CALIBRATION INSTRUCTIONS HP-ESR20

The indicator offers the possibility to enter a maximum of three calibration points (multiple point calibration). The advantage is that even weighing systems with bad hysteresis can be calibrated within specifications.

Since these instructions are often used in the field, where it is difficult to calibrate various points, we will start with the explanation of single point calibration.

POSSIBILITIES
There are two different ways to calibrate the system. In both cases a zero calibration should be performed before the calibration takes place.

1. Two point calibration (calibration weight 1000kg to 1500kg).
   This is a zero calibration and 1 weight calibration at about 50% to 75% of the capacity of the weighing system.
2. Multi-point calibration for weighing systems with accuracy problems (calibration weights about 200kg, 1000kg and 1500kg)
   This is a zero calibration + three weight calibrations at about 10%, 50% and 75% of the capacity of the weighing system..

DEFINING ZERO

Unload the system.
Switch the system on.
Lift the weighing system by pumping the handle twice. The weighing system is not underneath anything is standing completely free.

- ❑ Push the ↵ key for about 9 seconds until the screen changes, then release the key.
  The weighing system shows several settings.
  The zero calibrations is completed and the weighing system will return to standard weighing mode.

1. TWO POINT CALIBRATION

The weighing system should be turned on and the zero calibration should already be completed.

- ❑ Press the ▼ key for 20 seconds.
  The indicator shows the value of the first calibration point, the *NET* pointer is flashing.
  Use the ▼, ▲ and ↵ keys to enter the correct calibration weight.
- ❑ Press the ↵ key shortly, the right segment starts flashing.
- ❑ Use the ▼ or ▲key to set the first calibration weight (eg. for 1472 kg, set to “2”).
- ❑ Press the ↵ key shortly to confirm, now the second segment is flashing.
- ❑ Use the ▼ or ▲key to set this to “7”.
- ❑ Press the ↵ key shortly to confirm, now the third segment is flashing.
- ❑ Use the ▼ or ▲key to set this to “4”.
- ❑ The thousands segment should be set, if necessary, to “1”, in the same way as the previous segments.
- ❑ Confirm all other segments with ↵ until the *NET* pointer is flashing.
- ❑ Lift the calibration weight (in the above mentioned example 1472kg).
- ❑ Press the ↵ key for about **4 seconds** to confirm. The display counts down to “AF00”. The first calibration value is displayed.
- ❑ Press the ▲ key, the ~ pointer is flashing, the middle calibration value should be set to “00000” for a two point calibration.
- ❑ Press the ↵ key shortly, the right segment starts flashing.
- ❑ Use the ▼, ▲ and ↵ keys to set the middle calibration weight (00000kg) as described above.
  Confirm all segments with ↵ until the ~ pointer is flashing
- ❑ Press the ↵ key for about **4 seconds** to confirm. The display counts down to “AF00”. The middle calibration value is displayed.

- ❑ Press the ▲ key, the *NET* + ~ pointers are flashing, the last calibration value should be set to "00000" for a two point calibration.
- ❑ Press the ↵ key shortly, the right segment starts flashing.
- ❑ Use the ▼, ▲ and ↵ keys to set the middle calibration weight (00000kg) as described above. Confirm all segments with ↵ until the *NET* + ~ pointers are flashing.
- ❑ Press the ↵ key for about **4 seconds** to confirm. The display counts down to "AF00". The last calibration value is displayed.
- ❑ Press the ▲ key to leave the calibration mode, the weigh systems displays eg. AP 11 (internal value).
- ❑ Press the ↵ key for about **4 seconds**, the system returns to standard weighing mode, shows the actual weight on the forks, the calibration is completed and the calibration load can be lowered.

or: MULTI-POINT CALIBRATION

The weighing system should be turned on and the zero calibration should already be completed.

- ❑ Press the ▼ key for 20 seconds.
  The indicator shows the value of the first calibration point, the *NET* pointer is flashing.
  Use the ▼, ▲ and ↵ keys to enter the correct calibration weight.
- ❑ Press the ↵ key shortly, the right segment starts flashing.
- ❑ Use the ▼ or ▲key to set the first calibration weight (eg. for 250 kg, se to "0").
- ❑ Press the ↵ key shortly to confirm, now the second segment is flashing.
- ❑ Use the ▼ or ▲key to set this to "5".
- ❑ Press the ↵ key shortly to confirm, now the third segment is flashing.
- ❑ Use the ▼ or ▲key to set this to "2".
- ❑ The thousands segment should be set, if necessary, to "0", in the same way as the previous segments.
- ❑ Confirm all other segments with ↵ until the *NET* pointer is flashing.
- ❑ Lift the calibration weight (in the above mentioned example 250kg).
- ❑ Press the ↵ key for about **4 seconds** to confirm. The display counts down to "AF00". The first calibration value is displayed. The first calibration weight can be lowered.
- ❑ Press the ▲ key, the ~ pointer is flashing, the middle calibration value can now be entered.
- ❑ Press the ↵ key shortly, the right segment starts flashing.
- ❑ Use the ▼, ▲ and ↵ keys to set the middle calibration weight (eg. 1250kg) as described above. Confirm all segments with ↵ until the ~ pointer is flashing.
- ❑ Lift the calibration weight (in the above mentioned example 1250kg).
- ❑ Press the ↵ key for about **4 seconds** to confirm. The display counts down to "AF00". The middle calibration value is displayed. The middle calibration weight can be lowered.
- ❑ Press the ▲ key, the *NET* + ~ pointers are flashing, the last calibration value can now be entered.
- ❑ Press the ↵ key shortly, the right segment starts flashing.
- ❑ Use the ▼, ▲ and ↵ keys to set the last calibration weight (eg. 1875kgkg) as described above. Confirm all segments with ↵ until the *NET* + ~ pointers are flashing.
- ❑ Lift the calibration weight (in the above mentioned example 1875kg).
- ❑ Press the ↵ key for about **4 seconds** to confirm. The display counts down to "AF00". The last calibration value is displayed.
- ❑ Press the ▲ key to leave the calibration mode, the weigh systems displays eg. AP 11 (internal value).
- ❑ Press the ↵ key for about **4 seconds**, the system returns to standard weighing mode, shows the actual weight on the forks, the calibration is completed and the calibration load can be lowered.

Attention: When a weighing system is calibrated using the multi-point calibration, the smallest weight should be used first, then the middle weight and finally the largest weight. If only 1 calibration weight is used, then values 2 and 3 must be set to "00000".