Calibration

New transmitters are always delivered factory-calibrated by AP. This is stated by the calibration label indicating date and calibration gas. Calibration is not necessary during commissioning if the calibration doesn't date back more than 6 months for CO transmitters and 3 months for all other gases.

For the calibration of the bus transmitter (MP X.1) an automatic routine is deposited in the menu "Calibration" of the service tool LTS. The measured value of the analog transmitter (MP X.2) for the calibration with the zero/ gain potentiometer is also displayed in this menu.

While the calibration menu is open, the bus transmitter doesn't transmit any measured values to the controller. Therefore applying the calibration gas to the sensor of bus or analog transmitter doesn't release any alarm.
As facilities you only need a zero gas and a calibration gas, the calibration adapter and an extraction set.

Prior to calibration the sensor must be connected continuously to the power supply for a running-in period.
The running-in period of the different sensors can be taken from the following table:

	Sensor type	t_{in}
01	CO	1 h
02	Ex	1 h
03	NO	4 h
04	NO_2	6 h
05	NH_3	18 h
06	O_2	1 h
07	Semi-conductor sensors	8 days

Project protection

To avoid unwanted access to the sensitive calibration data by a third party, every customer gets a project key. All projects of the customer are delivered with this key. This key is also deposited in each LTS bought by that customer.

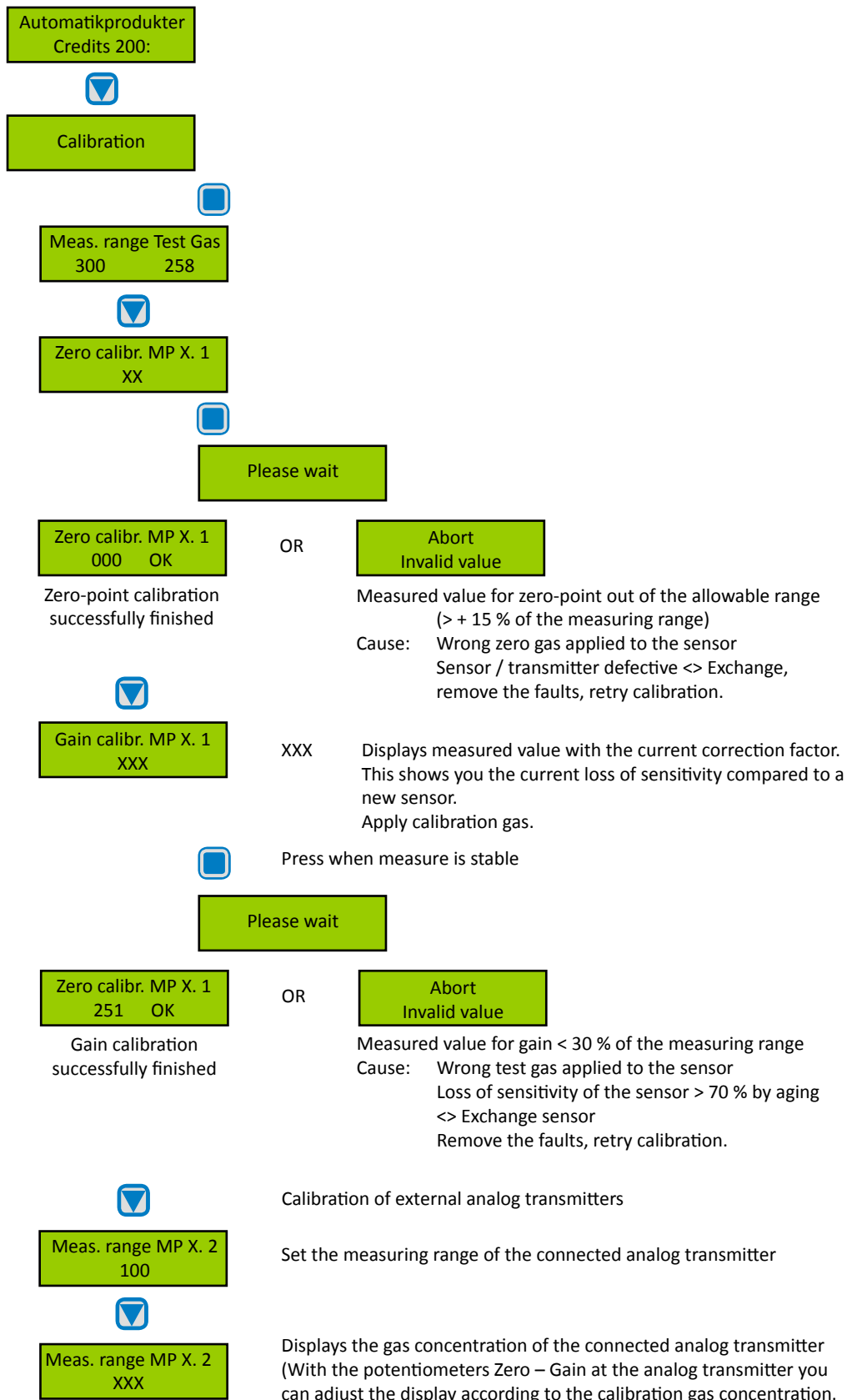After opening of the menu "Calibration", the LTS asks first of all for the project key of the central control. Only if the key is approved in the LTS, calibration will be possible.

