

# Auxiliary Sensors Module

- BASM

Technical Manual

Version 001

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# Description

# 1

## Introduction

1.1

The BASM (Bruker Auxiliary Sensor Module) is an option module for a BVT3000 or BVT3300 temperature controller unit. The VTU's firmware must be version 2.1 or more recent.

It is designed for temperature monitoring only, not for sample temperature regulation. It has 4 inputs which can be for Pt100 or thermocouple. The module is mounted on the front panel of the temperature unit.

Three modules with different inputs exist :

- W1101182 auxiliary sensor module with 4 Pt100.
- W1101183 auxiliary sensor module with 4 K thermocouple inputs.
- W1101184 auxiliary sensor module with 2 T thermocouple inputs and 2 E thermocouple inputs.

## Description of the BASM

1.2

Figure 1.1. BASM overview

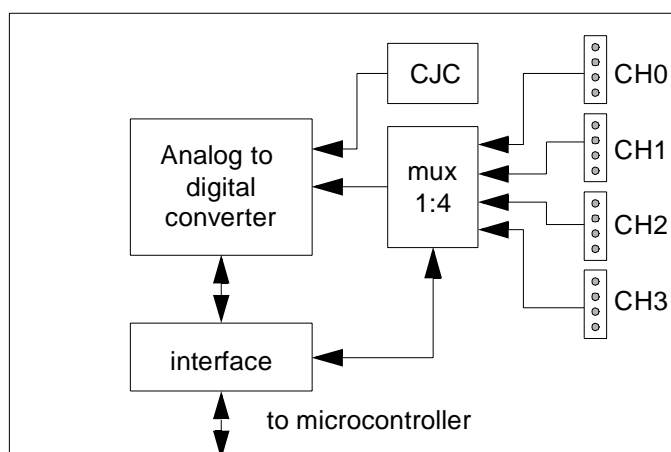
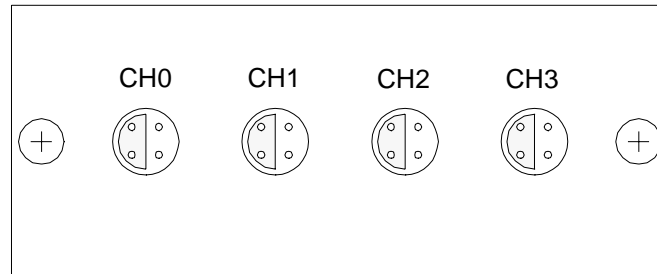
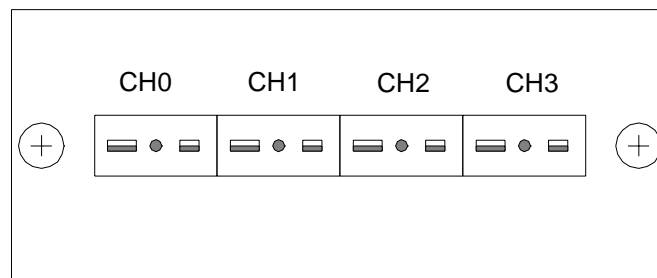


Figure 1.2. BASM front view



module with 4 Pt100 inputs



module with 4 thermocouple inputs

## Installation

1.4

Check that mains is removed from temperature unit.

Remove the cover of the temperature unit.

Unscrew the small rectangular plate on the front panel and remove also the cover of the module.

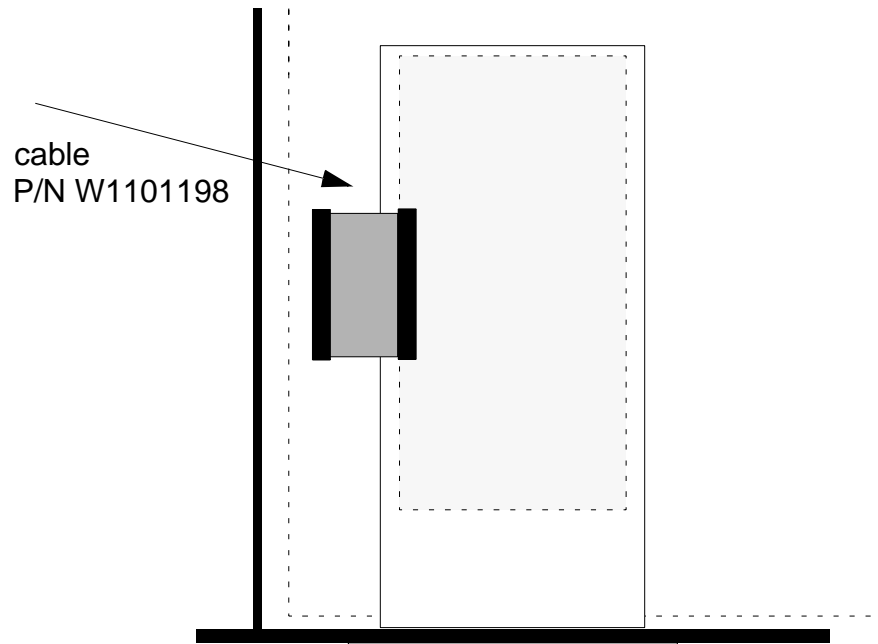
Insert the module and hold it with 2 screws.

