

Feedtronic 4004-A

User's Manual



Revision 2.0 09 August 2026

This user's manual is applicable to Feedtronic 4004-A with program versions 101 to 199 where the weight unit is kilogram.

This manual may contain mistakes and printing errors. We accept no liability for technical mistakes or printing errors, or their consequences.

Revision Summary

Rev.	Date	By	Chip Ver.	Change
1.01	26.6.2003	Y.K.	103 and later	Alarm time maximum value is changed from 23:59 to 99:59 mm:ss. If user enters a value of 99:99, alarm is disabled.
1.02	25.12.2003	Y.K.	NA	Correct net name code on page 12
1.03	17.3.2004	Y.K.	NA	Remove parts table from page 4
1.04	26.10.2004	Y.K.	NA	Add FD4004A to Silo wiring
1.05	15.11.2004	Y.K.	NA	Change name of silo connection box to A/D SILO box
1.06	17.07.2006	Y.K.	NA	Change ALARMS passage and add CHECKING LOAD CELLS passage.
1.07	01.04.2009	J.O.	NA	Remove calibration by serial number.
1.08	04.08.2010	J.O.	NA	Reedit manual
1.09	31.01.2012	J.O.	212 and up	Adopt manual to the Pounds versions (212 and up)
1.09.01	03.09.2013	J.O.	212 and up	Add Joint unit Allen lock screw in silo installation.
1.10	7.01.2015	Y.K.	101-199	Add A/D EXTRA SILO, installation update and change checking load cells
1.11	14.01.2015	Y.K.	101-199	Editing of some sections; adding note about silo accuracy in full weight calibration
1.12	15.05.2015	Y.K.	101-199	Add silo leveling instructions
2.0	09.08.2026.	J.O.	101-199	Add the new silo A/D box Remove A/D extra options

Table of Contents

Revision Summary	2
Table of Contents	3
General	5
The Feedtronic 4004-A Parts	5
Front Panel	6
Principle of Operation	7
Free Feed	7
Restrictive Feeding	7
Manual Feed Mode	7
Recalling and Setting Data	8
Recalling	8
Setting Data	8
Starting a New Flock	9
Function List	9
Recalling and Changing	9
Weight	9
Daily Quantity	9
Total Quantity	9
Fill	10
Quantity	10
Feeding Time	10
Water Consumption	10
Clock/Growing Day	11
Skip A Day Counter	11
Feeder Run Time	11
Feeder Start Times	11
Setup Function Codes	12
Stop All	12
Clearing History	12
Checking the Feed Sensor Connection	12
Quantity Error	12
Number of Feed Times	13
Alarm Time	13
Reset Time	13
Skip A Day Setup	14

Net Name – PC Communication.....	14
Number of Feeder Operating Times	14
Minimum Silo Weight.....	15
Zero Data.....	15
Load Cell Constant.....	15
Manual Quantity	15
Silo Calibration	17
Zero Calibration.....	17
Full Weight Calibration.....	17
Alarms	19
Error Numbers, Descriptions, and Solutions.....	19
Solving Calibration Problems	21
Recall Zero Data	21
Recall Load Cell Constant	21
Re-Calibration When the Silo Is Not Empty	21
Zero Calibration.....	21
Full Calibration	21
Solving Installation Problems	23
Checking the Feedtronic 4004-A.....	23
Checking Load Cells	23
Code Summary	25
Controller Installation	26
Connecting Agro Logic's SW2 Feed Sensor to the Controller	26
Connecting Silo A/D Box to the Controller.....	27
Size and Length of Cable Connecting the Silo A/D Box to the Controller	28
Load cell connection.....	28
Silo Hardware Installation Guide.....	29
Main Parts	29
Procedure	29
Checking That the Silo Is Vertically Levelled	33
Connecting Grounding Wire.....	34

General

The Feedtronic 4004-A is designed to weigh up to two silos and give an accurate weight of the feed in each silo.

The Feedtronic 4004-A records and saves daily feed consumption over a 9-day period.

The Feedtronic 4004-A records and saves total feed consumption over the entire flock.

The Feedtronic 4004-A will show the last fill for each silo.

The Feedtronic 4004-A can be used for restrictive feeding, giving out feed up to 8 times in a 24-hour cycle.

The Feedtronic 4004-A will operate 1 auger and 1 feed line motor.

The Feedtronic 4004-A can record water consumption if a water meter is connected.

The Feedtronic 4004-A Parts

- An electronic controller box.
- Silo A/D box.

⚠ Important: The Silo A/D box can accommodate up to 2 silos with 8 legs each.

- Load cells and mounting assemblies according to the total amount of silo legs (maximum 2 silos per unit).

Front Panel



Photo 1 – FD4004A Panel

The panel has these elements (see Photo 1 above):

- The display that shows the silo weight and function data.
- The Function list and Function lights that indicate which function is currently being viewed and/or programmed.
- The Keyboard that is used to choose the different functions and program them.
- Relay lights indicate which relays are in operation.
- The Code and Error list that contains codes for programming and errors representing different alarms.

Principle of Operation

The Feedtronic 4004-A is a stand-alone dual silo weighing control unit. It is possible to set up the Feedtronic 4004-A to run in 3 different feed modes.

Free Feed

In this mode the Feedtronic 4004-A activates the feed auger motor using the feed sensor placed in the feed hopper. When the sensor senses that there is no feed in the hopper, the auger motor will be activated and more feed will be moved into the house. Feed will be given out 24 hours a day.

To set the Feedtronic 4004-A to Free Feeding mode, set a feed quantity of **9.999** (see *Quantity* function).

Restrictive Feeding

In this mode it is possible to distribute a preset amount of feed up to 8 times over a 24-hour time period. The restrictive feed mode can be done daily, once every two days, once every three days, or once every four days (see Skip A Day setup). When the preset start time is reached (see Feeding Time), the Feedtronic 4004-A will activate the feed auger motor and feed will be moved into the house. The amount moved into the house can be set up in the Quantity function.

Once the preset feed quantity has been moved into the house, the feed auger motor will stop. The feed lines can be run up to 8 times a day (see Feeding Time).

To set the Feedtronic 4004-A to restrictive feeding mode, set the required feed quantity to be given in the Quantity setting.

Manual Feed Mode

It is possible to bring in a quantity of feed immediately after the user sets it (see setup function Manual Quantity).

Recalling and Setting Data

It is possible to recall and change all data in the Feedtronic 4004-A.

Recalling

Each press on the DATA button will scroll through the function list on the left side of the Feedtronic 4004-A. Each time you press the DATA key, a light will illuminate next to the function displaying which function you have chosen. In some cases, 2 lights will light up (see Function List).

Alternately, you can use the shortcut keys to go directly to certain functions.

Each function shows the current stored data.

In certain functions, pressing DATA again will scroll through additional data stored within the function.