If the keys do not correspond to each other, the following message will appear:

NO ACCESS AUTHORISATION

Prior to calibration please read also the section "Credit system". The calibration procedure is described on the next page.

Automatikprodukter

Connect LTS to the service tool jack of the transmitter.

Automatikprodukter
Credits 200:

▼

Calibration

◼

Meas. range Test Gas
300   258

▼

Zero calibr. MP X. 1
XX

◼

Please wait

Zero calibr. MP X. 1
000   OK   OR   Abort
                                               Invalid value

Zero-point calibration   Measured value for zero-point out of the allowable range
successfully finished   (> + 15 % of the measuring range)
                                       Cause: Wrong zero gas applied to the sensor
                                                Sensor / transmitter defective <> Exchange,
                                                remove the faults, retry calibration.

▼

Gain calibr. MP X. 1   XXX   Displays measured value with the current correction factor.
XXX   This shows you the current loss of sensitivity compared to a
                                       new sensor.
                                       Apply calibration gas.

◼   Press when measure is stable

Please wait

Zero calibr. MP X. 1
251   OK   OR   Abort
                                               Invalid value

Gain calibration   Measured value for gain < 30 % of the measuring range
successfully finished   Cause: Wrong test gas applied to the sensor
                                                Loss of sensitivity of the sensor > 70 % by aging
                                                <> Exchange sensor
                                                Remove the faults, retry calibration.

▼   Calibration of external analog transmitters

Meas. range MP X. 2   Set the measuring range of the connected analog transmitter
100

▼

Meas. range MP X. 2   Displays the gas concentration of the connected analog transmitter
XXX   (With the potentiometers Zero – Gain at the analog transmitter you
                               can adjust the display according to the calibration gas concentration.

2

Credit system

A credit system for the calibration of the gas transmitters, MP X.1, is integrated in the LTS. For each successful calibration of a bus transmitter the credit account is reduced by one credit point. As long as the communication "bus transmitter < > LTS " hasn't been interrupted, gain calibration is possible several times with only one credit. No credits are necessary for the zero point calibrations as well as for the calibration of analog transmitters.

In the starting menu of the LTS the number of the actual credit points is displayed. Due to this information it is possible to load new credits in time.

In delivery status 200 credit points are already activated in the LTS.

Reloading credit points

New credit points can be loaded by entering a 4-digit code without laborious returning of the LTS device to AP.

By stating the 6-digit LTS serial number, you can ask AP about this code by phone. A block of 100 new credit points is released with each code number. Due to the telephone transit of the code, reloading new credits even can be done directly by the service technician during maintenance.

The LTS serial number can be read from the type label and is deposited in the menu "Credit".

Menu "Credit"

Automatikprodukter Credits 200:	Starting menu
▼	
Addressing	Address menu
▼	
Credit menu	Credit menu
■	
Number of credits	Number of credits
▼	
Serial number XXXXXX	Serial number of the LTS
▼	
Load credits	Loading credits
■	
Enter credit XX code XXXX	XX = Block No. of the next 100 credits XXXX = Enter the 4-digit code