)
B40/46-443	2.2 (0.08)	44.3 (1.74)	48.3 (1.90)			144 (75)	14.5 (409)
Mass Flow Screw and Tube							
F33/22/35/K24-350	1.0 (0.04)	35 (1.38)	38 (1.50)			144 (75)	1.81 (51.3)
F33/22/35/K13-350	1.0 (0.04)	35 (1.38)	38 (1.50)			144 (75)	3.96 (112)
F40/32/46/K15-443	2.2 (0.08)	44.3 (1.74)	48.3 (1.90)			144 (75)	9.37 (265)

* The screw speed shown is the standard maximum Loss-In-Weight screw speed (75% of full speed). Higher maximum screw speeds are possible. The Maximum Feed Rates are theoretical values based on a screw filling efficiency of 100% at the specified screw speed. Ingredient flow characteristics determine the screw filling efficiency.

** The high screw speed is only available on '/6' models.

Easy Change Design Option for DDW-MD5-FW40Plus Feeders

Removable with Ingredient still in the FlexWall® Screw Trough!

FlexWall® 40 Plus feeders are available with a special Easy Change design. In this design, the outer housing, FlexWall® screw trough, Screw and Tube can be removed as a single assembly. This way, the ingredient being fed can be changed quickly and without having to completely empty the ingredient from the screw trough. Or, for applications that require the screw trough, screw or tube to be cleaned, another assembly can be installed virtually eliminating downtime during the cleaning procedure!

Change-over only requires releasing two latches at the back of the feeder. The assembly is then slid forward, then up. The next FlexWall® Screw Trough, Screw and Tube assembly is then latched into place and the feeder is ready to go!

Order Option ST-10.

MATERIALS OF CONSTRUCTION

Scale	Mild Steel baseplate, enamel painted Light Gray (RAL 7035), Aluminum and 304SS
Unweighed Process Connection	304SS, electropolished, with polyurethane flexible connection to Vertical Outlet
FlexWall® Flexible Screw Trough	White polyurethane, resistant to abrasion, mild acids and alkaline solutions, FDA approvable compound
Feeder Housing	304SS, 2B finish inside, mirror finish outside
Screw and Tube	304SS, 2B finish, electropolished
Screw Drive Shaft	304SS, Polyurethane
Screw Drive Shaft Seals	Lip Seals (2)
Extension Hopper and Lid	304SS, 2B finish inside, mirror finish outside
Gaskets	Neoprene

MECHANICAL PROCESS CONNECTIONS

Refill (on Lid)	Pipe stub connection. See Mechanical Drawing for location and size.
Vent (on Lid)	Pipe stub connection. See Mechanical Drawing for location and size. The vent allows dusty air to escape during refill and atmospheric air to enter during feeding. Brabender offers a vent filter for pellets or non-dusty ingredients. For powders, dust collector is by others.
Outlet	Standard is vertical outlet with unweighed process connection.

ENVIRONMENTAL SPECIFICATIONS

Temperature	**Ambient**	Operating: 0° to 40°C (32° to 104°F), Storage: -40° to 40°C (-40° to 104°F)
	Ingredient	Continuous: 0° to 60°C (32° to 140°F), Intermittent: -20° to 60°C (-4° to 140°F)
Humidity	**Ambient**	5% to 95% (no condensation)
	Ingredient	The ingredient flow characteristics may vary with excessive humidity. The feeder must be dry when feeding.
Pressure	**Altitude**	To 10,000 feet (3,048 m)
	Ingredient	The pressure inside the feeder should be the same as outside the feeder (see Option FC-4 below).
Vibration		The load cell has adjustable filter levels for most typical in-plant vibration.