Setting Data

1. Go to the function by pressing DATA or alternately use the shortcut keys.
2. The function chosen will show the current stored data.
3. Press on PROG — the first left-hand-side digit or letter will start to blink.
4. You can now change the data using the keyboard numbers.
5. Press on ENTER to store the new data.

⚠ Important: If the entered value is out of the permissible range, the letter E appears at the right-most digit of the display.

If while entering the information you would like to change or cancel, press DATA to start over or PROG to exit without saving the entered value.

⚠ Important: Before running the control unit, it will be necessary to program all the data in both the Function List and the Setup Function Codes.

Starting a New Flock

At the beginning of a new flock, please make sure you have set up all the functions as needed.

Please make sure you:

1. Clear history before starting a new flock (see Clearing History).
2. Always clear last fill quantities (see Fill function), daily and total quantities.
3. It is advisable to do STOP ALL whenever starting a new flock (see Stop All).

Function List

Recalling and Changing

Weight

To view the current weight in silo A or B, press the DATA key until the Weight light is on. On the left side of the display will appear the letter A for silo A. Silo A weight will be shown on the display. Press DATA again to see silo B weight. Alternately, use shortcut keys 1–2 to display the silo weights.

The weight display is in **tons**.

Daily Quantity

To recall the daily feed consumption, press the DATA key until the Daily Quantity light is on, or alternately press shortcut key 3. Once you have entered the daily feed consumption, pressing DATA again scrolls through the last 8 days of feed consumption.

To change the data in Daily Quantity, press PROG — the 0 on the left-hand side of the display will start to blink. Change the data using the keyboard numbers and press ENTER to store the new data.

To clear the daily quantity, change the data to 0. The quantity display is in tons.

Total Quantity

To recall the total feed consumption since the start of the growing period, press the DATA key until the Total Quantity light is on, or alternately press shortcut key 4.

To change the data in Total Quantity, press PROG — the **tL** on the left-hand side of the display will start to blink. Change the data using the keyboard numbers and press ENTER to store the new data.

To clear the total quantity, change the data to 0.

Fill

To recall the amount of feed last put into silo A, press the DATA key until the Fill light is on, or alternately press shortcut key 5. Pressing DATA again will recall the last fill for silo B.

To change the data in Fill, press PROG — the **A** on the left-hand side of the display will start to blink. Change the data using the keyboard numbers and press ENTER to store the new data. Press DATA again to recall and/or change the Fill data for silo B.

The quantity display is in tons.

Quantity

To recall and set the feed quantity for restrictive feeding in kilograms, press the DATA key until the Quantity light is on, or alternately press shortcut key 6.

To change the data in Quantity, press PROG — the **F** on the left-hand side of the display will start to blink. Change the data using the keyboard numbers and press ENTER to store the new data.

This is the amount of feed that is given when Feeding Time starts (see Feeding Time below).

Feeding Time

Feed can be brought into the house up to 8 times over a 24-hour period. Enter here the time of day the feed will be brought into the house.

To create multiple feed times, you must first set up this possibility. See Number of Feed Times for more information.

To view and set the feeding times:

1. Press the DATA key until the Feeding Time lights up, or alternately press shortcut key 7. To scroll through the different feeding times, press DATA.
2. Use the PROG key to enter the current feed time and then use the keyboard to enter the time setting. Press ENTER to store the set times.

At each preset time, the auger motor will start to give the preset quantity (see Quantity above).

If there is a power failure during the feeding time, the unit will remember the amount of feed given out before the power failure and will continue to give the remaining amount when the power returns.

Water Consumption

The Feedtronic 4004-A will count each pulse in the Water Count In input as 1 litre.

To recall the daily water consumption, press the DATA key until the Water Cons light lights up, or alternately press shortcut key 8. Each time you press the DATA key, the previous day's water consumption will be displayed. It is possible to recall up to the last 9 grow days.

Clock/Growing Day

To view the current clock setting, press the DATA key until the Clock/Growing Day light goes on, or alternately press shortcut key 9.

1. To change the clock setting in Clock/Growing Day, press PROG — the C on the left-hand side of the display will start to blink. Change the data using the keyboard numbers and press ENTER to store the new data.
2. To change the grow day in Clock/Growing Day, press the DATA key until the Clock/Growing Day light goes on, or alternately press key 9. Press DATA again and the current grow day will appear on the display. Press PROG — Gr on the left-hand side of the display will start to blink. Change the data using the keyboard numbers and press ENTER to store the new data.

Skip A Day Counter

To view the number of days left until the next feeding day (see Skip A Day), press the DATA key until both the Weight and Daily Quantity lights go on.

Feeder Run Time

To operate the separate feed line motor, the Feeder Run Time has to be set.

To recall the Feeder Run Time, press the DATA key until both the Total Quantity and Fill lights go on, or alternately press shortcut key 0. To change the Feeder Run Time, press PROG — the **rt** on the left-hand side of the display will start to blink. Change the data using the keyboard numbers and press ENTER to store the new data.

The feeder run time setting is in minutes and seconds.

Feeder Start Times

To view the feeder start times (in 24-hour format), press the DATA key until both the Quantity and Feeding Time lights go on. Each press on the DATA key will show the next feeder time.

To change the Feeder Start Time, press PROG — the data on the display will start to blink. Change the data using the keyboard numbers and press ENTER to store the new data.

The number of times that the feed lines can be run depends on the setup value of Number Of Feeder Operating Times.

Setup Function Codes

Stop All

It is possible in the restrictive mode to stop a batch during operation.

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Press the key 0 — FEED STOP will appear and blink on the display.
3. Press ENTER and STOP will appear on the display.

The Stop All function stops all feeding operations immediately. The Feedtronic 4004-A will restart again at the next preset feeding time.

⚠ Important: It is advisable to do STOP ALL whenever starting a new growing period.

Clearing History

When starting a new growing period, it is advisable to clear feed and water history values.

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 7000 and press ENTER. CLEAR.H will appear and blink on the display.
3. Press ENTER to clear all history data.

Checking the Feed Sensor Connection

The Feed Sensor that is connected to Feedtronic 4004-A should output 0 VAC when it detects feed and 220 VAC when no feed is detected. To check that the sensor is connected correctly, do as follows:

1. Press the DATA key until the Weight light lights up, or use shortcut keys 1 or 2.
2. Press PROG. The Weight light and the silo letter (A or b) start blinking.
3. Enter the code 7777 and press ENTER. FEED.IN will appear on the display. If feed is detected by the sensor, FEED will appear on the display. If no feed is detected, no.FEED will be shown on the display.
4. Press the PROG key to exit.

Quantity Error

To avoid overflow after the auger motor stops in restrictive feeding mode, it is possible to set an amount of feed in kilograms that the auger motor will stop before reaching the total amount that was preset.

