

**Precise measuring instruments
for viscosity and surface science**

Product range 2023 / 2024

Version 2023-04-01

Cleaning modules VRM



Precise data. Constant values.

Cleaning modules VRM



The analysis of many polymers requires the use of hazardous solvents such as phenol / dichlorbenzene (e.g. for PET), metacresol or concentrated sulfuric acid (e.g. for PA). The VRM cleaning module enable the fully automatic cleaning and drying of the viscometers, preventing the user of getting in direct contact with those harmful substances.

Depending on the configuration, one or two viscometers can be connected and two different cleaning liquids can be set separately. The VRM 4 HT series is designed to handle even very hot samples of up to 160°C or highly viscous samples with 1,000 mm²/s. The glass viscometers are cleaned by using cleaning solvents and dried with a volatile solvent and ambient air.

The VRM 4 S enables cleaning even with concentrated sulfuric acid.

Special Features:

- || Automatic (online) rinsing of the viscometer
- || Inert and corrosion-free for all standard solvents
- || Individual specification of cleaning procedures using PC software
- || No external connections necessary
- || Two different rinsing agents (the first for cleaning, the second for drying)
- || **VRM 4** for use with most common solvents, **VRM 4 S** with resistance to sulfuric acid, **VRM 4 HT** for high temperatures and high viscosity (external suction pump VRP (LMRZ809) necessary)

| Technical features | VRM 4 (LMR 911) | VRM 4 S (LMR 912) | VRM 4 HT (LMR 913) |
|---------------------------|------------------------------|------------------------------|--------------------------------|
| Temperature range | 20...100°C | 20...100°C | 20...160°C |
| Viscosity range samples | 0.3...100 mm ² /s | 0.3...100 mm ² /s | 0.3...1,000 mm ² /s |
| Amount of cleaning agents | 2 | 2 | 2 |
| Dimensions (WxDxH) | 130x160x130 mm | 130x160x130 mm | 130x160x130 mm |
| Weight, net | 4.8 kg | 4.8 kg | 4.6 kg |

Note:

VRM can only be used in combination with a PVS system (not with iVisc) and are mandatory for VAS systems. For using VRM 4 HT the suction pump VRP (LMRZ809) is additionally needed.

Necessary accessories:

- || Connection sets with sample transfer locks for capillaries
- || Mounting sets for suitable viscothermostats
- || Waste and reservoir bottles

Scope of supply:

- || Cleaning Module VRM4/S/HT (UD 692/UD 739/UD 740)
- || Tubing set for waste and reservoir bottle (LMRZ932)
- || Connection cable to PVS (UK 230)

Accessories for VRM

LMRZ809 Suction pump VRP

Viscosity rinsing pump VRP for use with VRM 4 HT, PC controlled, incl. connection cable VRM

Connection sets with manual transfer locks

For **each** measuring stand S5 there is a **seperate** connection set needed, according to the used viscometer type.

LMRZ909 Connection set 1

For viscometer with aspirating leg (Type 2, Type 6), viscosity range 0.3...100 mm²/s, incl. manual transfer lock 1 (UD 500), tubing set 4-leg (LMRZ937)



LMRZ909

LMRZ910 Connection set 2

For viscometer without aspirating leg (Type 1, Type 3, Type 5, Type 7), viscosity range 0.3...30 mm²/s, incl. manual transfer lock 2 (UD 501), tubing set 3-leg (LMRZ938)

LMRZ920 Connection set 6

For dilution viscometer (Type 4), incl. manual transfer lock 2 (UD 501), tubing set dilution (LMRZ939)

LMRZ923 Connection set 9

For viscometer with aspirating leg (Type 2, Type 6), viscosity range 100...1,000 mm²/s, incl. manual transfer lock 4 (UD 702), tubing set 3-leg (LMRZ938)



LMRZ927

Mounting sets for viscothermostats

For proper installation of the VRM modules it is absolutely essential to select the appropriate mounting set for the corresponding viscothermostat.

LMRZ904 Mounting set for PV 15 / PVL 15

For mounting of max. **one** VRM module to the viscothermostat

LMRZ905 Mounting set for PV 24 / PVL 24

For mounting of max. **two** VRM modules to the viscothermostat

LMRZ906 Mounting set for PV 36

For mounting of max. **three** VRM module to the viscothermostat

LMRZ908 Mounting set for ET 15 S/G

For mounting of max. **one** VRM module to the viscothermostat

LMRZ916 Mounting set for ET 15 S/G

For mounting of max. **two** VRM module to the viscothermostat

LMRZ927 Mounting set for Viscotemp 15 / 24

For mounting of max. **one** VRM module to the viscothermostat



LMRZ931

Waste and reservoir bottles

LMRZ931 Set of flasks and tubings 15

5x flasks DURAN (1x 2 liter, 4x 1 liter), 3x stopper with tubings

LMRZ930 Set of flasks and tubings 24

6x flasks DURAN (1x 5 liter, 2x 2 liter, 3x 1 liter), 3x stopper with tubings

LMRZ907 Stopper with tubings



LMRZ907



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