BSC4A Quickstart Guide

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Introduction

- The BSC4A Amplifier takes up to 4 Independent Inputs and turns those signals into an analog output.
- ±10V and 4-20mA
- 4 independent channels
- For use with model 3AXX series 3-axis load cells or multiple load cells
- Can be used with up to any 4 standard load cells (with mV/V output)
- Inputs for Strain gage / 0–10 V /PT1000
- Measurement ranges 2 mV/V / 10 mV/V
- 8 digital inputs / outputs
- Data rate 0 Hz–500Hz

Description

This 4-channel measuring amplifier for sensors with strain gauges is equipped with a USB interface. The voltage is supplied via the USB port at the back of the measuring amplifier. The measuring amplifier can be delivered with an SUB-D37 connection or with 4x M12 ports. The measuring amplifier has eight digital inputs and outputs.

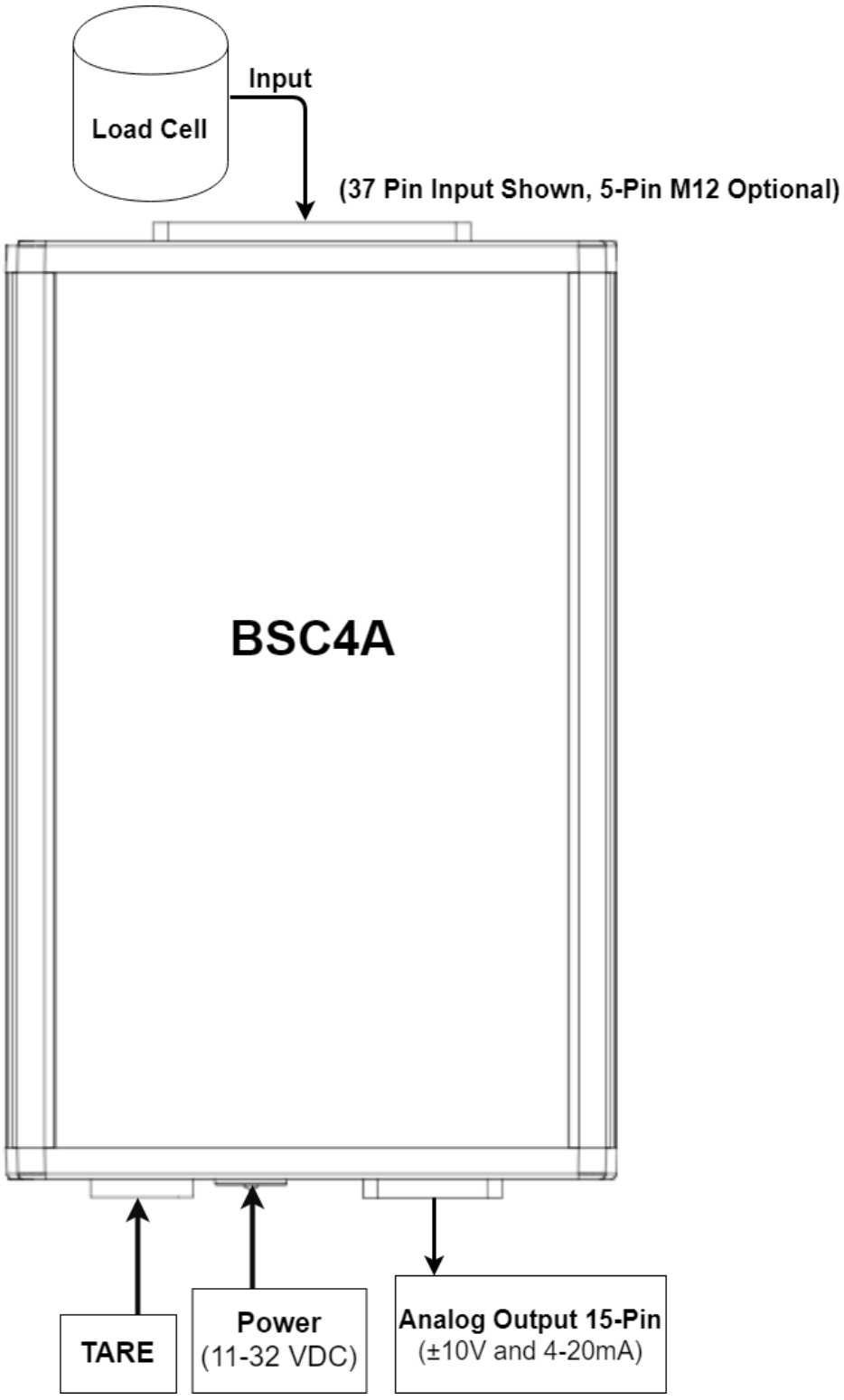
On the backside SubD25 socket, strain gauge full-bridges and half-bridges 120 Ohm up to 1 kOhm as well as PT1000 temperature sensors and 1000 Ohm single grid strain gages or voltages 0-5V can be connected.