CONTINUOUS FEED RATE ACCURACY (Batching Accuracy: ±$^{1}/_{10,000}$ Scale Capacity)

Measuring Criteria	30 consecutive samples over sample time of 10 to 120 seconds
Feed Range	15:1 screw speed range
Repeatability	± 0.2% to 1% of sample average at 2 sigma, depending on ingredient flow properties
Linearity	± 0.5% over a screw speed range of 10:1 for each screw type

Standard Options and Accessories (See Document 3110-C31-1 for Details)

Scale Options

SC-1(A/B/C)	Strain Gauge Load Cell

Extension Hoppers and Lids

XH-2(A/B)	Extension Hopper Lid
XH-4B	Ext. Hopper Safety Grate
XH-7	Bag-Loading Hopper with Safety Grate and Lid
XH-8	Extension Hopper Handles

Screw and Tube Options

ST-2B	Outlet Plunger Valve
ST-2C	Outboard Screw Bearing
ST-3	Tube Support with Guy Wire
ST-5	Air Purged Seal
ST-10	Easy Change Screw Trough, Screw and Tube Design

Optional Materials of Construction

MC-1(A/B/D)	Scale Finish Options
MC-2(B/C)	FlexWall® Screw Trough Options
MC-3(A/B/C)	316SS Ingredient Contact Parts
MC-4(A/B/C)	Food Grade Construction

Motor and Drive Options

MD-2(A-L)	Screw VFD Options

Flexible Connections

FC-1	Flexible Inlet Connection
FC-2	Flexible Vent Connection
FC-3	Flexible Outlet Connection
FC-4	Outlet Pressure Compensation

Refill Options

RF-1	Refill Knife Gate (NEMA 4)
RF-2	Refill Knife Gate Limit Switches
RF-3	Mounting Flanges for Knife Gate

Modifications for Hazardous Areas

XP-2	Refill Knife Gate (NEMA 7)
XP-3	Refill Knife Gate Limit Switches (CL.I, DIV.1)
XP-5(A-D)	Loss-In-Weight Feeder Suitable for Hazardous Areas

Accessories

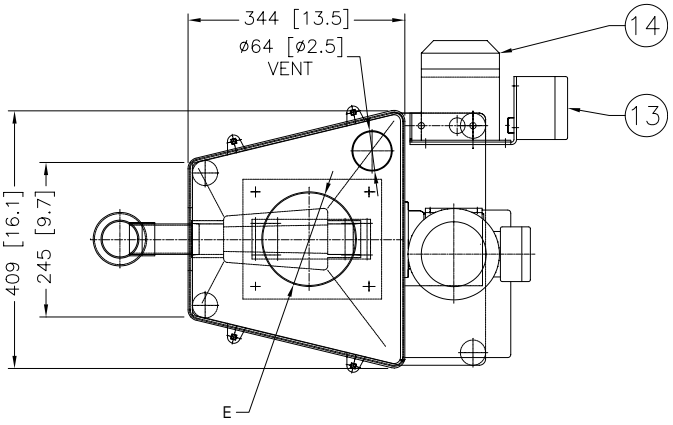
ACC-3	Level Probe Connection
ACC-7A	Vent Dust Bag
ACC-16A	Feeder Lift Station

