

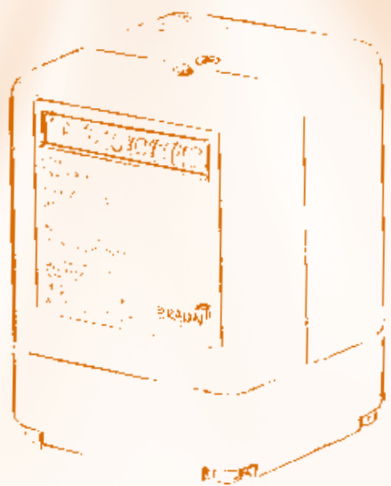
Energy monitoring with Braun

Check your energy savings, particularly effective following modernization measures.

■ After a house modernization in particular, you should know whether your energy consumption has actually been minimized. The savings can be measured. The oil meter offers optimum oil consumption monitoring. It is best to install it before modernizing so as to be able to make an accurate comparison afterwards.

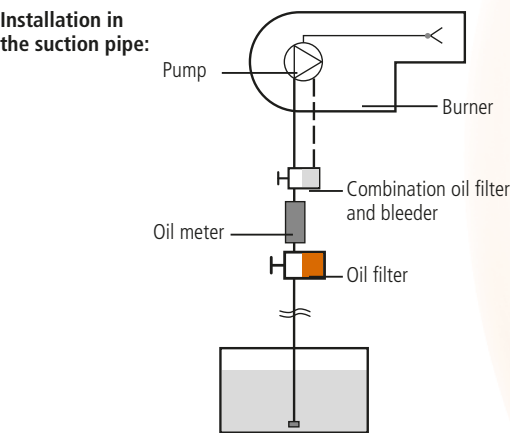
If an alternative energy source is used in addition to your heating system you will be able to make an optimum comparison of the consumption figures before and afterwards. Your energy savings will be measurable with a Braun oil meter.

Monitor your consumption. No problem with the simple handling of this oil meter. Save where it is most effective. Make use of this option at the time you purchase your oil requirements and because of this you can even determine the price itself and not as for other energy carriers where the price is preset for you. BRAUN oil meters - an optimum addition to your heating system!

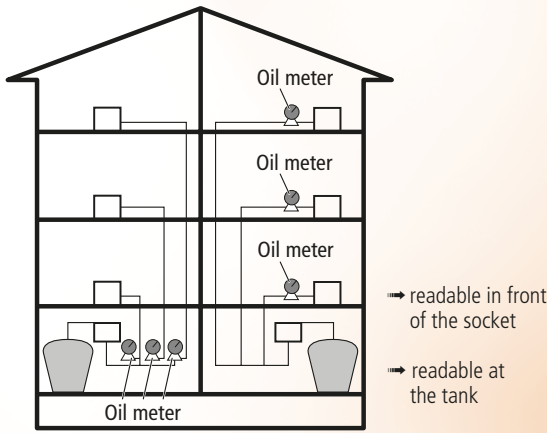


Installation options for HZ 3 and HZ 3 RR

Single pipe system (oil central heating)

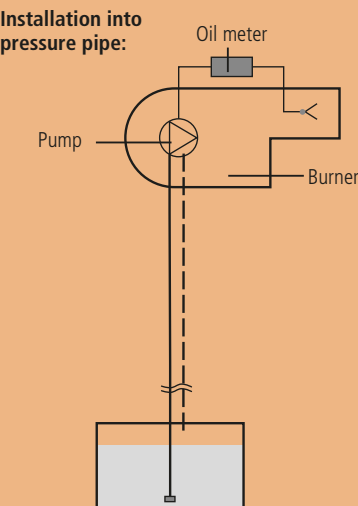


ZÖV (central oil supply)

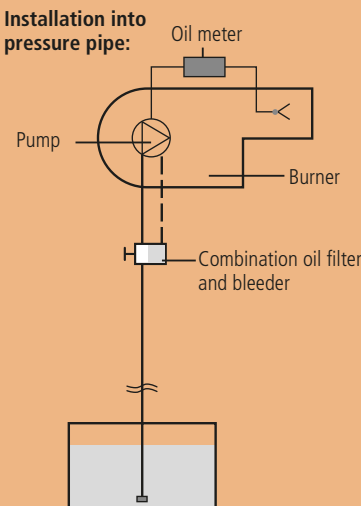
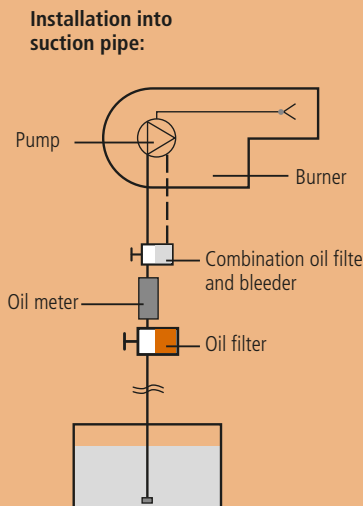