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 8882 and press ENTER. qnt.Err will appear on the display and then qE will blink.
3. Enter the amount of feed to stop before reaching the total batch and then press ENTER to store the new data. The range allowed is 0–10 kilograms.

Number of Feed Times

To set up the number of feed times, do as follows:

1. Press the DATA key until the Weight light lights up, or press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter (A or b) start blinking.
3. Enter the code 8883 and press ENTER. While entering the code, the letters Cd blink.
4. FEED.NO will appear on the display, then Ft X.
5. Enter the number of feeding times (1 to 8) and press ENTER. The Weight light stops blinking and the display returns to the silo weight display.

Alarm Time

The Feedtronic 4004-A will activate the alarm relay and stop the auger motor if there is a request for feed but no weight decrease is sensed over a set time. Enter here a time period in minutes and seconds that will be used for this wait time.

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 8884 and press ENTER. aLARM.T will appear on the display, then AL will blink.
3. Enter the time period that is to be used as the waiting time. Press ENTER to store the new data.

⚠ Important: To disable this function, enter the value 99:99.

Reset Time

The reset time will reset the daily feed and water consumption automatically to zero and change the grow day.

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 8885 and press ENTER. rESET.T will appear on the display, then rt will blink.
3. Enter the new reset time in 24-hour mode (midnight is 00:00) and press ENTER to store the new data.

Skip A Day Setup

It is possible to feed on every second, third, or fourth day. See the table below.

Number	Fast Days	Feed Days
1	1	1
2	2	1
3	3	1

If feeding is required every day, enter the number 0. To enter the Skip A Day setup function, do as follows:

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 8886 and press ENTER. Skip will appear on the display, then T will blink.
3. Enter the number of days to skip and press ENTER to store the new data.

⚠ Important: Enter the value 9 to use Manual Quantity mode. It is not possible to set the Skip A Day Counter value higher than the value entered for Skip A Day.

Net Name – PC Communication

It is possible to connect the Feedtronic 4004-A to a PC computer. If the Feedtronic 4004-A is connected to the PC, a net-name has to be set to help the computer program recognize each control unit.

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 8887 and press ENTER. nET XX will appear on the display; next, nt will blink (XX represents a 2-digit net name).
3. Enter the net name for the unit and press ENTER to store the new data.

Number of Feeder Operating Times

It is possible to set up to 8 operating times for the feed lines.

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 8888 and press ENTER. FEEDer will appear on the display, then Fr will blink.
3. Enter the number of operating times (1 to 8) and press ENTER to store the new data.

The silo weight will reappear on the display.

Minimum Silo Weight

The Feedtronic 4004-A will activate an alarm if one of the silos' weights is under a preset value.

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 8889 and press ENTER. _X.XXX will appear on the display, and the character will blink (X.XXX represents a weight in tons).
3. Enter the minimum weight for each silo and press ENTER to store the new data.

Zero Data

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 9991 and press ENTER. ZERO will appear on the display, then A XXXX or b XXXX (XXXX is the value of the Zero Data).
3. Press PROG to exit.

⚠ Important: After zero calibration has been done, write down and save this value for future reference (see Zero Calibration with Full Silo).

Load Cell Constant

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking.
3. Enter the code 9992 and press ENTER. Ld.CELL will appear on the display, then A X.XXX or b X.XXX (X.XXX is the value of the Load Cell Constant).
4. Press PROG to exit.

⚠ Important: After full weight calibration has been done, write down and save the value of the Load Cell Constant for future reference (see Full Weight Calibration with Full Silo).

Manual Quantity

The Feedtronic 4004-A can bring in a quantity of feed immediately after the user sets it.

To enter Manual Mode, do as follows:

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 8886 and press ENTER. SKIP will appear on the display and – XX will blink (XX represents a number).
3. Enter the number 9 and then ENTER to store the data.

To set the quantity to give out in manual mode, do as follows:

1. Press the DATA key until the Quantity light is on, or alternately press shortcut key 6.
2. Press PROG — the F on the left-hand side of the display will start to blink. Enter the quantity to be given in manual mode, then ENTER to store the data.
3. The amount entered is immediately given, and the display shows the remaining amount of feed to be given. When all the quantity has been given out, the display will show 0.000.

To return to restricted feed mode, do as follows:

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking.
3. Enter the code 8886 and press ENTER. SKIP will appear on the display and – XX will blink (XX represents a number).
4. Enter the number of days to skip (see Skip A Day setup) and then press ENTER to store the new data.

Silo Calibration

Turn on the power and wait approximately 15 minutes before starting calibration. Make sure that the silo is completely empty.

There are 2 different steps to follow for calibrating the silos:

1. Zero calibration — Zero calibration is where we define the zero weight.
2. Full scale calibration — Full scale calibration is where we calibrate the silo with a known weight.

Zero Calibration

1. Choose the silo to be calibrated by pressing shortcut key 1 (silo 1) or shortcut key 2 (silo 2). Once you have chosen a silo to calibrate, the Weight light will go on.
2. If you chose silo 1, the letter A will appear on the display along with a weight.
3. If you chose silo 2, the letter B will appear on the display along with a weight.
4. Press the Prog key. The silo letter (A or b) will start blinking.
5. Using the keyboard, enter the code 9999. The letters Cd will appear on the display together with the code 9999. Press the ENTER key.
6. A_CAL1 (for silo 1) or b_CAL1 (for silo 2) will appear on the display.
7. Press the 0 key, then ENTER.
8. A_CAL2 (for silo 1) or b_CAL2 (for silo 2) will appear on the display.
9. Press the 0 key again, then ENTER. The calibration process starts.
10. While the calibration process is taking place, the display will show _CAL_A (silo 1) or _CAL_b (silo 2) with blinking underscores. After about half a minute, the weight 0.000 should appear. The silo is zero calibrated.
11. You can stop the calibration at any time by pressing the DATA or PROG keys.

Full Weight Calibration

1. Place an accurate known weight on or in the silo (see Important Note below).
2. Choose the silo to be calibrated by pressing key 1 (silo 1) or key 2 (silo 2). Once you have chosen a silo to calibrate, the Weight light will go on.
3. If you chose silo 1, the letter A will appear on the display along with a weight.
4. If you chose silo 2, the letter B will appear on the display along with a weight.
5. Press the Prog key. The silo letter (A or b) starts blinking.
6. Using the keyboard, enter the code 9998. The letters Cd will appear on the display together with the code 9998. Press the ENTER key. A.FULL1 (silo 1) or b.FULL1 (silo 2) will appear on the display. After approximately 2 seconds, the display will show A 0000 (silo 1) or B 0000 (silo 2).
7. Enter the known weight and press ENTER. AFULL2 (silo 1) or bFULL2 (silo 2) will appear on the display. Enter the known weight again and press ENTER.