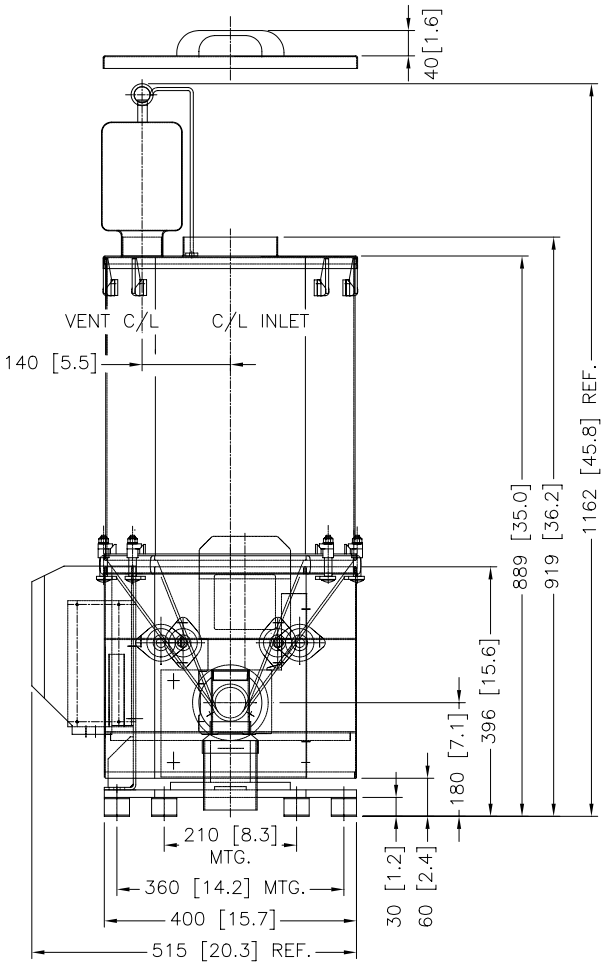
Extra Parts Ordered with Feeder

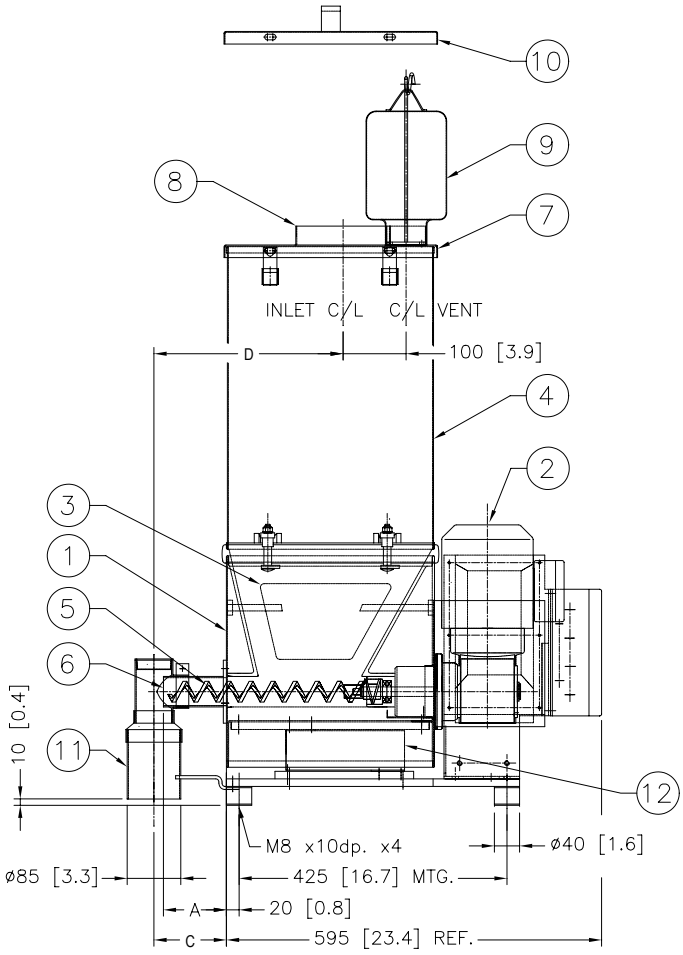
EP-1	Extra Screw Trough
EP-2	Extra Screw
EP-3	Extra Tube

Mechanical Drawing

ITEM	DESCRIPTION
1	FlexWall® Plus DDW-MD5-FW40/6Plus Feeder
2	Screw Motor
3	Paddles
4	Extension Hopper - 50L (1.8 cu.ft.)
5	Screw
6	Tube
7	Auto Refill Lid (Optional)
8	Inlet (On Auto Refill Lid)
9	Vent Dust Bag (Optional)
10	Manual Refill Lid (Optional)
11	Unweighed Process Connection
12	Monoblock Scale with Single DigiMASS-2 Load Cell (MD5)
13	Feeder Controller (ISC-CM)
14	AC Motor Controller (ISC-FC)







Notes:

1) All Dimensions are in Millimeters [Inches]

2) The Junction Boxes shown are for use with ISC controls - other Junction Boxes are similar.