Installation options for HZ 5, HZ 5 R, HZ 5 DR, and also HZ 6, HZ 6 R, HZ 6 DR

Twin pipe system



Single pipe system



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BRAUN oil meters for perfect consumption monitoring.

Rotary piston oil meters

Flow rate range 4 - 9.000 l/h



Typ of oil meter	VZO 8	VZO 15 RC	VZO 20 RC	VZO 25 RC	VZO 40 RC
Technical Data					
Connecting thread	G 1/4"	G 1/2"	G 3/4"	G 1"	G 1 1/2"
Nominal diameter	8	15	20	25	40
Max. flow rat	200 l/h	600 l/h	1.500 l/h	3.000 l/h	9.000 l/h
Permanent flow rate	135 l/h	400 l/h	1.000 l/h	2.000 l/h	6.000 l/h
Min. flow rate	4 l/h	10 l/h	30 l/h	75 l/h	225 l/h
Start about	1,6 l/h	4 l/h	12 l/h	30 l/h	90 l/h
Measuring accuracy	± 1 %	± 1 %	± 1 %	± 1 %	± 1 %
Nominal pressure	25 bar	16 bar	16 bar	16 bar	16 bar
Temperature	60°C	130°C	130°C	130°C	130°C
Dimensions	79 x 65 x 65 mm	165 mm	165 mm	190 mm	300 mm
Art.-no.	40 000 008	40 000 015	40 000 020	40 000 025	40 000 040
with reed contact as pulse tachometer I = 0.1 Art.-no. I = 1.0 Art.-no.	40 000 081 40 000 082	40 000 016 40 000 017	- 40 000 021	- 40 000 026	- 40 000 041

© BRAUN oil meters 03/2015



Oil Meters from BRAUN

An optimum addition to every heating system.



Benefit from the advantages:

- Meter also available with pulse outlet (reed contact) for subsequent digital processing
- High data security
- Consumption can be digitally processed
- Economic efficiency calculations possible
- Can be retrofitted into any existing heating system and any existing measuring system
- Robust and durable
- Use energy efficiently and economically
- Accurate checking of consumption and stored quantities
- Alarm system for heating system malfunctions
- Use oil price fluctuations optimally
- Multifunctional fields of application e. g. consumption measuring at block heating works possible
- Simple clearing e. g. with lodger
- Optimal consumption control after modernisation of domicile for check-up of energy saving

Perfect technology for accurate consumption monitoring.

HZ 3 | HZ 3 RR oil meters

For central oil supply – oil stoves - measuring range 0.18 ... 30 l/h - burner capacity 1.65 ... 275 kW
Installation in suction pipe possible (single-line system).



HZ 3 oil meter

■ The HZ 3 and HZ 3 RR oil meter can be used as a measuring device for EL fuel oil and diesel fuel. Even the smallest quantities can be measured with the greatest accuracy, you simply read off your oil consumption. The calibrated oil meter permits accurate consumption calculations and is moreover extremely robust with a long service life.

Evaluation of conformity according to MID (initial calibration)

The oil meter HZ 3 is available in an EC type-certificated and examined version (registration number DE-10-MI005-PTB019 with CE-marking) or factory-tested version.

We recommend: After an operating period of 8 to 10 years an inspection concerning measuring accuracy should be carried out at the test facilities of the manufacturer, Braun Messtechnik.

HZ 3	Works tested version	Art.-No. 89 320 010
HZ 3	EC type-certificated and examined version	Art.-No. 89 320 012

HZ 3 RR oil meter

With pulse generator for further digital processing

■ In addition to the drum-type register, one can also find a potential-free reed contact installed on the HZ 3 RR. During each rotation of the dial, the reed contact emits 1 pulse, which is equivalent to a flow-rate of 1 litre.