During calibration, the display will show ~CAL~A (silo 1) or ~CAL~b (silo 2) with blinking hyphens.

After approximately half a minute, the silo weight is displayed. The silo is now calibrated.

You can stop the calibration at any time by pressing the DATA or PROG keys.

If the letter E appears on the display, then you have not entered the same known weight twice. Enter the correct weight again and press ENTER.

⚠ Important: The accuracy of the silo weighing depends on: (1) the accuracy of the known weight, and (2) the percentage of the known weight value relative to the full weight value (truck fill). The best accuracy is achieved when calibration is done with a known weight that is 100% of the full weight.

For more information about solving calibration problems, see Solving Calibration Problems.

Alarms

When an error occurs in the operation of the Feedtronic 4004-A, the Alarm relay will switch from the NC (Normally Closed) position to the NO (Normally Open) position, thus causing an alarm to go off (if a separate alarm system is connected). The number of the error appears on the display instead of the silo weight. The user can clear the error by pressing any key other than the ENTER key.

If more than one error occurs, the number of the next error can be viewed by pressing the Enter\Next Error shortcut key before any other key is pressed. Certain errors stop feeding until the error condition ends or until the user cancels the error by pressing any key as mentioned above.

Error Numbers, Descriptions, and Solutions

Err 0: Free Feeding Error

This error occurs in Free Feeding mode only, and means that the control unit has sensed weight reduction from both feed silos.

Solution: Close one of the silo hatches.

Note: This error doesn't affect the feeding process.

Err 1: Time Error

This error occurs if the auger motor is running and the control unit does not sense a weight reduction over a set time period (see Alarm Time).

Solution 1: Check that there is feed in the silo and that the auger motor is working properly.

Solution 2: If there is feed in the silo and the auger motor is working properly, try increasing the Alarm Time setting.

Note: This error stops feeding in all modes.

Err 2: Calibration Error

This error occurs if the calibration process has failed, or the current silo weight is below 200 kilograms.

Solution 1: Try recalibrating the silo.

Solution 2: Check that the load cell wiring is not damaged.

Solution 3: Check that the load cells are not damaged.

Solution 4: Check that the Silo A/D card is not damaged; replace if necessary.

Note: This error stops feeding only in Restrictive Feeding mode if both silos have calibration errors.

Err 3: Preset Data Error

This error occurs if the previously entered data has been corrupted.

Solution: Check and, if needed, reenter all data; recalibrate the silos.

Note: This error stops feeding in Restrictive Feeding mode only.

Err 4: Silo Data Error

This error occurs when no data is received from the Silo A/D card.

Solution 1: Replace the opto-coupler Q5 found on the main power card. This is a 4N25 opto-coupler.

Solution 2: Check the connection between the Silo A/D card and the main control unit.

Solution 3: Check that the load cell wiring is not damaged and is connected properly to the Silo A/D card.

Solution 4: Check that the Silo A/D card is not damaged; replace if necessary.

Solution 5: Check that the load cells are not damaged.

Note: This error stops feeding in Restrictive Feeding mode only.

Err 5: RAM Memory Error

This error occurs if the RAM memory has a hardware error.

Solution: The Feedtronic 4004-A needs to be repaired by a qualified technician.

Note: This error stops feeding in Restrictive Feeding mode only.

Err 6: EEPROM Memory Error

This error occurs if the EEPROM memory has a hardware error.

Solution: The Feedtronic 4004-A needs to be repaired by a qualified technician.

Note: This error does not stop feeding.

Err 7: Real Time Clock Error

This error occurs if the component that saves the Real Time Clock fails when there is a power outage.

Solution: The Feedtronic 4004-A needs to be repaired by a qualified technician.

Note: This error stops feeding in Restrictive Feeding mode only.

Err 8: Preset Non-Critical Error

This error occurs when non-critical data is corrupted. Examples of non-critical data: Net Name, Minimum Silo Weight Set Point.

Solution: Reenter the data as needed.

Note: This error does not stop feeding.

Err 9: Minimum Silo Weight Alarm

This error occurs when the weight in one of the silos is under the Minimum Silo Weight Set Point.

Solution: Cancel the error by pressing any key (except ENTER). The alarm will be disabled until the silo is filled again.

Note: This error does not stop feeding.

⚠ Important: The error number is displayed with the letter representing the silo number, for example, A Err1 or b Err3. All the errors except for Err 2 and Err 9 will be displayed for both silos. Err 2 and Err 9 will be displayed only for the silo that is in error.

Solving Calibration Problems

The Feedtronic 4004-A calculates the silo weight by converting the data it receives from the Silo A/D box. For each silo, a number between 0 and 65535 is received. This number is proportional to the weight: a higher weight gives a higher number. The weight is then calculated using this formula:

$$\text{Silo Weight} = (\text{Current Value of the Number} - \text{Zero Data}) \times \text{Load Cell Constant}$$

Zero Data is the number received when the silo is empty (tare value) and is registered in the Feedtronic 4004-A by doing the Zero Calibration. The Load Cell Constant is calculated by doing the Full Weight Calibration. After the calibration process is completed, it is advisable to record these two values from the Feedtronic 4004-A. These values can be used in the future if the silo is not empty and there is a need for a re-calibration.

Recall Zero Data

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 9991 and press ENTER. ZERO will appear on the display, then A X.XXX or b X.XXX (X.XXX represents a weight). Write down and save this number for future use.
3. Press PROG to exit.

Recall Load Cell Constant

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking. Enter the code 9992 and press ENTER. Ld.CELL will appear on the display, then A X.XXX or b X.XXX (X.XXX represents a weight). Write down and save this number for future use.
3. Press PROG to exit.

If the error message Err 2 is displayed, then the current value of the number received from the silo is smaller than the Zero Data. In this case, the Feedtronic 4004-A needs to be re-calibrated.

Re-Calibration When the Silo Is Not Empty

To re-calibrate the silo when the silo is not empty, you can use the values of Zero Data and the Load Cell Constant that were saved after the last calibration.

Zero Calibration

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking.
3. Enter the code 9991 and press ENTER. ZERO will appear on the display, then A X.XXX or b X.XXX (X.XXX represents a weight).
4. Enter the previous Zero Data value and press ENTER.

The calibration process starts. During calibration, the display will show _CAL_A or _CAL_b with blinking underscores. The calibration takes approximately 10 seconds; once completed, the silo weight will once again be shown on the display.

Full Calibration

1. Press the DATA key until the Weight light is on, or alternately press shortcut keys 1 or 2.
2. Press the PROG key. The Weight light and the silo letter A or b start blinking.
3. Enter the code 9992 and press ENTER. Ld.CELL will appear on the display, then A X.XXX or b X.XXX (X.XXX represents a weight).
4. Enter the previous Load Cell Constant value and press ENTER.