Install the cable as shown in figure **"Flat cable installation" on page 7.**

Mount the cover of the module and close the temperature unit.

Power on the temperature unit.

Figure 1.3. Flat cable installation



For the Pt100 inputs small round LEMO connectors are used.

The thermocouple compensated connectors are miniature size and have a shield pin. An adapter cable must be used when connecting a thermocouple with a standard size connector.

Table 1.1. Adapter cable list

thermocouple type	adapter cable
T	W1101199
K	W1101200
E	W1101201

Figure 1.4. Adapter cable

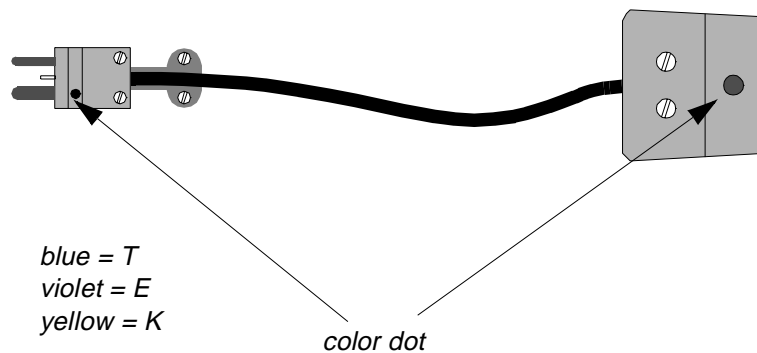


Figure 1.5. Pt100 connector (front view)

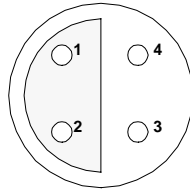


Table 1.2. Pt100 connector pin assignment

PIN	SIGNAL
1	current +
2	measure
3	measure
4	current -

Figure 1.6. *Thermocouple connector*

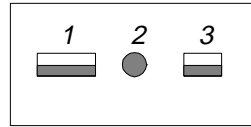


Table 1.3. *Thermocouple connector pin assignment*

PIN	SIGNAL
1	input -
2	frame ground
3	input +

# Technical specifications

# 2

## *W1101182 (4xPt100 inputs)*

## *2.1*

Auxiliary sensor module with 4 Pt100 inputs.

- Range: -200 °C to 800 °C.
- Precision:  $<\pm 0.15$  % of full scale with room temperature @23 °C  $\pm 2$  °C.
- sensor current: 1 mA.
- Application: AVANCE spectrometer.

Weight:

- 500 gr.

Dimensions:

- 87 mm (W) x 36 mm (H) x 155 mm (D) aluminium/steel case.

Operating temperature:

- 0 to 50 °C.

Auxiliary sensor module with 4 K(chromel-alumel) thermocouple inputs.

- Scale: -200 °C to 1370°C.
- Precision:  $<\pm 0.15$  % of full scale with room temperature @23 °C  $\pm 2$  °C.
- internal CJC (cold junction compensation).
- small size compensated thermocouple connector with shield pin.
- Application: EPR spectrometer.

Weight:

- 500 gr.

Dimensions:

- 87 mm (W) x 36 mm (H) x 155 mm (D) aluminium/steel case.

Operating temperature:

- 0 to 50 °C.

Auxiliary sensor module with 2 E (chromel-constantan) and 2 T(copper-constantan) thermocouple inputs.

- Scale T: -200 °C to 400 °C.
- Scale E: -200 °C to 1000 °C.
- Precision:  $<\pm 0.15$  % of full scale with room temperature @23 °C  $\pm 2$  °C.
- internal CJC(cold junction compensation).
- E inputs for CH0 and CH1.
- T inputs for CH2 and CH3.
- small size compensated thermocouple connector with shield pin.
- Application: AVANCE spectrometer with MAS probe.

