Position indicating system for remote indication of tap-changer position

- The indicator is a moving-coil instrument.
- Available with quadrant scale or ring scale.
- Fed by a measuring amplifier.
- The output current is independent of load variations up to 750 W.
- Suitable for series-connection of more instruments.
- Controlled by a potentiometer in the motor-drive.
Technical data

**Position transmitter**
The position transmitter is included in the motor-drive.
Potentiometer type, 10 Ω/step
Max 340 Ω

**Measuring amplifier**
The measuring amplifier is normally mounted in the motor-drive, but it can also be placed in the control room.
Manufacturer: Tillqvist Elteknik AB
Type: VR 103L-0X
24 – 130 V DC ± 20 %
110 – 120 V AC ± 20 %
220 – 240 V AC ± 20 %
Output 0 – 20 mA
0 – 1 mA, 0 – 5 mA
0 – 10 mA, 0 – 20 mA
4 – 20 mA

**Position indicator**
Manufacturer: Tillqvist Elteknik AB
Moving-coil instrument
Input: see measuring amplifier
Black frame
Size 96 x 96 mm or 144x144 mm
Further data on request.

Dimensions

**Fig. 1. Position indicators.**

**Fig. 2. Position indicators.**

**Fig. 3. Measuring amplifier.**
Adjustment of measuring amplifier  (Made in our factory)

1) Adjust the indicator to show "0" position at voltage-free.
2) With the motor-drive in lowest position, the lowest output current is adjusted by potentiometer "zero" at the front of the amplifier.
3) With the motor-drive in highest position, the highest output current is adjusted by potentiometer "max" at the front of the amplifier.
4) Short-circuit connect tap 1 and 2 of the position transmitter by means of a jumper at the terminal blocks, and adjust one more time the lowest current by potentiometer "zero".
5) Disconnect the jumper and adjust once more the highest current by potentiometer "max".

Adjustment of remote position indicator (for OLTC)

The measuring amplifier, which feeds the position indicator, is located in the motor-drive mechanism and is checked and calibrated at the tap-changer factory. Once connected to the position indicator at site, the amplifier might require some adjustment.

1) Operate the OLTC to its max. position.
2) Check that the position indicator now shows the same position. If displaced, the pointer is adjusted by slightly turning the max. adjustment screw on the measuring amplifier.
3) Operate the OLTC to its min. position.
4) Check that the position indicator also shows the min. position.

If necessary, adjust the pointer by a slight turn of the zero adjuster screw on the measuring amplifier.

Ordering table

To ensure correct delivery, following information must be given:

**Measuring amplifier**
1. Number of positions
2. Desired supply voltage
3. Desired output

**Position indicator**
1. Number of positions and type of marking
2. Language

Fig. 4. Principle diagram.