The calibration process starts. During calibration, the display will show _CAL_A or _CAL_b with blinking underscores. The calibration takes approximately 10 seconds; once completed, the silo weight will once again be shown on the display.

Solving Installation Problems

Checking the Feedtronic 4004-A

You can verify that the wiring between the Feedtronic 4004-A and the Silo A/D box has been done correctly and that the data received from the Silo box is without errors.

1. On the Silo A/D box card, remove the jumpers SILO1 (JP1) and SILO2 (JP2). See Photo 2 below.
2. In the Feedtronic 4004-A, choose a silo by pressing shortcut keys 1 or 2.
3. Press PROG. The Weight light and the silo letter (A or b) start blinking.
4. Enter the code 8881 and press ENTER. AD.Data will appear on the display, then AXXXXX or bXXXXX, where XXXXX is the data received from the Silo A/D card. The letters A or b blink whenever new data is received. While entering the code, the letters Cd blink.
5. If the data for silo A is 1234 and for silo b is 5678, the connection with the Silo A/D box is correct and the data received is without errors.
6. Press the PROG key to exit.
7. Replace jumpers SILO1 and SILO2.

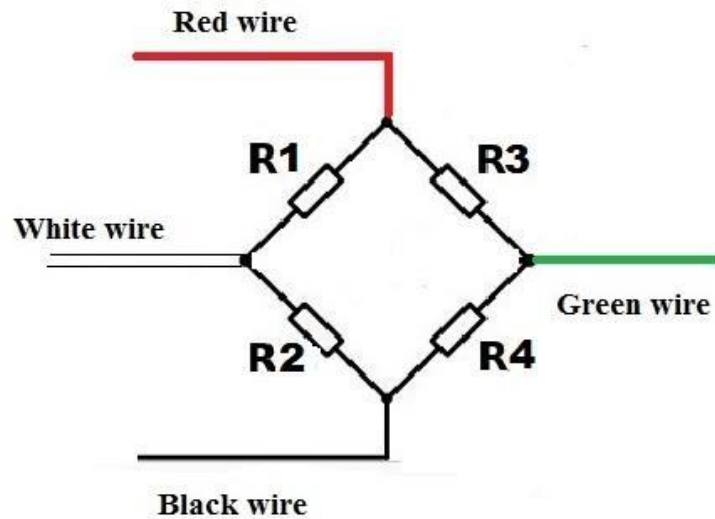


Photo 2: Jumpers in the Silo A/D card

Checking Load Cells

The load cell is based electronically on 4 resistors connected as shown in Drawing 1 below. When the load cell is OK, the value of resistor R1 is equal to the value of resistor R3, and the value of resistor R2 is equal to the value of resistor R4. If the load cell is damaged, the resistance of these resistors is changed too.

To check whether a load cell is damaged, disconnect all 4 wires from the connector and measure the resistance between pairs of wires as described below. There are two types of load cells, each with slightly different wire colours. Both have green, red, and black wires. The fourth wire may be either white or yellow, depending on the load cell type.

*Drawing 1 – Load cell electrical diagram*

Use a volt meter on the lowest range to measure the resistance between the red and white wires (Resistor R1) and compare it to the resistance between the red and green wires (Resistor R3). They should be equal, or differ by no more than 1 ohm. If the difference is more than 1 ohm, the load cell is faulty.

Then measure the resistance between the black and white wires (Resistor R2) and compare it to the resistance between the black and green wires (Resistor R4). They should be equal, or differ by no more than 1 ohm. If the difference is more than 1 ohm, the load cell is faulty.

The measurements are summarized in the table below:

Resistance Between These Wire Colors (Resistor)	Compare to the Resistance Between These Wire Colors (Resistor)
Red – White (R1)	Red – Green (R3)
Black – White (R2)	Black – Green (R4)

Code Summary

These codes can be seen on the front panel:

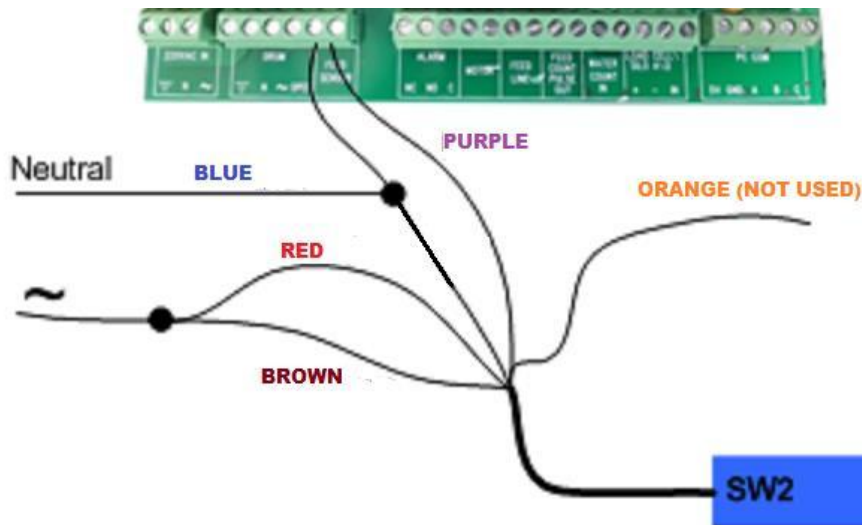
Code	Function	Range
7000	Clear History	Not Applicable
7777	View Feed Sensor Output	"FEEd" / "no.FEEd"
8880	View Software Version Number	1–9999
8881	View Silo Data	0–65535
8882	Set Quantity Error	0–10 kilograms
8883	Set Number Of Feed Times	1–8
8884	Set Alarm Time	00:30–99:59 mm:ss (99:99 disables alarm)
8885	Set Reset Time	00:00–23:59 hh:mm
8886	Set Skip Day / Manual Mode	0, 1, 2, 9
8887	Set Net Name	1–99
8888	Set Number Of Feeder Times	1–8
8889	Set Silo Minimum Weight	0–32.767 tons
9991	Set Zero Data	0–65535
9992	Set Load Cell Constant	0–65535
9998	Full Weight Calibration	0.050–65.535 tons
9999	Zero Weight Calibration	Not Applicable

Controller Installation

- Unscrew carefully the four large screws on the front panel of the controller. Disconnect the front panel by disconnecting the flat cable plug connecting the front panel to the mother board. Note: the plug must be released by pulling out the 2 locking wings sideways.
- Connect the box to the wall in a dry place.
- Hang the Silo A/D box on the silo structure with the wire conduits facing down, in order to prevent moisture from entering the Silo A/D box.
- Connect the auger motor relay to the MOTOR connector.
- Connect the feed line motor to the FEED LINE connector.
- Connect the water meter to the WATER COUNT IN connector.
- Connect the feed sensor (from the bottom hopper) to the FEED SENSOR connector. This connection must give an output of 220 V when the bottom hopper is empty (see below).
- Connect the Silo A/D card to the LOAD CELL SILO A/D connector.
- Connect the alarm output to an external alarm unit.

