



Instruction manual

Alfa Laval ANALOG weighing module



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2) Safety

*Unsafe practices and other important information are emphasized in this manual.
Warnings are emphasized by means of special signs. All warnings in the manual are summarized on this page.
Pay special attention to the instructions below so that severe personal injury or damage to the transmitter are avoided.*

2.1 Important information

Always read the manual before using the ANALOG weighing module.

WARNING

Indicates that special procedures must be followed to avoid severe personal injury.

CAUTION

Indicates that special procedures must be followed to avoid damage to the ANALOG weighing module.

NOTE

Indicates important information to simplify or clarify procedures.

2.2 Warning signs

General warning:



2.3 Safety instructions

This instrument is built and tested according to the current EU-directives and packed in technically safe condition. In order to maintain this condition and to ensure safe operation, the user must follow the hints and warnings given in this instruction.

During the installation the valid national rules must be observed. Ignoring the warnings may lead to severe personal injury or substantial damage to property.

The product must be operated by trained staff. Correct and safe operation of this equipment is dependent on proper transport, storage, installation and operation.

All electrical wiring must conform to local standards. In order to prevent stray electrical radiation, we recommend twisted and shielded input cables, as also to keep power supply cables separated from the input cables. The connection must be made according to the connecting diagrams.

Before switching off the supply voltage check the possible effects on other equipment and the processing system. Ensure that the supply voltage and the conditions in the environment comply with the specification of the device.

This instruction manual is part of the device, must be kept nearest its location, always accessible to all employees. This instruction manual is copyrighted. The contents of this instruction manual reflect the version available at the time of printing. It has been issued to our best knowledge. However, errors may have occurred. Alfa Laval Kolding A/S is not liable for any incorrect statements and their effects.

– Technical modifications reserved – Limitation of liability

By non-observance of the instruction manual, inappropriate use, modification or damage, no liability is assumed and warranty claims will be excluded.



WARNING

Stop-stray welding currents can damage electronics. Please ensure that control panel(s) are electrically-isolated prior to any welding. Load cells can remain mounted to system, but BNC connectors must be disconnected from weighing terminal or weighing module.

3) Users guide

3.1 Introduction

This document describes the 4x79 analog module from Alfa Laval Kolding A/S, when equipped with the software version stated on the front page. The 4x79 system unit consists internally of a 4079 analog module (with the software listed on the front page) and a 4040 communication module.

The 4x79 system unit is connected to X loadcells (1-4).

With the software version specified on the front page, the 4x79 analog module is capable of transmitting the weight for a system with up to 4 loadcells as an analog 4-20 mA signal (or 0-10V depending on factory settings) as well as on the Ethernet connection.

The 4x79 analog module is operated using a 6 digit display and 5 keys for viewing/configuring a series of system parameters.

By use of DIP switches it is possible to include one of 15 different FIR filters, that will be used to filter the weight signal.

3.2 ATEX (Ex) specification

IMPORTANT: Instrumentation (the 4x79A) must be placed outside the hazardous zone if the load cells are used in hazardous ATEX (Ex) area. Furthermore, only ATEX certified load cells and instrumentation can be used in ATEX applications.

Note: The illustrations and specifications contained in this manual were effective at the date of printing. However, as continuous improvements are our policy, we reserve the right to alter or modify any unit specification on any product without prior notice or any obligation.

3.3 Power-up sequence

When power is applied to the 4x79 system, the following steps will be performed:

- The **D1** lamp (LED) will turn ON and back OFF shortly after.
- For 2 seconds all segments in the display will be lit like this:



This allows for inspection that display and all lamps are working.

- For 2 seconds the display will then show:



- For 3 seconds the display will show its program date like this:



- For 3 seconds the display will show its program revision like this:



During this period the 4x79 system will start communicating with the loadcells and the **TXBB** lamp will turn ON.

- The 4x79 system is ready and enters the normal operation mode showing the **LoAd** parameter.

3.4 Operator panel

The operator panel holds a 6 character LED display, a number of lamps, keys and DIP switches. The display will normally show the actual load indication or other parameters used to operate/configure the 4x79 system. Below the display the five keys are located.

3.4.1 Lamp functionality

The different lamps located in the front of the 4x79 system work as follows:

TXBB (left) Turns ON (green) when 4079 is communicating with 4040 (internally).

D1 Turns ON (yellow) when a key is activated or entry is in progress.

AE Turns ON (red) if an error is detected on the analog output.

TXLC Turns ON (yellow) when 4040 is communicating with loadcells.

TXBB (right) Turns ON (green) when 4040 is communicating with 4079 (internally).

1 - 4 Turns ON (red) when an error is detected on loadcell X (1 - 4).

3.4.2 Key functionality

The general function of the keys in the front panel is as follows:

- F Step to next parameter in parameter list.
- ↑ Starts data entry of the selected parameter and increments value.
- ↓ Starts data entry of the selected parameter and decrements value.
- Esc Aborts data entry without change, or steps to previous parameter.
- ↵ Accepts adjusted value and terminates data entry. This key must be pressed in order to accept any change of a parameter.

