



Technical description

TA-CBI is a computer programmed balancing instrument. It consists of an electronic differential pressure gauge and a micro computer which has been programmed with the TA valve characteristics which makes possible a direct reading of flow and differential pressures.

The TA-CBI has two main components:

- An instrument which contains a micro computer, input touch pad, LCD display and re-chargeable NiMh batteries.
- A sensor unit which contains a piezoresistive pressure sensor, one measurement valve and connections.

The measurement valve has a safety function which protects the sensor from too high differential pressures.

Measurement range:

Total pressure: max 2 500 kPa.

Differential pressure: -9 to 200 kPa.

Flow: During flow measurements the pressure range is 0.5 to 200 kPa.

Temperature: -20 to 120°C

Temperature liquid medium:

-20 to 120°C

Measurement deviation:

Differential pressure: The greater of $\pm 1\%$ of displayed value or ± 0.2 kPa

Flow: As for differential pressure + valve deviation.

Temperature: $< 0.2^\circ\text{C}$ + sensor deviation.

Effective operating time:

8 to 10 h between charges depending upon application.

Ambient temperature for the instrument:

0 to 40°C (during operation)

5 to 40°C (charging)

-20* to 60°C (storage)

*) Do not leave water in the sensor when there is a risk of freezing.

TA-CBI, complete



TA No	Language
52 197-001	SE
52 197-002	GB
52 197-003	DK
52 197-004	NO
52 197-005	FI
52 197-006	DE
52 197-007	FR
52 197-008	NL
52 197-009	ES
52 197-010	CZ
52 197-011	PL
52 197-012	RU
52 197-013	HU
52 197-014	US
52 197-015	UK

Case contents:

1. Instrument
2. Sensor unit
3. Temperature sensor Pt 1000
4. Charger
5. Hoses:
 - 400 mm blue
 - 400 mm red with shut-off valve
 - 150 mm with twin needle
6. Chuck, red, for old valves
7. Chuck, blue, for old valves
8. Allen key 5 mm
9. Allen key 3 mm
10. Key STA
11. Chain for mounting
12. Manual
13. Certificate
14. CD-record
15. PC cable
16. Torx key
17. Upgrade cable
18. Measuring needles
19. Belt clip

Function

Differential pressure measurement

Sensor for high total pressures and low differential pressures gives quick results and reliable readings.

Temperature measurement

A Pt 1000 temperature sensor which allows measurement direct in the media is included.

Automatic calibration

When the sensor is connected and the instrument switched on, the sensor is automatically calibrated before each measurement sequence.

Automatic venting

The design of the sensor unit and a short flow-through during calibration eliminate measurement errors caused by insufficient venting.

Balancing

The instrument is programmed to calculate pre-setting values for balancing and also the TA Method and TA Balance.

PC communication

Measured values can be saved in the TA-CBI and then transferred to a PC for printout as a commissioning report. It is also possible to prepare the measurements by describing the system in the PC and then download the data to the TA-CBI. A PC program is included for this purpose.

Media correction

TA-CBI can calculate flows with different contents of glycol or similar anti-freeze additives in the water.

Trouble shooting

TA-CBI can log differential pressures, flows or temperatures: up to 24 000 measured values can be logged. With appropriate choice of logging interval, this means that periods from 20 hours to 65 days can be covered.

Support material

Manuals

See the following manuals for descriptions of various balancing methods:

Total hydronic balancing

Manual no. 1: Balancing control circuits

Manual no. 2: Balancing distribution systems

Manual no. 3: Balancing of radiator systems

Manual no. 4: Hydronic balancing with differential pressure controllers

TA Balance

This method involves balancing the circuits (the modules) separately. Measure each valve at two settings: the prescribed position, and closed. When all the valves in the module have been measured, the TA-CBI will calculate the settings and assign a pressure drop of 3 kPa to the least favoured valve.

TA Method

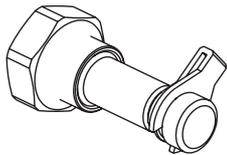
In the TA Method you first choose the valve which is furthest away in the circuit as a reference valve. Using the main valve for this entire circuit, maintain a constant differential pressure during the course of the operation (for example 3 kPa) at the correct flow through the reference valve. Then, set the correct flow rate in the remaining valves in this circuit successively starting with the second furthest valve from the pump.

When all circuits are ready proceed with the main line. When the entire installation is balanced all valves have the correct flow. If it has been necessary to throttle a valve in series with the pump, adjust the pump or change to one with the correct capacity.

Accessories

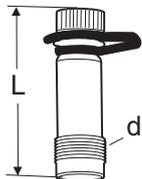
Measuring nipple

Thread connections G1/2 and G3/4



TA No	
52 197-303	G1/2
52 197-304	G3/4

Measurement point



TA No	L	d	For valve
52 179-009	39	1/4	STAF DN 20-50
52 179-609	103	1/4	"
52 179-008	39	3/8	STAF DN 65-300
52 179-608	103	3/8	"

Measuring nipple

Extension 60 mm

Can be installed without draining of the system.



TA No
52 179-006

Measuring hose

Extension



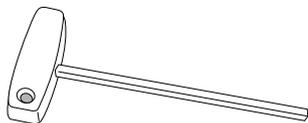
TA No	Length	
52 197-093	3 m	red, with shut-off valve
52 197-094	3 m	blue

Charge lead for 12V connection in a car. (TA-CBI)



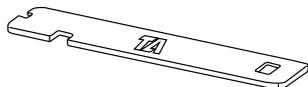
TA No
52 197-070

Allen key



TA No		
52 187-103*	3 mm	Pre-setting
52 187-105*	5 mm	Draining

Key for measurement point



TA No
52 187-004*

*) Included in the TA-CBI.