

M4348.V01 8-channel data logger

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The data logger M4348.V01 replaces the predecessor type AYE 4348. It is used principally in mobile measuring systems in quality assurance. The data logger is able to store analogous voltages as digitized measuring values.

Since the memory stores the taken values, even if it is disconnected and transported, and the analysis of the stored measured values can be carried out in any data processing system with serial interface, it is a low-cost solution for automatizing quality control.

1. Display and control elements

Front view



- 1 - Display
- 2 - Lamp YELLOW serial data transfer is acting
- 3 - Lamp GREEN device is in automatic switching
- 4 - Lamp RED disturbance
- 5 - Key UP
- 6 - Key ENTER
- 7 - Key DOWN
- 8 - Keyswitch SETUP – Operating Mode (AUTO)
The key (AUTO) can only be removed if it is positioned on AUTO.
- 9 - Contrast adjustment display

Back view



- X312 - 4 Analog input for 8 channels (+/-5V or +/-10V)
- X312 - 5 Single start inputs
- X312 - 6 Common start input
- X312 - 9 Analog input channel 1
- X412 - Test jack
- X401 - power supply plug
- X402 - RS-232 interface, connection to the selection unit
- S1 - Mains switch
- F1 - Mains fuse
- 12V - Check lamp -12V supply
- +12V - Check lamp +12V supply
- + 5V - Check lamp +5V supply

2. Power supply

Connect plug X401 of A&V 4384 via the power cable (Euro norm) with 230V, 50/60 hertz and turn on the mains switch S1 on the back.

3. Setup: Key-operated switch at position SETUP

In the operating mode SETUP the output signal BUSY (see 4.4 measuring course) is set.

3.1 Reading

After the key-operated switch has been brought to the position **setup**, the operating mode **reading** appears on the display. The device is waiting for a command from the reading device. As soon as a connection exists, the yellow lamp lights up. In this operating mode, all stored measured values can be transmitted to the reading device.

Display: READ
 1234 1
 "1" = channel number, depending on the display channel
 chosen before
 number of measured values of the current channel

3.2 Deleting (all channels)

By pressing the pushbutton ENTER it is switched from READING to DELETING. The operating mode DELETE ALL is always possible if the previous value recording was made via the common start input. In this case, all programmed measuring channels were stored synchronously.

All stored measured values are deleted. The measured values of all channels are lost. After deleting, a change of the channel number is possible at the analog input by the corresponding reservation.

Display: DELETE ALL
 1234 1
 "1" = channel number, depending on display
 channel chosen before
 number of measured values of the current channel

The deleting process is started if both scrolling keys (UP(5),DOWN (7)) are pressed simultaneously.

The yellow lamp lights up briefly, the number of measured values is set to zero.

3.3 Deleting (individual channels)

The operating mode DELETE SINGLE is always possible, if the previous value recording was made via the single start inputs. In this case, every programmed measuring channel was stored only if its corresponding start input was active.

All stored measured values of the chosen channel are deleted.

After deletion, a change of the channel number is only possible at the analog input by the corresponding reservation if all channels were deleted separately.

The yellow lamp lights up briefly, the number of measured values is set to zero.

Display: DELETE SINGLE
 1234 1

"1" = channel number, depending on
display channel chosen before
number of measured values of the current channel

By activating the scrolling key UP (5) or DOWN (7) the desired channel can be chosen. The deleting process is started if both scrolling keys (UP(5),DOWN (7)) are pressed simultaneously. The yellow lamp lights up briefly, the number of measured values is set to zero.

At the time of the deleting process the channel number for the next measured value to be stored is not known, yet. Only during the storing of the first measured value the channel number is determined by chaotic measuring yes/no.

3.4 Diagnosis

By pressing the pushbutton ENTER it is switched from Deleting to Diagnosis.

In this operating mode, individual functions can be tested.

Display: Start S A Chan.
 00000000 3-4

"4" = currently programmed channel number

"3" = channel number of the connected analogous
recording cable

0 = common start input passive

1 = common start input active

87654321 order of the single start inputs of each channel

0 = start input passive

1 = start input active

3.4.1 Choice of language version

The display mode Diagnosis is chosen. Press the arrow keys UP and DOWN simultaneously. The programme version appears briefly. Then the dialed language appears: DEUTSCH, FRANCAIS, ESPANOL or ENGLISH. By pressing the arrow key UP or DOWN choose a language. Afterwards press arrow key RIGHT. Now the display mode Diagnosis appears again and the chosen language is stored permanently.