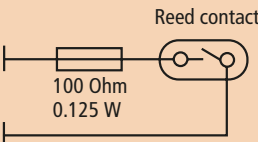
Just like the FZ 5 remote digital reader, the HZ 3 RR can also be used independently as a pulse-generator in other measuring systems.

When the HZ 3 RR is installed in other systems, then one must remember that the reed contact may only be used as a signal switch. The load limits 30 V and 30 mA must be maintained!

HZ 3 RR	Works tested version	Art.-No. 89 320 007
HZ 3 RR	EC type-certificated and examined version	Art.-No. 89 320 008

HZ 3 RR - Reed contact data

Logic Diagram:



Pulse Tachometer:

· Reed contact with protective resistor 100 Ohm, NOC

Power Rating: AC/DC max. 30 V/30 mA

Pulse value: 1 pulse = 1 liter

Low-pass before downstream entrance or meter:

· less than 5 Hz/ better
 · less than 1 Hz (recommended)

Type of Contact: Screw terminal

Max. wire gauge: 2 x 2.5 mm²

Attention:

· Avoid contact with the magnetic field: e.g. fan or solenoid valve
 · On the relay contact be mindful of the flyback diode
 · Do not connect the low-impedance voltage source parallel to the clamp!

Accessories HZ 3 models

Attachment set - for installation in suction line (single-line system). Set contains:

2 pieces Straight screw-in fittings 1/4", galvanised steel

1 piece Single-line dirt filter (filter insert 50µm) with shut-off and screw connections

AD 6 mm	Art.-No. 79 900 729
AD 8 mm	Art.-No. 79 900 730
AD 10 mm	Art.-No. 79 900 731
AD 12 mm	Art.-No. 79 900 732

Straight screwed coupling

(Steel, cylindrical, galvanized)



R 1/4" x 8 mm	Art.-No. 03 008 321
R 1/4" x 10 mm	Art.-No. 03 008 322
R 1/4" x 12 mm	Art.-No. 03 008 323

HZ 5 | HZ 5 R | HZ 5 DR oil meters

For oil central heating - measuring range 0,7 ... 40 l/h - burner capacity 7 ... 400 kW

HZ 5 oil meter

Execution with mechanical drum-type register

■ The HZ 5 oil meter is suitable for mounting on all makes of burner and can easily be retrofitted to your existing heating at any time. Check your oil consumption to see whether you use energy efficiently and economically. After correct installation the oil meter needs no maintenance or care whatsoever, this is first class technology.

HZ 5	Works tested version	Art.-No. 89 315 010
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HZ 5 R oil meter

Execution with pulse generator

■ The new oil meter HZ 5 R with altered pulse value supplies more accurate specifications for a better data mining. The HZ 5 R has a built-in potential-free reed contact. **When the flowrate is 0.02 l, then the reed contact will emit one impulse** (available on request with pulse value l = 0.01 l).

HZ 5 R	Works tested version	Art.-No. 89 315 005
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HZ 5 DR oil meter

With LCD digital display and pulse generator for digital processing

■ HZ 5 DR oil meter with built-in reed contact as „pulse generator“ and LCD digital display. The 6-digit LCD display with 6mm high figures has a display resolution of 0.1 litres (1 decimal point). **The internal reed contact supplies 50 pulses per litre, or 20 ml per pulse, to the output clamps.** The electronics in the counter turn this into a decadic value with 0.1 litres after 5 pulses in order to operate the counter.

HZ 5 DR	Works tested version	Art.-No. 89 315 008
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Accessories HZ 5 models

Attachment set - for installation of oil meter in pressure line between burner pump and burner nozzle. Set contains:

2 pieces Straight screw-in fittings G 1/8", cylindrical, galvanised steel, for 4 or 6 mm external pipe diameter

2 pieces Straight screw-in connection (galvanised steel) – coupling Connection 4 x 4 mm or 6 x 6 mm / new

2 pieces Reinforcing sleeve 6 x 1 / new

2 pieces Aluminium sealing rings compliant with DIN 7603

2 pieces Copper pipe sections, external diameter 4 or 6 mm, length 250 mm in CU-BHB R 250 material

1 Stück Retainer plate to fasten the meter, in aluminium, dimensions 1.5 x 50 x 240 mm

2 pieces Fastening screws M 4 x 6 mm galvanised

2 pieces Brass washers

4 mm	Art.-No. 79 900 740
6 mm	Art.-No. 79 900 741

Attachment set - for installation of oil meter in suction line.