Further description of the keys is made below in the chapter "Data entry".

3.5 General display and keyboard behavior

When a parameter is shown the display will alternately show "**XXXXXX**" and "**YYYYYY**". Here "**XXXXXX**" will be a text indicating the actual parameter name, and "**YYYYYY**" will indicate the actual value or request belonging to this parameter.

The next parameter in the parameter list (see below) can be shown by pressing the F key, and the previous key can be shown by pressing the Esc key.

By continuous holding down a key, a keyboard repeat feature will be activated after a while, which gradually increases the speed by which the key is automatically considered reactivated.

By holding down the F key and then pressing the Esc key the **LoAd** parameter is selected.

3.6 Parameter list

The 4x79 system has the following parameters, which can be viewed and possibly changed using the user interface:

PARAMETER	DESCRIPTION
LoAd	Display current load on loadcells.
OutPut	Display current analog output signal (0.00-20.00mA).
PASS	Display/Change password for unlocking/locking data entry.
ZErO	Request zero of current load indication.
CAL.L.	Display/Change calibration load used.
CAL.	Perform system calibration.
CAL.F.	Display/Change system calibration factor (default is 524288).
n.Lc.	Display/Change number of loadcells connected.
n.Crn.	Display/Change number of supporting corners.
Int.PER.	Display/Change integration period (measurement time in ms).
Unit	Display/Change weighing range unit (Kg, Lb., Gram, Tons).
dPno	Display/Change weighing range dpno (digits after decimal point).
div	Display/Change weighing range division.
SP. 1	Display/Change setpoint for controlling digital output OUT1.
SP. 2	Display/Change setpoint for controlling digital output OUT2.
An.SP.	Display/Change load value for full analog output signal.
An.Err.	Display/Change analog output value used during error (0.00-20.00).
An.tEst	Enter analog test mode and output different test values (0.00-20.00).
An.tyPE	Display/Change signal type transferred on analog output.
Lc. 0 - Lc. 3	Display individual loadcell signals/status for connected loadcells.
nnAc 0 – nnAc 5	Display MAC address part for the module used during Ethernet communication.
IP 0 – IP 3	Display/Change IP address part for the module used during Ethernet communication.
Sub.n. 0 – Sub.n.3	Display/Change Subnet mask part for the module used during Ethernet communication.
Port.no.	Display/Change port number for the module used during Ethernet communication.
Eth.nEt.	Display/Change signal type transferred on Ethernet communication.

During normal operation the **LoAd** parameter should be selected for display of actual load on the loadcells. A complete description of the different parameters and their usage is given below.

3.7 Data entry and requests

In order to make changes to the different parameters or to perform requests from the keyboard (perform a zero etc.), the parameters have to be unlocked by setting the correct password as described later. Changing parameters (including the password) and performing requests from a parameter is done as follows.

3.7.1 Changing/adjusting parameters

Once a parameter is selected, then its value can be changed/adjusted by using the keys as follows:

- ↑ or ↓ Use the up and down keys until the desired value is reached.
- ↵ Once the desired value is reached, the ↵ key **MUST** be pressed in order to accept the new parameter value.
- Esc or F Aborts data entry without any changes to the parameter value.

Please note that some parameters can only be set to certain predetermined values. When parameter entry is in progress the yellow **D1** lamp will be ON to indicate this. The D1 lamp will turn OFF once the data entry is completed by pressing the ↵ key or aborted by pressing the Esc key or the F key.

Example - Changing calibration load from 0.000 to 1.250:

After having ensured the correct password is set use the F key (possibly the Esc key instead) to step forward (or backwards) to the **CAL.L.** parameter.

- Then use the ↑ key and the ↓ key until the display shows **1.250**.
- The yellow **D1** lamp will be ON during the above process.
- Press the ↵ key to accept the new value and complete the data entry.
- The yellow **D1** lamp will turn OFF once the data entry is completed.

3.7.2 Performing requests

Some parameters are used to perform requests (such as zeroing) instead of changing/adjusting a parameter. Once such a parameter is selected, then the corresponding request can be performed by using the keys as follows:

- ↵ Press the ↵ key to perform the selected request.

Example – Performing a zero when display shows 0.120:

After having ensured the correct password is set use the F key (possibly the Esc key instead) to step forward (or backwards) to the **ZERo** parameter where the load indication shows **0.120**.

- Then press the ↵ key to perform the zero.
- Inspect that the request has been performed and that the load indication shows **0.000**.

3.7.3 Data locking and unlocking

When the power is turned on all parameters are locked. The parameters can be unlocked by setting the correct password in the **PASS** parameter. As long as the password differs from the correct password, **ALL** parameter change and user requests from the keyboard are locked. The password for unlocking and allowing parameter change is:

1357

Note: If the display is left showing the **LoAd** parameter without any keyboard activity for 5 minutes or more, the password will automatically reset to 0.

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