Connecting Agro Logic's SW2 Feed Sensor to the Controller

Connect the sensor as shown in Drawing 2 below. The purple wire carries the phase of the AC power when feed is NOT detected.



Drawing 2 – Feed sensor connection

Connecting Silo A/D Box to the Controller

Connect a 3-wire cable between the control unit and the Silo A/D box according to Table 1 and Photos 3 and 4 below.

Wire Color	Controller Contact Names (LOAD CELL SILO A/D)	A/D SILO Contact Names
Blue	—	—
Yellow	IN	OUT
Brown	+	+

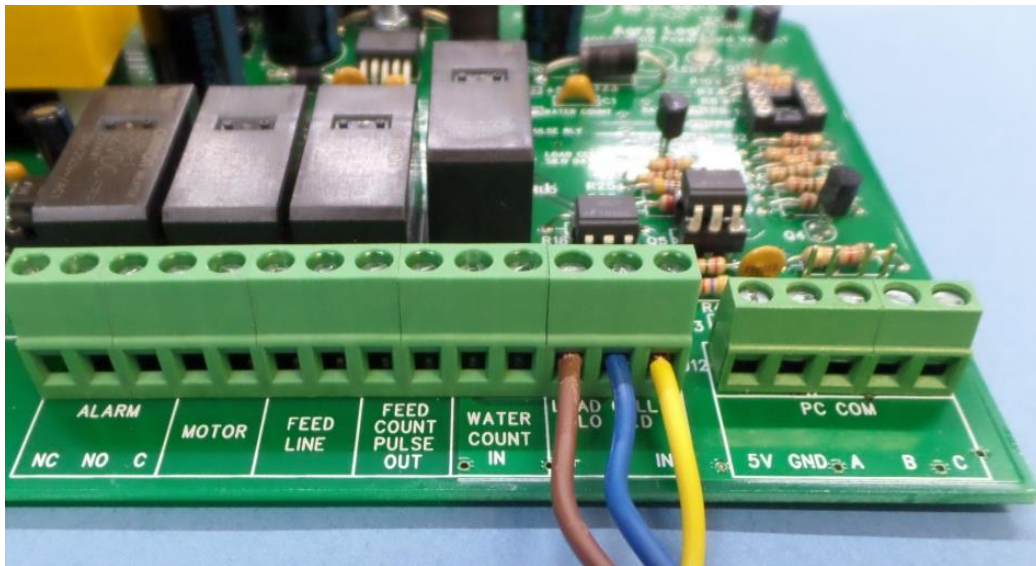


Photo 3: Wiring the controller to the Silo A/D box – Controller side

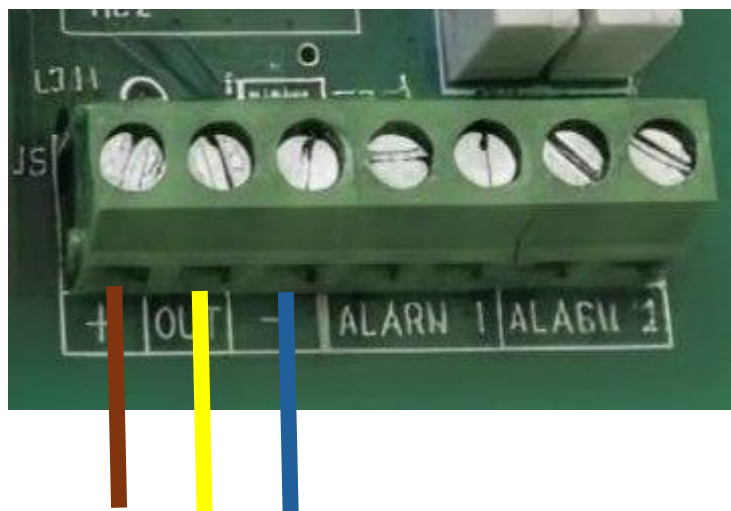


Photo 4: Wiring the controller to the Silo A/D box – Silo A/D box side

Size and Length of Cable Connecting the Silo A/D Box to the Controller

The 3-wire cable connecting the controller to the Silo A/D box must maintain these wire sizes and maximum lengths, as shown in Table 3 below:

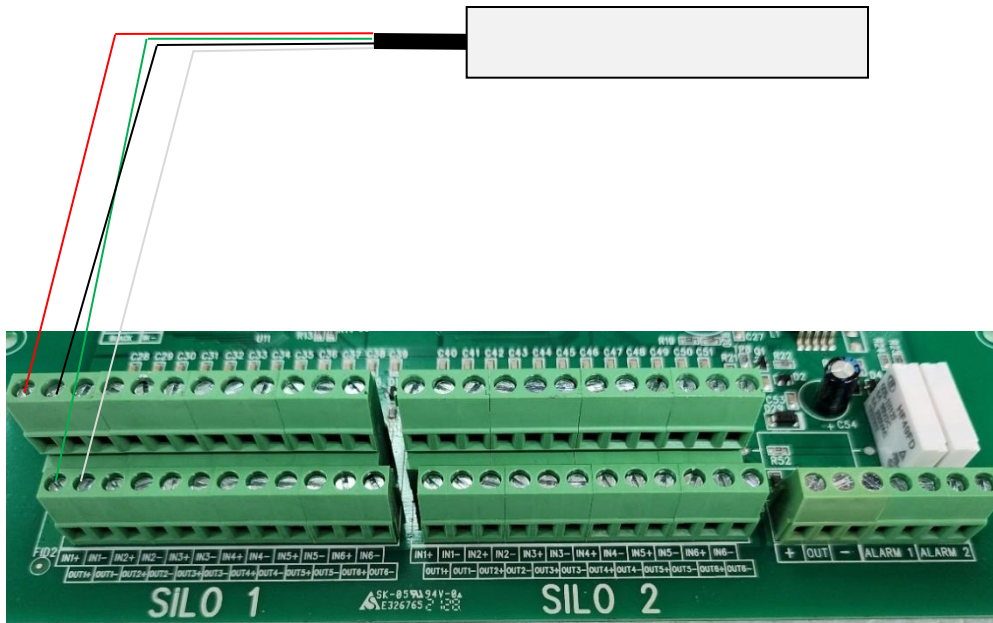
Wire AWG	Wire Cross Section (mm ²)	Maximum Cable Length (Meters)
20	0.518	50
17	1.04	100
15	1.65	170

Load cell connection

Connect the load cell wires as shown below.

A maximum of 16 load cells can be connected.