AD 8/10 mm. Set contains:

2 pieces Straight screw-in fittings 1/8", galvanised steel

1 piece Retainer plate to fasten the meter

1 piece Single-line dirt filter (filter insert 50µm) with shut-off and screw connections

AD 6 mm	Art.-No. 79 900 742
AD 8 mm	Art.-No. 79 900 743
AD 10 mm	Art.-No. 79 900 744

AD 12 mm. Set contains:

2 pieces Reducer unions 1/8" x 1/4", galvanised steel

2 pieces Straight screw-in fittings 1/4", galvanised steel

1 piece Retainer plate to fasten the meter

1 piece Single-line dirt filter (filter insert 50µm) with shut-off and screw connections

AD 12 mm	Art.-No. 79 900 745
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Straight screwed coupling

(Steel, cylindrical, galvanized)



R 1/8" x 4 mm	Art.-No. 39 400 456
R 1/8" x 6 mm	Art.-No. 39 400 487
R 1/8" x 8 mm	Art.-No. 39 400 457
R 1/8" x 10 mm	Art.-No. 39 400 458

HZ 6 | HZ 6 R | HZ 6 DR oil meters

For oil central heating - measuring range 1 ... 60 l/h - burner capacity 10 ... 600 kW

HZ 6 oil meter

Execution with mechanical drum-type register

■ The HZ 6 oil meter is suitable for mounting on all makes of burner and can easily be retrofitted to your existing heating at any time. Check your oil consumption to see whether you use energy efficiently and economically. After correct installation the oil meter needs no maintenance or care whatsoever, this is first class technology.

HZ 6	Works tested version	Art.-No. 89 316 010
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HZ 6 R oil meter

Execution with pulse generator

■ The new oil meter HZ 6 R with altered pulse value supplies more accurate specifications for a better data mining. The HZ 6 R has a built-in potential-free reed contact. **When the flowrate is 0.02 l, then the reed contact will emit one impulse** (available on request with pulse value l = 0.01 l).

HZ 6 R	Works tested version	Art.-No. 89 316 005
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HZ 6 DR oil meter

With LCD digital display and pulse generator for digital processing

■ HZ 6 DR oil meter with built-in reed contact as „pulse generator“ and LCD digital display. The 6-digit LCD display with 6mm high figures has a display resolution of 0.1 litres (1 decimal point). **The internal reed contact supplies 50 pulses per litre, or 20 ml per pulse, to the output clamps.** The electronics in the counter turn this into a decadic value with 0.1 litres after 5 pulses in order to operate the counter.

HZ 6 DR	Works tested version	Art.-No. 89 316 008
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Accessories HZ 6 models

Attachment set - for installation of oil meter in pressure line between burner pump and burner nozzle. Set contains:

2 pieces Straight screw-in fittings G 1/8", cylindrical, galvanised steel, for 4 or 6 mm external pipe diameter

2 pieces Straight screw-in connection (galvanised steel) – coupling Connection 4 x 4 mm or 6 x 6 mm / new

2 pieces Reinforcing sleeve 6 x 1 / new

2 pieces Aluminium sealing rings compliant with DIN 7603

2 pieces Copper pipe sections, external diameter 4 or 6 mm, length 250 mm in CU-BHB R 250 material

1 Stück Retainer plate to fasten the meter, in aluminium, dimensions 1.5 x 50 x 240 mm

2 pieces Fastening screws M 4 x 6 mm galvanised

2 pieces Brass washers

4 mm	Art.-No. 79 900 740
6 mm	Art.-No. 79 900 741

Attachment set - for installation of oil meter in suction line.

AD 8/10 mm. Set contains:

2 pieces Straight screw-in fittings 1/8", galvanised steel

1 piece Retainer plate to fasten the meter

1 piece Single-line dirt filter (filter insert 50µm) with shut-off and screw connections

AD 6 mm	Art.-No. 79 900 742
AD 8 mm	Art.-No. 79 900 743
AD 10 mm	Art.-No. 79 900 744

AD 12 mm. Set contains:

2 pieces Reducer unions 1/8" x 1/4", galvanised steel

2 pieces Straight screw-in fittings 1/4", galvanised steel

1 piece Retainer plate to fasten the meter

1 piece Single-line dirt filter (filter insert 50µm) with shut-off and screw connections

AD 12 mm	Art.-No. 79 900 745
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Straight screwed coupling

(Steel, cylindrical, galvanized)