Options

±10V and 4-20mA output, up to 10 mV/V input, 37-pin input connector or 4

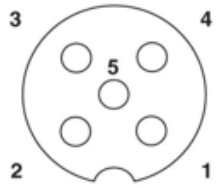
each M12 connectors and includes power supply.

Caution: Please read this entire guide before making any connections or powering the BSC4A.


Load Cell
Input
(37 Pin Input Shown, 5-Pin M12 Optional)
BSC4A
TARE
Power
(11-32 VDC)
Analog Output 15-Pin
(±10V and 4-20mA)

Connections:

Wiring diagram for 5-pin socket M12x1, type 763



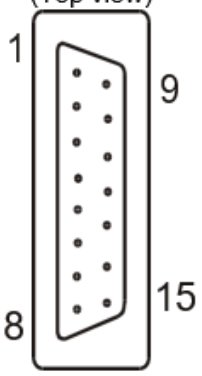
View of socket side

5-pin	Description	Color code for cable	
2	-U_S negative bridge power supply	white	white
1	+U_S positive bridge power supply	brown	brown
3	+U_D positive differential input	green	blue
4	-U_D negative differential input	yellow	black
5	AUX connected to quarter bridge 350 ohm (QB)	grey	grey

Six-wire technology is not possible for M12 socket variant.

In quarter bridge and half bridge mode, the internal half bridge completion must be activated via the solder bridge on the circuit board (also possible in the factory as a free order option).

Wiring diagram for output socket 15-pin Sub-D socket

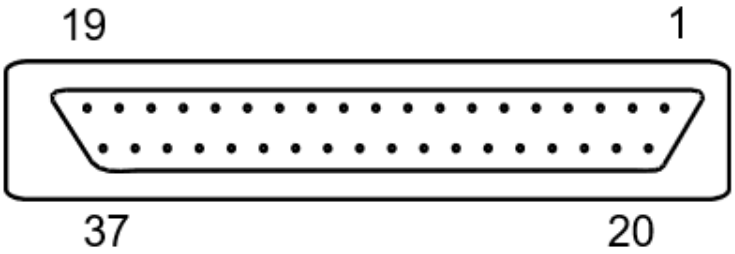


Socket **Spring contacts**	**BSC4A assignment**	**15-pin SUB-D (PIN No.)**			
	GNDio	1 black			
	Zero-point adjustment (joint)	8 purple			
	Supply voltage	9 gray			
		Channel 1	**Channel 2**	**Channel 3**	**Channel 4**
	Output voltage	2 brown	5 yellow	15 red-white	12 light green
	Output current	3 red	6 green	14 brown-white	11 pink
	Ground	4 orange	7 blue	13 black-white	10 white

The colors correspond to the core colors of the supplied 3-meter cable with 15-pin connector SubD15.