3.5 Delay time

By pressing the pushbutton ENTER it is switched from Diagnosis to Delay time.
The delay period which occurs before/after measuring can be programmed here.

Display: (msec) delay
+123 1

"1" = chosen channel number (of no significance here)
+123 = delay of 0,123 sec. BEFORE measured value adoption
-123 = delay of 0,123 sec. AFTER measured value adoption

The delay period can be changed by the scrolling keys UP (5) or DOWN (7) in the field +/- 999.

3.6 Displaying measured value

By pressing the pushbutton ENTER it is switched from Delay time to Display measured values. The actual measured value can be displayed of every channel in the field +/- 999.

Display: meas.val. chan.
+123 1

"1" = channel number, depending on the chosen display
channel
measured value of the current channel

With the scrolling keys UP (5) or DOWN (7) all 8 channels can be dialed. The measured value changes correspondingly.

By pressing the pushbutton ENTER the display Measured values is switched to READING.

4. Measuring operation

Key-operated switch to position AUTO. If the green lamp lights up, the device is ready. If the Start X312-6 or Start input X312-5 becomes active now, the corresponding measured value is stored.

Display: meas.val. chan.
1234 1

"1" = channel number, depending on the chosen display
channel
number of stored measured values of the current channel

With the scrolling keys UP (5) or DOWN (7) all channels can be dialed. With this the number of measured values of the corresponding channels is shown on the display.

4.1 Adoption of channel numbers and start mode

With the first measuring after the complete deletion of the memory the channel number is adopted from the coding of the analogous connection cable. At the same time the first measured value adoption determines, if all programmed channels are stored simultaneously via the common start input or if each programmed channel is stored separately via the individual start inputs (chaotic measuring).

CAUTION: The data logger may only be connected to a measuring unit, if the earlier stored measured values were deleted.

Exception: Reading and analyzing the values and go on working at the same measuring unit.

The recording mode can only change after deletion.

4.2 Measuring via the common start input X312-6

The analog signal connection is to be chosen via the entry socket reservation with +/-5V or +/-10V.

Store the value by pressing the pushbutton ENTER or through the common start input.

Before/after the storing of the values, the adjusted delay time passes. During the cycle time the green lamp is off and the output signal BUSY (see 4.4 measuring course) is set.

In every measuring cycle, the measured values for all programmed measuring channels are stored, i.e. the number of measured values is identical for all programmed measuring channels.

4.3 Measuring via the single start input X312-5

For every programmed measuring channel a start signal has to be given by an external switch. Before/after the storing of the values, the adjusted delay time passes. During the cycle time the green lamp turns off and the output signal BUSY (see 4.4 measuring course) is set.

In every measuring cycle, measured values are only stored from measuring channels whose input signals are active, i.e. the number of measured values per measuring channel can be different.

4.4 Measuring course

After the start signal is active (green lamp turns off) the initial signal BUSY is turned on for the programmed waiting time. BUSY can be used for a handshake with machines. When the measured value memory is full, BUSY is set permanently. Memory capacity is dependent on the number of channels as follows:

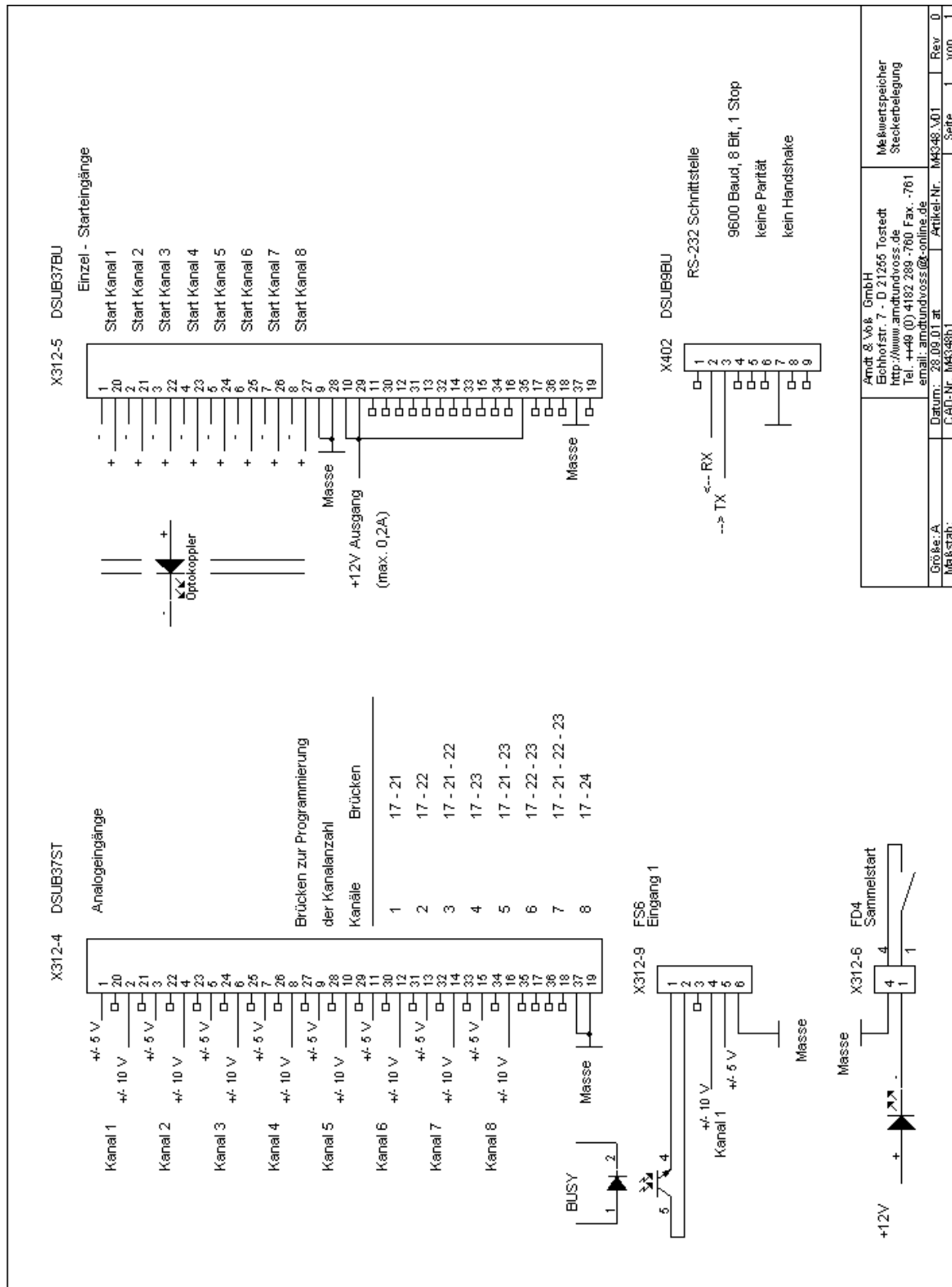
Number of channels	max. number of measured values per channel
1	9984
2	9984
3	6912
4	6656
5	3328
6	3328
7	3328
8	3072

4.5 Error reports

In automatic operation the following errors are displayed.

Display:	No. channel FAIL
Significance:	Programmed channel number does not match that of the analogous cable
Remedy:	Delete measured value memory
Display:	FULL MEMORY
Significance:	Capacity limit attained by one or several measuring channels.
Remedy:	Read measured values and then delete the measured value memory

5. Connection schematics



Security comments according to VDE 0411

General technical

time for warming up 20 minutes
temperature 0...+40 Grd C
atmospheric humidity on to 75% rel.
frequency 50/60 Hz
power supply voltage 230V +/-10%
security according to VDE 0411, protection class 1

This unit is built and checked under DIN 57411 part 1/VDE 0411 part 1 and left the factory in a safe and perfect condition. To preserve this condition and to guarantee a safe working the user has to follow the comments and warnings which are given in this instructions.

Before turning on the power you have to make sure, that the voltage of operation and the mains voltage correspond.

The mains plug may only be inserted into a socket with ground contact. The safety effect may not be abolished by an extension lead without ground connection.

The opening of covers or removing of components, except if it is possible to do by hand, might uncover parts or connections under dangerous voltage.

Racks may only be used inside a cover.

If an adjustment, a maintenance or a repair at the opened unit under voltage is unavoidable, it may be done only by a qualified employee, who is well acquainted with the dangers involved.

ATTENTION:

After the end of those works, the unit has to be checked according to VDE 0411, part 1.

You have to make sure, that only fuses of the given type and values are taken for replacement. The use of mended fuses or short-circuiting them is inadmissible.

If it is presumed, that a safe work is not possible, you have to take this unit out of work. A safe work may not be possible, if

- there are visible damages at the unit.
- the unit doesn't work.
- after longer storage under unfavourable circumstances.
- after heavy stress of transport.