Description	'A'	'C'	'D'
Standard Tube Length	100 [3.9]	115 [4.5]	300 [11.8]
Standard Extended Tube Length	250 [9.8]	265 [10.4]	450 [17.7]

Description	'E'
Standard Inlet Diameter	150 [5.9]
Standard Larger Inlet Diameter	200 [7.9]

Empty Feeder and Scale Weight	Kg (lb)
With 50L (1.8 cu.ft.) Extension Hopper	67 (148)

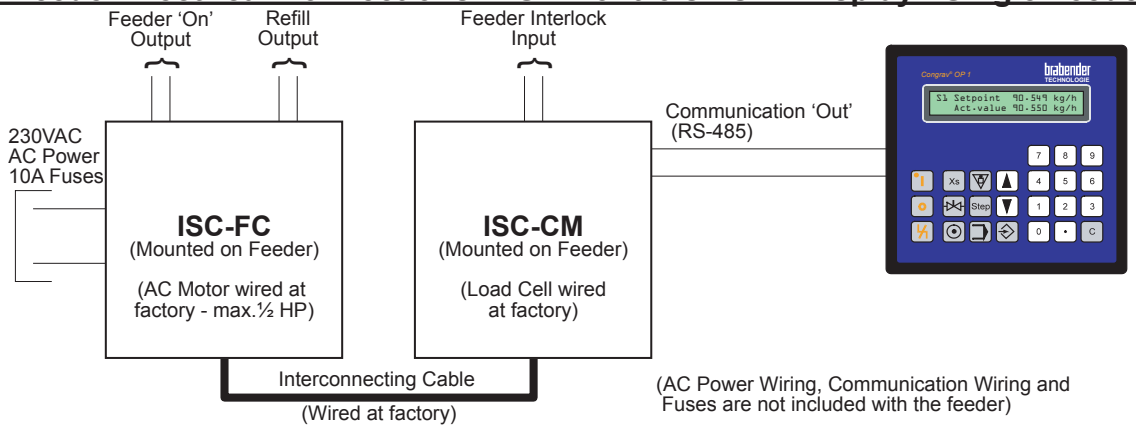
Screw Availability

1) All Tubes and standard Spiral Screws are available in Standard and Standard Extended lengths from stock

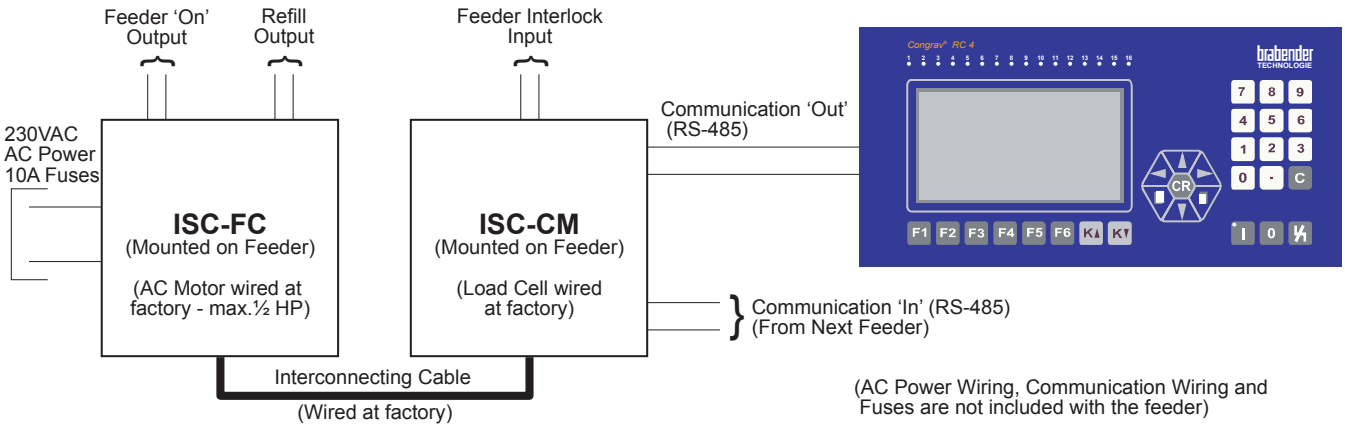
2) Whenever possible, use a stocked length screw and tube and move the inlet location to align the inlet and outlet of the feeder with the existing equipment