Wiring diagram for 37-pin Sub-D socket

37-pin Sub D, female



Terminal assignment 37 pin Sub D, female

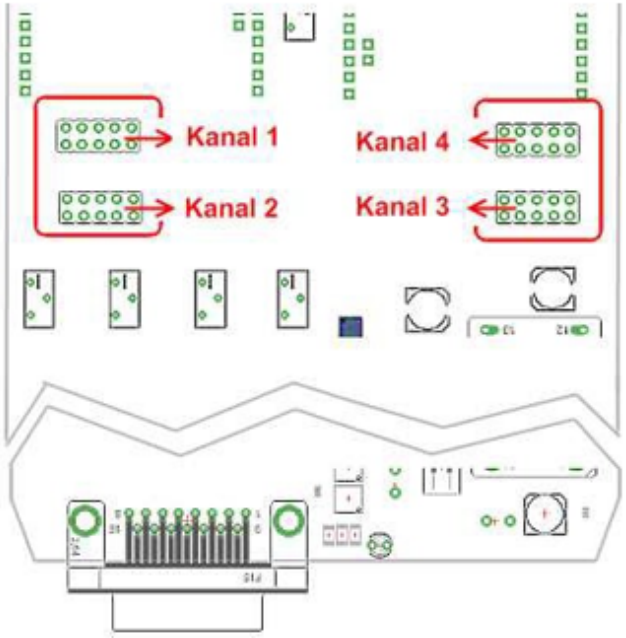
	BSC4A assignment	**37-pin SUB-D (PIN No.)**			
GND	Ground/shield	1			
		Channel 1	**Channel 2**	**Channel 3**	**Channel 4**
+Us	positive sensor power supply	20	2	11	29
+UF	positive sensor input	21	3	12	30
+UD	positive differential input	22	4	13	31
QB350	quarter bridge completion 350Ω 1)	23	5	14	32
HB	half bridge completion 2)	24	6	15	33
-UD	negative differential input 2)	25	7	16	34
-UF	negative sensor input	26	8	17	35
-Us	negative sensor power supply	27	9	18	36
Tare	automatic zero-point adjustment	28	10	19	37

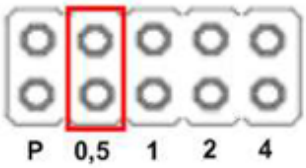
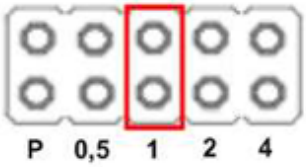
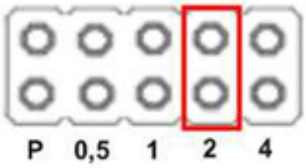
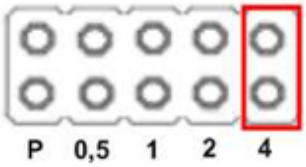
1) Half bridge completion must be activated at the same time.

2) The negative differential input (25, 7,16, 34) must be connected to the corresponding half bridge completion (24, 6,15, 33).

Adjusting the sensitivity

The sensitivity of channels 1 to 4 can be adjusted. On the circuit board of the BSC4A, each channel has a jumper post field with 4 plug options in total.



Sensitivity	Jumper position
0.5 mV/V	
1 mV/V	
2 mV/V	
4 mV/V	

Opening the device

1. All 4 screw covers and the fastening screws on each end cover should be removed.
2. The cover with the (37-pin Sub-D socket) must be loosened using the two hexagonal bolts.
3. The circuit board is unplugged from the side of the 15-pin Sub-D socket.
4. In the M12 socket version, the cover is pushed through the housing slightly slanted.

Note:

Amplifier channels have fixed gain settings and are not adjustable for specific load cell output signals. Because of this, the amplifier output will typically be less than the nominal 10V or 20mA at load cell full scale.

Warranty

All Telemetry products from Interface Inc., ('Interface') are warranted against defective material and workmanship for a period of (1) one year from the date of dispatch. If the 'Interface' product you purchase appears to have a defect in material or workmanship or fails during normal use within the period, please contact your Distributor, who will assist you in resolving the problem. If it is necessary to return the product to 'Interface' please include a note stating name, company, address, phone number and a detailed description of the problem. Also, please indicate if it is a warranty repair. The sender is responsible for shipping charges, freight insurance and proper packaging to prevent breakage in transit. 'Interface' warranty does not apply to defects resulting from action of the buyer such as mishandling, improper interfacing, operation outside of design limits, improper repair or unauthorized modification. No other warranties are expressed or implied. 'Interface' specifically disclaims any implied warranties of merchantability or fitness for a specific purpose. The remedies outlined above are the buyer's only remedies. 'Interface' will not be liable for direct, indirect, special, incidental or consequential damages whether based on the contract, tort or other legal theory. Any corrective maintenance required after the warranty period should be performed by 'Interface' approved personnel only.

Revision History		
Author	**Revision**	**Release Date**
KB	B	10/6/2023