Load cell wire color	Connector
+EXC = Red	Top row, IN+
+SIG = Green	Bottom row, OUT+
-EXC = Black	Top row, IN-
-SIG = White	Bottom row, OUT-



Silo Hardware Installation Guide

Main Parts



Upper channel



Base



Load cell

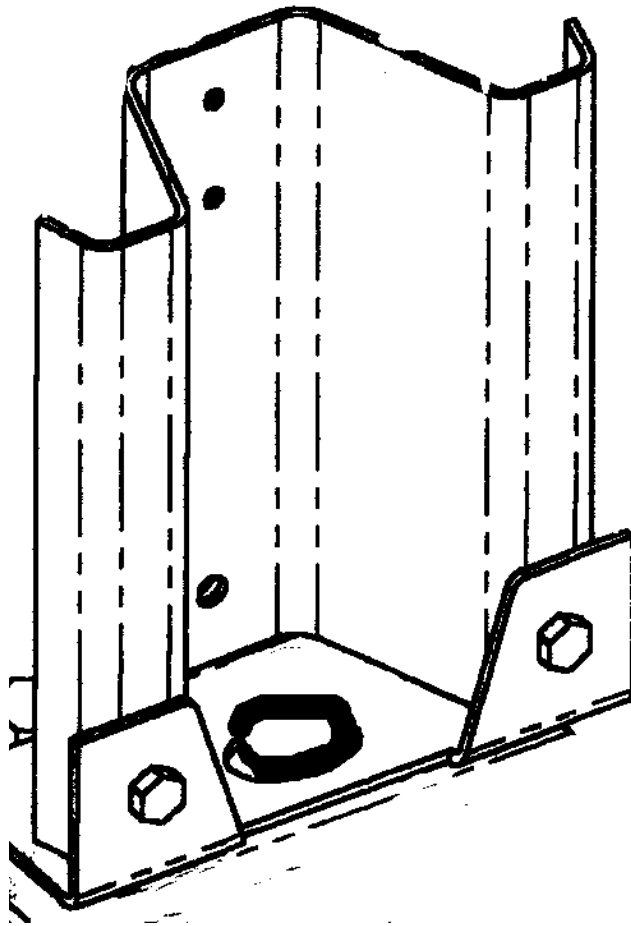


Joint unit

Procedure

- Check that the concrete floor is levelled and has been built using high-grade reinforced concrete.
- Stand the silo on the concrete. Be sure to take into account the angle and distance the feed auger will be from the house.

Using the holes in the silo leg plate, mark its location on the concrete floor.



Drawing 5 – Silo leg plate

Remove the silo and place the supplied Base on the concrete floor. Align the second hole with the marking on the concrete. The base will be connected to the concrete floor using two 3/4-inch bolts.

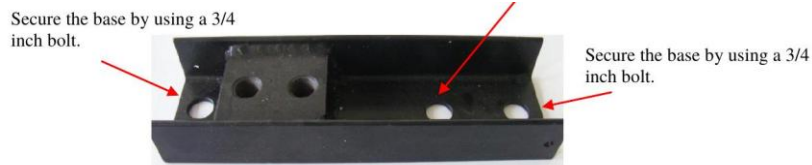


Photo 11 – Base unit installation

Connect the load cell to the base as shown below. Tighten down the bolts.

⚠ Important: Be sure the arrow on the side or front of the load cell is pointing downwards, as shown in Photo 12 below.



Photo 12 – Load cell connected to base unit

Connect the Joint unit to the load cell. Use a wrench to tighten the two halves of the Joint unit together. Screw the Joint unit down until it is flush with the bottom side of the load cell. Once you place the silo leg on the Joint unit, you can adjust its height to help level the silo leg. Tighten the Lower Joint nut to secure the Joint unit to the load cell. Tighten the Joint unit Allen lock screw to lock the Joint unit's two halves.

⚠ Important: If your Joint unit does not have an Allen lock screw, please use Loctite or a similar thread locker to secure the two halves together.

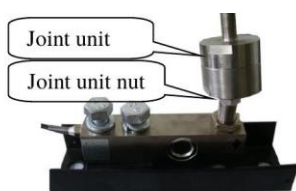
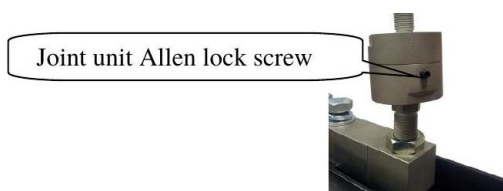


Photo 13 – Load cell, joint unit, and base



Joint unit Allen lock screw (detail)

Next, place the Upper Channel plate on the Joint unit, as shown in Photo 14 below.

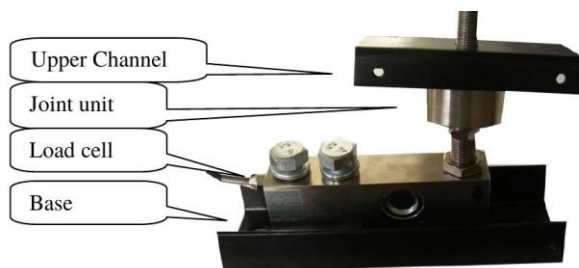


Photo 14 – Placing the upper channel

After all silo mount leg hardware has been assembled and fastened to the concrete floor, slowly lower the silo onto the silo mount.

Once the silo has been lowered, tighten down the upper joint nut that connects the silo to the silo mount. Make sure the silo is sitting on the Upper Channel plate. Adjust the Joint unit height if needed.

⚠ Important: When tightening down the upper joint nuts, the nuts of every second leg have to be tightened first, and after that, the nuts of all other legs have to be tightened. This procedure ensures that all legs of the silo are pressing down rather than pulling up on the load cells.

Checking That the Silo Is Vertically Levelled

The silo has to be vertically levelled so that all load cells experience about the same weight. To check that the silo is vertically levelled, it is recommended to use a laser leveller such as the one shown in Photo 15 below. Position the laser leveller below the silo; operate it to project the laser beam onto the legs just above the upper channel and check that the beam appears at the same height on all legs. Adjust the joint unit nut (see Photo 16 below) to raise or lower the legs as needed.