3) All Spiral Screws requiring modifications, all Blade Screws and all Mass Flow Screws are special order

Typical Feeder Electrical Connections – ISC Controls / OP1 Display - Single Feeder



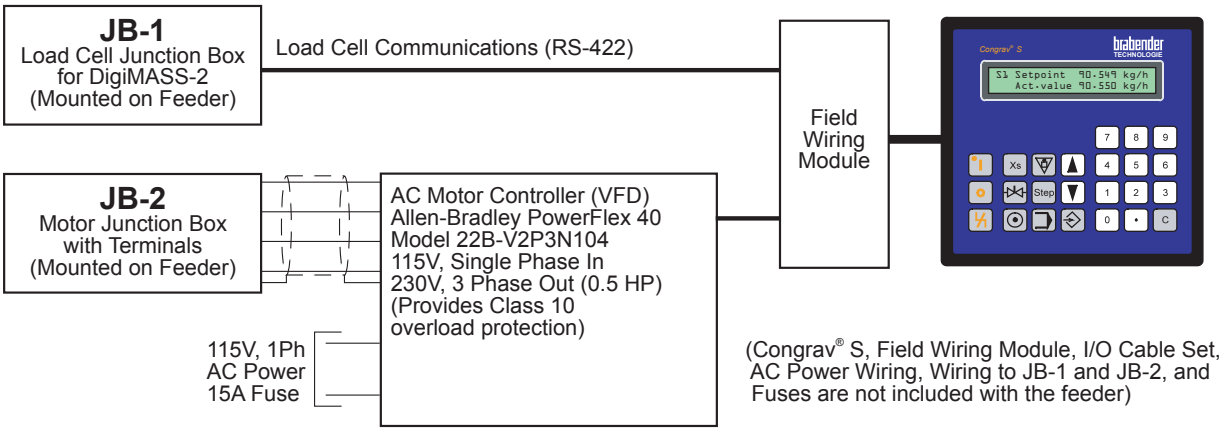
Typical Feeder Electrical Connections – ISC Controls / RC4 Display - Multiple Feeders



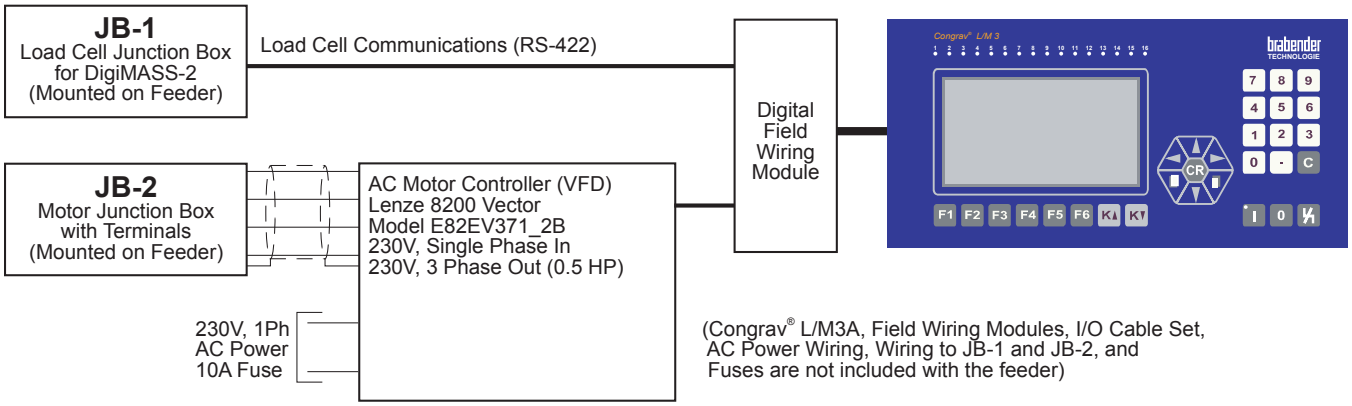
FEEDER ELECTRICAL SPECIFICATIONS - FEEDERS WITH ISC CONTROLS
(See Document 7200-C30-5 for Information on ISC Controls)