R 1/8" x 4 mm	Art.-No. 39 400 456
R 1/8" x 6 mm	Art.-No. 39 400 487
R 1/8" x 8 mm	Art.-No. 39 400 457
R 1/8" x 10 mm	Art.-No. 39 400 458

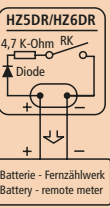
Technical data HZ 3 and HZ 3 RR

Flow rate range (MID Guideline 2004/22/EC)	0.18 ... 30 l/h
Maximum flow rate range (according to the manufacturer's standards)	30 l/h (25 kg/h)
Possibility to read from the oil meter	0.01 l ... 99999,99 l
Measuring accuracy	± 1 %
Nominal pressure	6 bar
Pressure loss	0.05 bar ... 0,1 bar
Heating oil type	EL according to DIN 51603
Temperature range/ ambient temperature	–5°C ... +70°C
Connecting thread	DIN 3852-X-G 1/4", internal
Boiler capacity/burner capacity	1.65 kW ... 275 kW
Weight	1.25 kg

HZ 5 DR und HZ 6 DR - Reed contact data

Example 1:

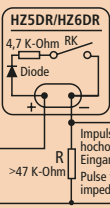
Connection to the active port e.g.: Battery gauge



or similar

Example 2:

Connection to the passive port



R can also be plugged into the downstream inlet: at least 47 K-Ohm

Pulse output

· Connection via screw-clamp terminals

· Reed contact: max. 30 VDC,

I_{max} = 6 mA, R_s = 4.7 K-Ohm/0.6W (observe polarity)

· Principle: The power circuit of a counter or other registering device attached to the plus and minus terminal clamps is closed via the reed contact and 4.7 K-Ohm impedance. The input impedance should be at least 50 K-Ohm to ensure that the additional counte reaches its switching threshold.

· **Impulswert:** 1 pulse = 0.02l
 50 pulses = 1l

· Max. frequency at 60l/h approx. 1Hz (Due to the reed contact [-debouncing-], use remote counter with dampened input)

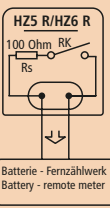
Technical data HZ 5, HZ 5 R, HZ 5 DR

Flow rate range	0.7 ... 40 l/h (0.6 ... 34 kg/h)
Burner capacity	7 kW ... 400 kW
Possibility to read from the oil meter	0.01 l ... 99999,98 l
Measuring accuracy	± 1 %
Nominal pressure	25 bar
Pressure loss (Take particular care of this when installing in the suction line!)	0.05 bar ... 0.2 bar
Heating oil type	EL nach DIN 51603
Temperature range/ambient temperature	–5°C ... +70°C
Connecting thread	DIN 3852-X-G 1/8" innen
Dimensions	60 x 60 x 85 mm
Weight	0.6 kg

HZ 5 R und HZ 6 R - Reed contact data

Example 1:

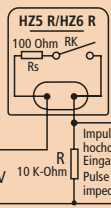
Connection to the active port e.g.: Battery gauge



or similar

Example 2:

Connection to the passive port



R can also be plugged into the downstream inlet: at least 10 kohm

Reed contact:

· Pulse value: 1 Pulse = 0.02 l

Type of contact - NO switch:

· max. electricity 70 mA/max. voltage 30 V
 · integrated protective resistor RS: 100 Ohm/ 0.6 W
 · voltage drop across RS at 10 mA: 1 V

Pulse Frequency:

· at 40l/h ca. 0.2 Hz (HZ 5 R)

· at 60l/h ca. 0.2 Hz (HZ 6 R)

Attention:

· Avoid contact with the magnetic field: e.g. fan or solenoid valve
 · On the relay contact be mindful of the flyback diode
 · Do not connect the low-impedance voltage source parallel to the clamp!

Technical data HZ 6, HZ 6 R, HZ 6 DR

Flow rate range	1 ... 60 l/h (0.8 ... 50.4 kg/h)
Burner capacity	10 kW ... 600 kW
Possibility to read from the oil meter	0.01 l ... 99999,98 l
Measuring accuracy	± 1 %
Nominal pressure	25 bar
Pressure loss (Take particular care of this when installing in the suction line!)	0.05 bar ... 0.2 bar
Heating oil type	EL nach DIN 51603
Temperature range/ambient temperature	–5°C ... +70°C
Connecting thread	DIN 3852-X-G 1/8" innen
Dimensions	60 x 60 x 85 mm
Weight	0.6 kg