Photo 15 – Laser leveller

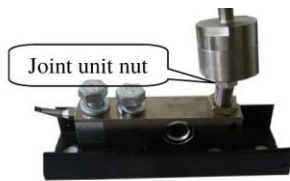


Photo 16 – Joint unit nut

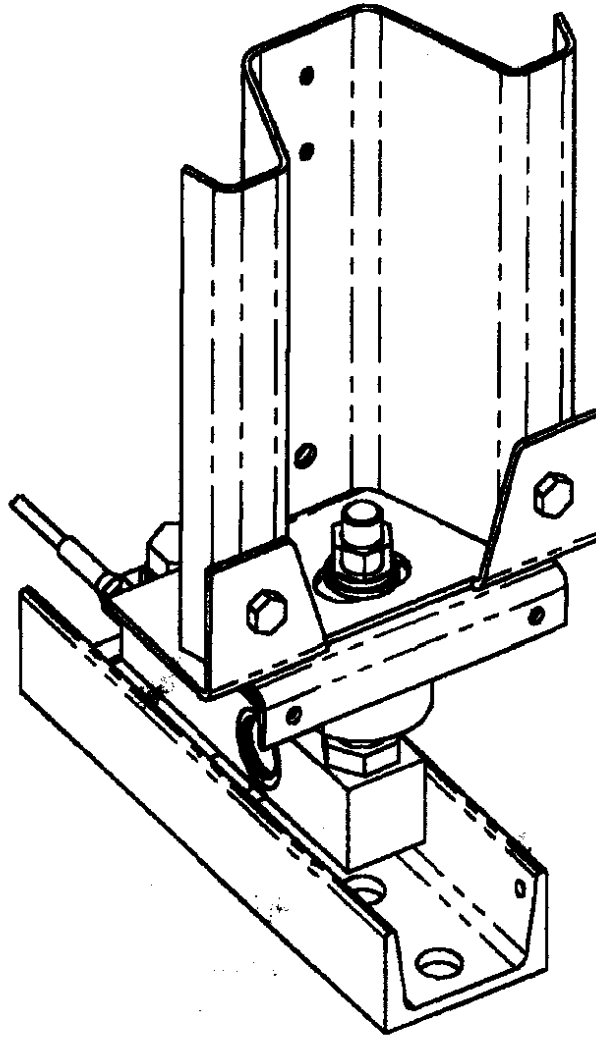
Connecting Grounding Wire

⚠ Important: Please connect the base to a ground connection for protection against lightning, as shown in Drawing 6 below.

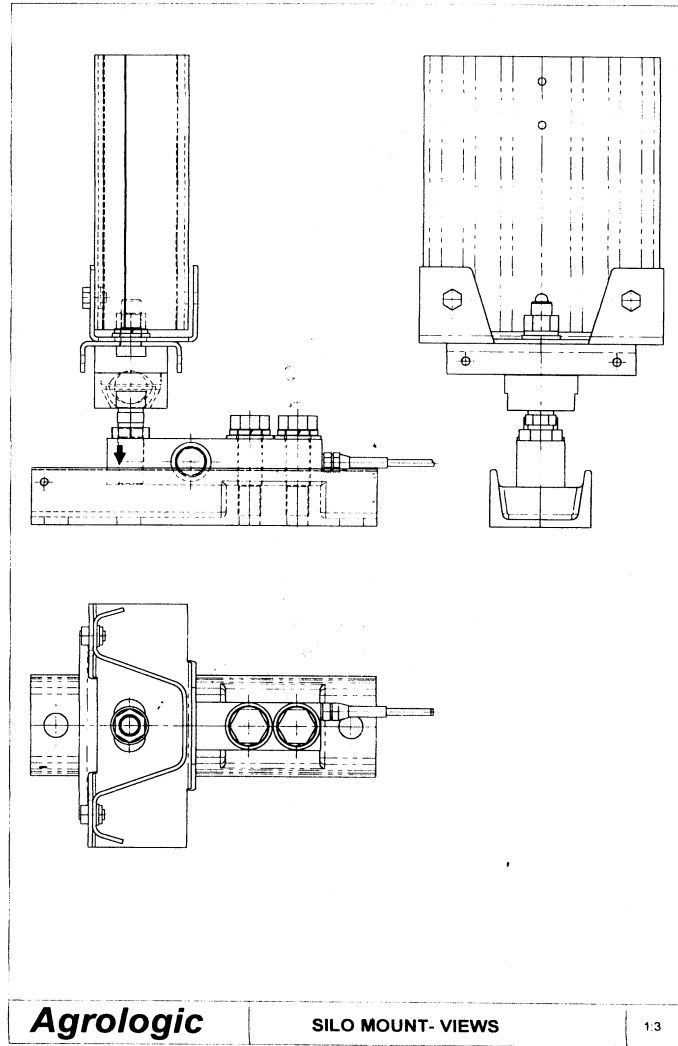


Drawing 6 – Joint unit nut with grounding-wire connection

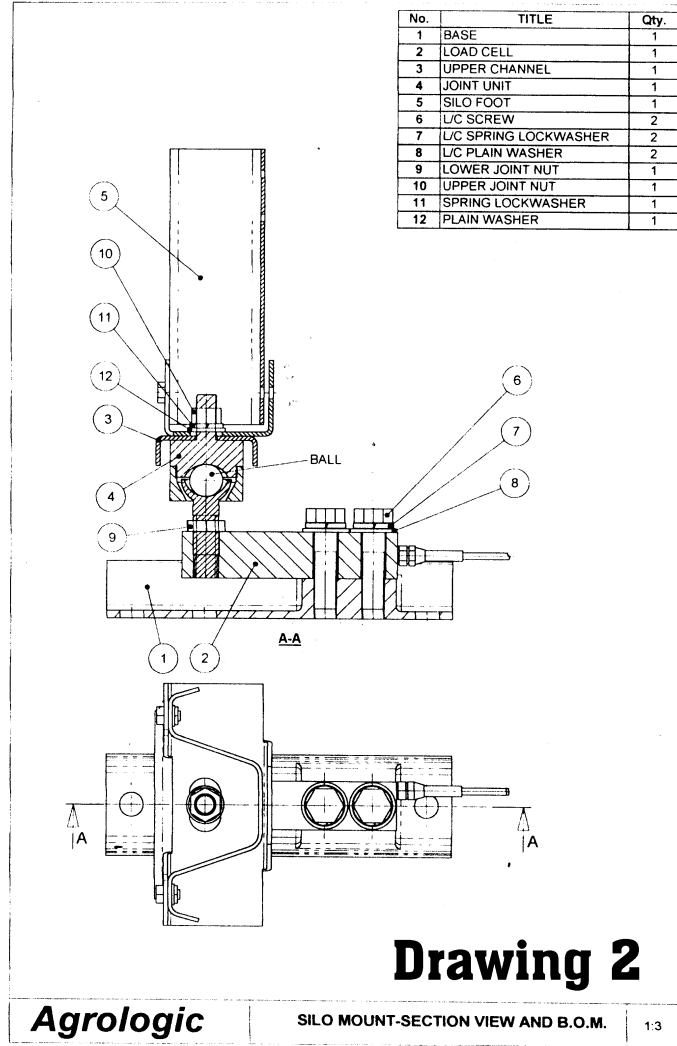
⚠ Important: Please check, and if necessary, tighten the joint units, bolts, and nuts periodically.



Drawing 7 – Complete leg installation (isometric view)



Drawing 8 — Complete leg installation (orthographic views)



Drawing 9 — Complete leg installation (assembly / bill of materials)