Screw/Paddle AC Motor Controller – ISC-FC	**Input Power:** 230 VAC, 50/60Hz, Single Phase; **Motor Output:** 230 VAC, 3 Phase; **Motor Control I/O:** RS-485 (ISC-CM); 24 VDC Out, 2 Dry Contact Outputs; **Enclosure:** IP55 (NEMA 12)
Feeder Controller – ISC-CM	**Input Power:** 24 VDC (from ISC-FC); **Load Cell Input:** RS-422 (DigiMASS-2); **Motor Control Output:** RS-485 (ISC-FC); Congrav® Communications (ISC); **Enclosure:** IP65 (NEMA 12)
Screw/Paddle Motor	½ HP (0.37 KW), 230/460 VAC, 3 Phase, TEFC
Load Cell	Monoblock Scale with a Single DigiMASS-2 Load Cell with Serial Communications (RS-422); **Enclosure:** IP64 (NEMA 12)

Typical Feeder Electrical Connections – Congrav® S Controls - Single Feeder



Typical Feeder Electrical Connections – Congrav® L/M3A Controls - Multiple Feeders

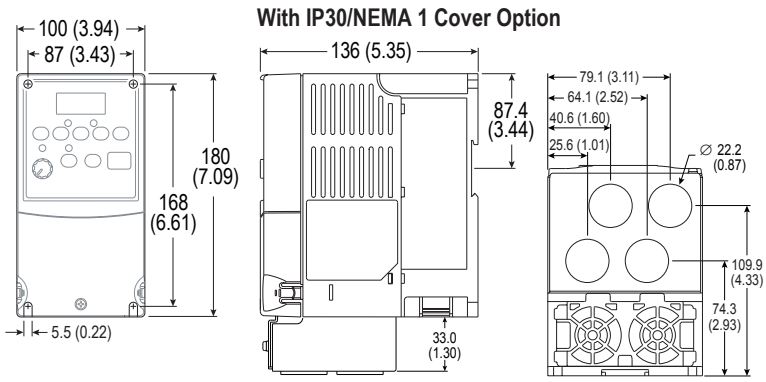


FEEDER ELECTRICAL SPECIFICATIONS - FEEDERS WITH CONGRAV® CONTROLS
(See Document 7200-C00-1 for Information on Congrav® Controls)

Screw/Paddle AC Motor Controller (A-B VFD) – Congrav® S	**Input Power:** 115 VAC, 50/60Hz, Single Phase; **Motor Output:** 230 VAC, 3 Phase; **Motor Control Input:** 0-10V; **Enclosure:** NEMA 1 with Keypad for Speed Control and Run/Stop
Screw/Paddle AC Motor Controller (Lenze VFD) – Congrav® L/M3A	**Input Power:** 230 VAC, 50/60Hz, Single Phase; **Motor Output:** 230 VAC, 3 Phase; **Motor Control Input:** RS-485; **Enclosure:** NEMA 1 with Keypad for Speed Control and Run/Stop
Screw/Paddle Motor	½ HP (0.37 KW), 230/460 VAC, 3 Phase, TEFC
Load Cell for Congrav® Controls	Monoblock Scale with a Single DigiMASS-2 Load Cell with Serial Communications (RS-422); **Enclosure:** IP64 (NEMA 12)
Feeder Mounted Junction Boxes for use with Congrav® Controls	1 NEMA 4 Junction Box for Motor Connections; 1 NEMA 4 Junction Box for DigiMASS-2 Load Cell Connections