Weight:

- 500 gr.

Dimensions:

- 87 mm (W) x 36 mm (H) x 155 mm (D) aluminium/steel case.

Operating temperature:

- 0 to 50 °C.



# ***Schematics***

# **3**

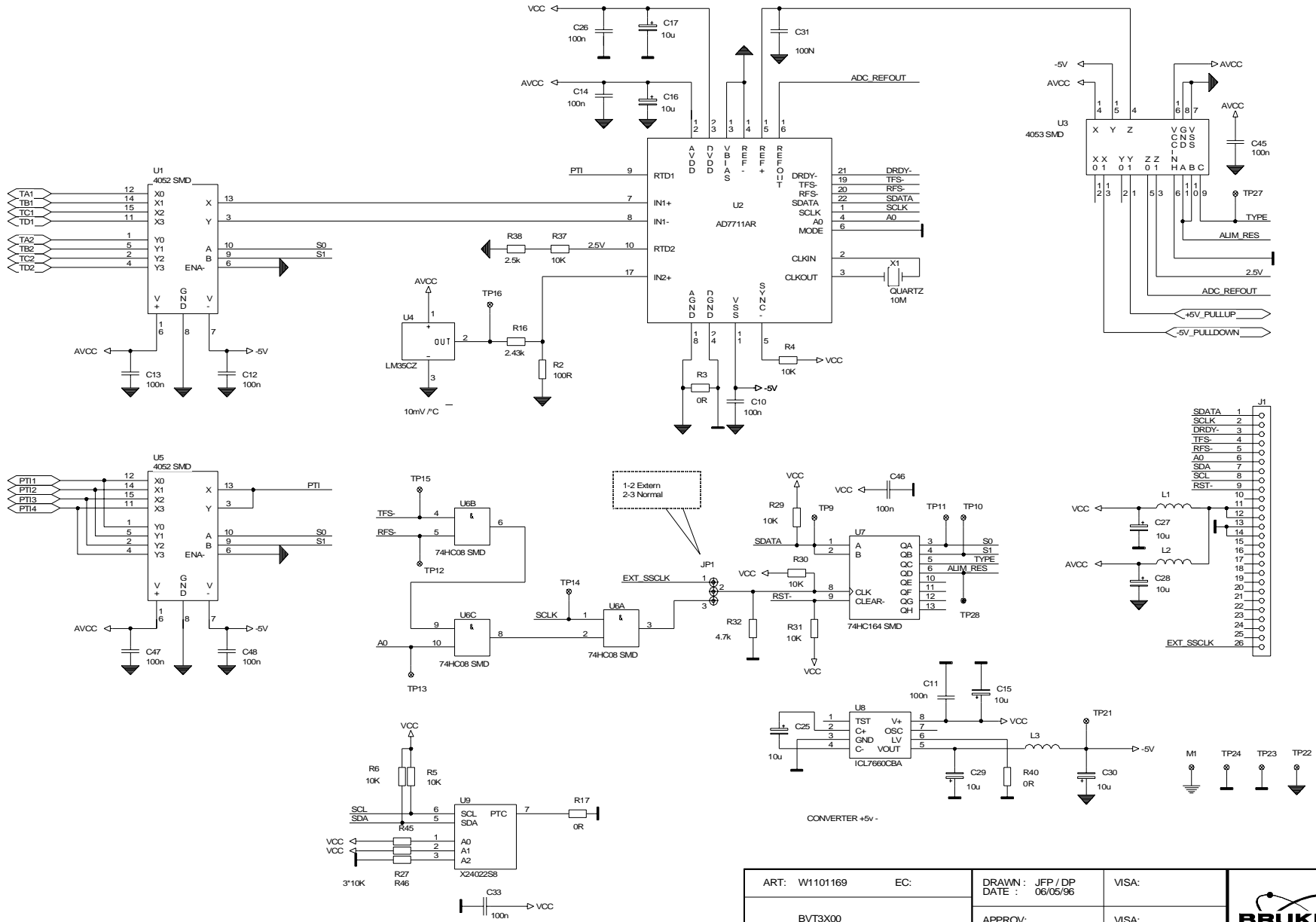
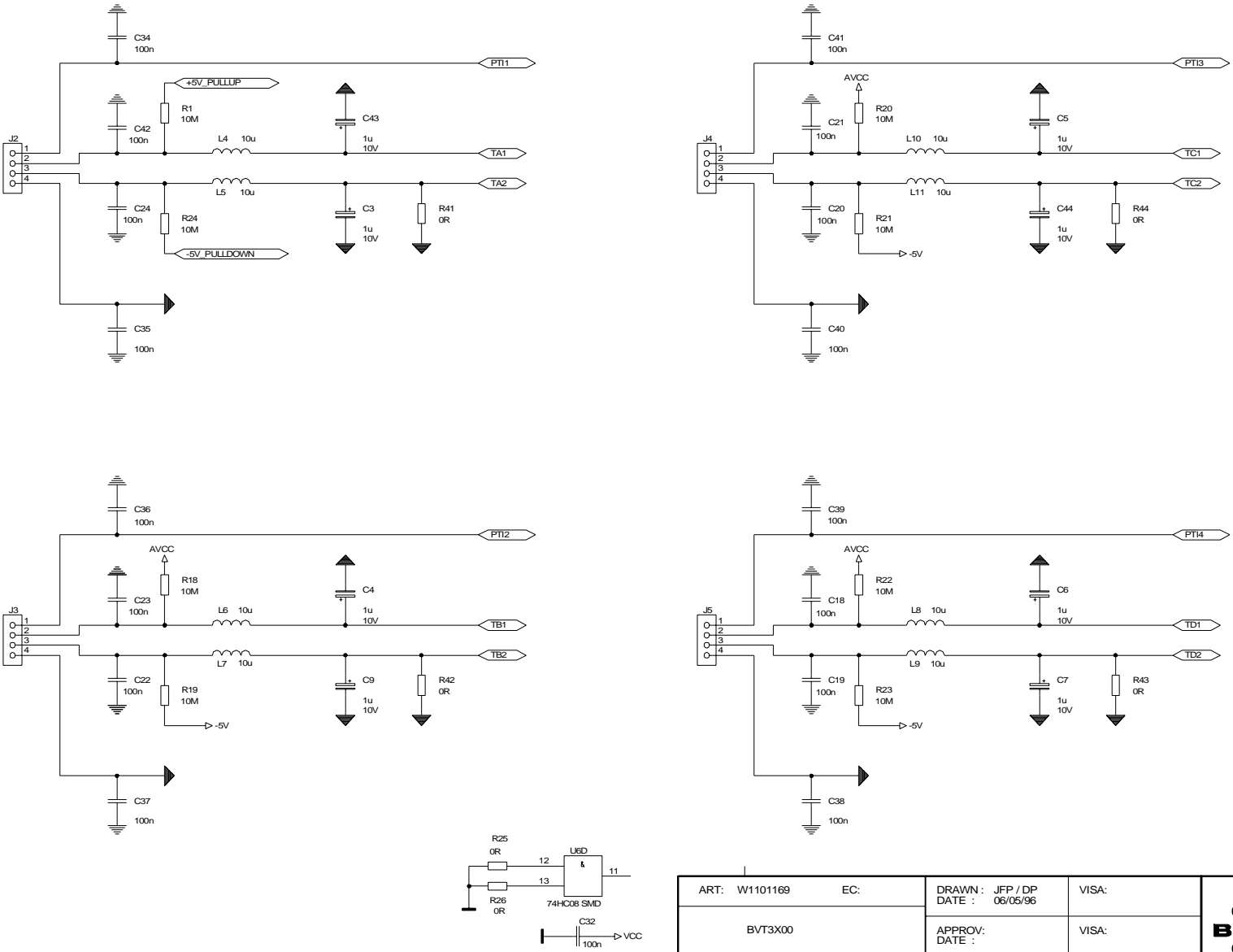


Figure 3.1. Auxiliary sensors board sheet1/2

ART: W1101169	EC:	DRAWN: JFP / DP DATE: 06/05/96	VISA:
BVT3X00		APPROV: DATE:	VISA:
AUXILIARY SENSORS BOARD		DWG: W4S110504	SHEET: 1/2



ILINK  
J\$110505.SCH



ART: W1101169	EC:	DRAWN: JFP / DP DATE : 06/05/96	VISA:
BVT3X00		APPROV: DATE :	VISA:
AUXILIARY SENSORS BOARD		DWG: W4S110505	SHEET: 2/2



Figure 3.1. Auxiliary sensors board sheet 2/2



# Figures

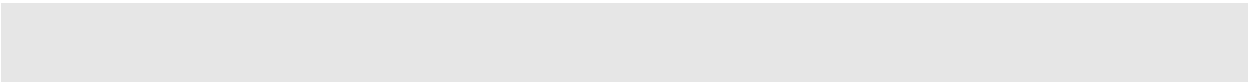
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