Suitable for:	**RITTER** Drum-type Gas Meters		
Filling liquid:	Isoamylbenzoat (thermometer contains no mercury)		
Measuring Ranges:	0 °C	to + 60°C,	scale graduation 0.5°C, scale length 150 mm
	0 °C	to + 50°C,	scale graduation 0.1°C, scale length 330 mm
	0 °C	to + 125°C,	scale graduation 1°C, scale length 215 mm
	15 °C	to + 30°C,	scale graduation 0.1°C, scale length 235 mm

Application:

The Thermometer (Gas) can be used for measurement of the gas temperature while measuring the gas flow. Among other reasons, this is necessary if the measured and indicated **actual volume** of gas must be recalculated into the **norm volume**. The **actual** volume is the volume at the **actual** temperature and the **actual** pressure. The **norm volume** of a gas is the volume at **norm conditions** which are (in Germany):

Norm temperature	=	273.15	Kelvin (= 0 °C)
Norm pressure	=	1,013.25	mbar

The formula for converting the **actual volume** into **norm volume** is:

$$V_N = V_i \times \frac{P_a}{P_N} \times \frac{T_N}{T_i}$$

where

V_N	=	Norm Volume in	[ltr]
V_i	=	indicated Volume in	[ltr]
p_N	=	Norm Pressure in	[mbar-absolute]
p_a	=	actual Pressure in	[mbar-absolute]
T_N	=	Norm Temperature in	[Kelvin]
T_i	=	indicated Temperature in	[Kelvin]

Installation:

Unpack the Thermometer. Unscrew the closing cap of the Thermometer (Gas) support on the Gas Meter. Mount the Thermometer by inserting carefully through the Thermometer (Gas) support (see middle picture above). Seal the Gas Meter's casing by tightly screwing the union nut which is attached to the Thermometer. Thus, the Thermometer is ready for use. The removed closing cap of the support can be stored easily by screwing it onto the respective thread support at the rear side of the Thermometer (Gas) support. (See arrow in the right-hand picture above.)

Suitable for:	**RITTER** Drum-type Gas Meters		
Filling liquid:	Isoamylbenzoat (thermometer contains no mercury)		
Measuring Ranges:	0 °C	to + 60°C, scale graduation 0.5°C,	scale length 150 mm
	0 °C	to + 50°C, scale graduation 0.1°C,	scale length 330 mm
	0 °C	to + 125°C, scale graduation 1°C,	scale length 215 mm
	15 °C	to + 30°C, scale graduation 0.1°C,	scale length 235 mm

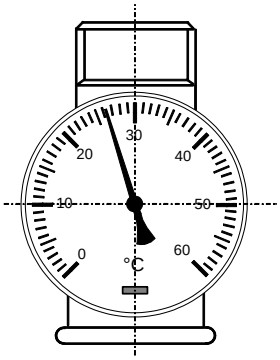
Application:

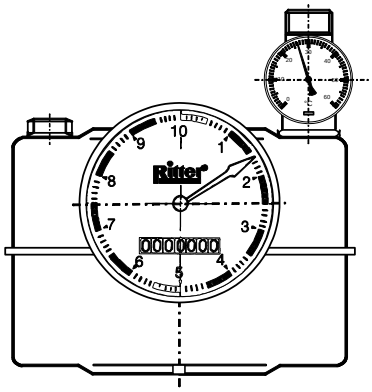
The Thermometer (Packing Liquid) can be used for measurement of the Packing Liquid temperature while measuring the gas flow.

According to the rules for calibration and measurement with Drum-type Gas Meters, the temperature of the Packing Liquid may vary from the gas temperature by up to 0.5 °C at most. A greater temperature deviation would cause too great a change to the gas temperature when the gas comes unavoidably into contact with the Packing Liquid during measurement. This temperature change would cause an unknown change in the volume of the measured gas which might lead to a measurement/indication error.

Installation:

Unpack the Thermometer. Unscrew the closing cap of the Thermometer (Packing Liquid) support on the Gas Meter. Mount the Thermometer by inserting carefully through the Thermometer (Packing Liquid) support (see middle picture above). Seal the Gas Meter's casing by tightly screwing the union nut which is attached to the Thermometer. Thus, the Thermometer is ready for use. The removed closing cap of the support can be stored easily by screwing it onto the respective thread support at the rear side of the Thermometer (Packing Liquid) support (see arrow in the right-hand picture above)





Suitable for:	**RITTER** Bellows-type Gas Meters
Measuring Range:	0° to +60°C
Resolution:	1°C

Application:

The Thermometer can be used for measurement of the gas temperature while measuring the gas flow. Among other reasons, this is necessary if the measured and indicated **actual volume** of gas must be recalculated into the **norm volume**. The **actual** volume is the volume at the **actual** temperature and the **actual** pressure. The **norm volume** of a gas is the volume at **norm conditions** which are (in Germany):

Norm temperature	=	273.15	Kelvin (= 0 °C)
Norm pressure	=	1,013.25	mbar

The formula for converting the **actual volume** into **norm volume** is:

$$V_N = V_i \, x \, \frac{P_a}{P_N} \, x \, \frac{T_N}{T_i}$$

where

V_N	=	Norm Volume in	[ltr]
V_i	=	indicated Volume in	[ltr]
p_N	=	Norm Pressure in	[mbar]
p_a	=	actual Pressure in	[mbar]
T_N	=	Norm Temperature in	[Kelvin]
T_i	=	indicated Temperature in	[Kelvin]

Installation:

Unpack the Thermometer which is mounted into a T-piece. According to the rules for calibration and measurement with gas meters, the thermometer must be positioned at the gas outlet of the meter (see right picture above). The gas outlet nozzle is labelled accordingly.

Mount the Thermometer onto the gas outlet nozzle by tightly screwing the union nut which is attached to the Thermometer. Thus, the Thermometer is ready for use.