Mounting Dimensions for AC Motor Controllers

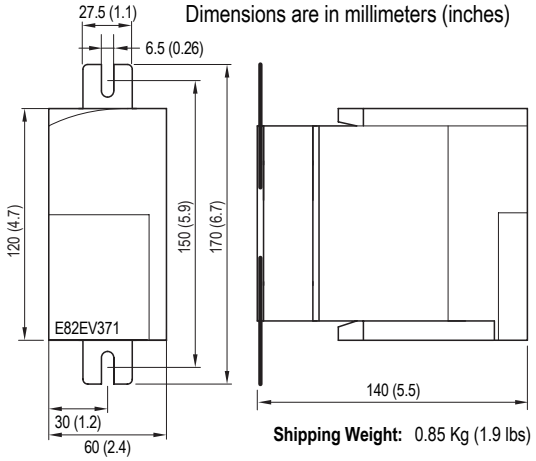
Allen-Bradley VFD (Congrav® S or User-Supplied Controls)



Dimensions are in millimeters (inches)

Shipping Weight: 2 Kg (4.9 lbs)

Lenze VFD (Congrav® L/M3A Controls)

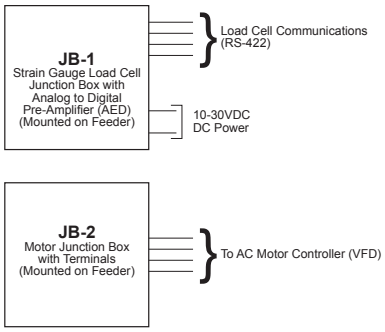


Dimensions are in millimeters (inches)

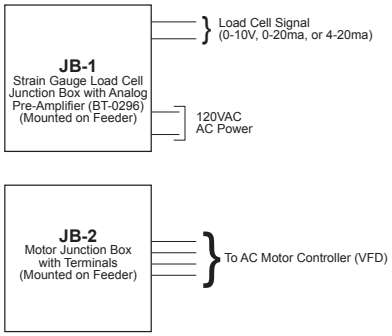
Shipping Weight: 0.85 Kg (1.9 lbs)

Typical Feeder Electrical Connections with Other Controls

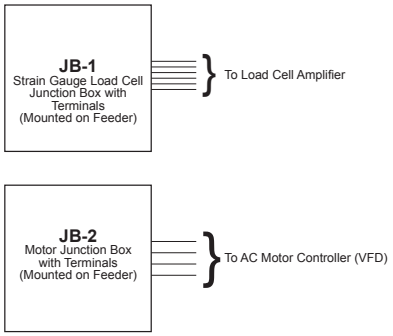
Strain Gauge Load Cell with Precision Amplifier



Strain Gauge Load Cell with Analog Amplifier



Strain Gauge Load Cell with No Amplifier



Note: The Disconnect, Fuse Holders, Fuses and wiring to the feeder are by others.

FEEDER ELECTRICAL SPECIFICATIONS - FEEDERS WITH USER-SUPPLIED CONTROLS

Screw/Paddle AC Motor Controller (A-B VFD)	**Input Power:** 115 VAC, 50/60Hz, Single Phase; **Motor Output:** 230 VAC, 3 Phase; **Motor Control Input:** 0-10V or 4-20ma; **Enclosure:** NEMA 1 with Keypad for Speed Control and Run/Stop
Screw/Paddle Motor	½ HP (0.37 KW), 230/460 VAC, 3 Phase, TEFC
Load Cell for User Controls	Monoblock Scale with a Single Analog Strain Gauge Load Cell; **Enclosure:** IP67 (NEMA 4); Amplifier / Signal Type must be specified
Feeder Mounted Junction Boxes for use with User-Supplied Controls	1 NEMA 4 Junction Box for Motor Connections; 1 NEMA 4 Junction Box for Analog Load Cell Connections

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