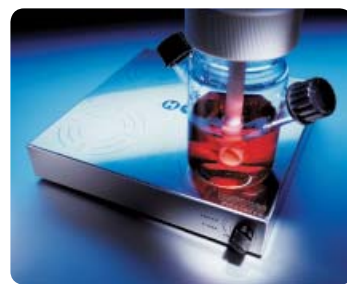


PRODUCT CATALOGUE

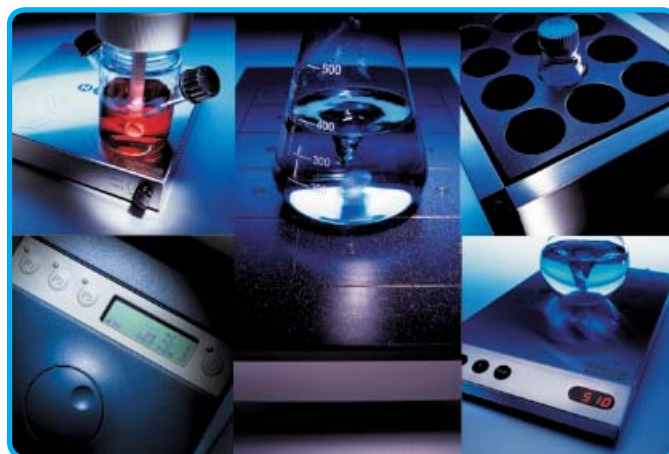


VARIOMAG®

●●● Magnetic Stirrers

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DIRECT-CONTROLLED MAGNETIC STIRRERS SINGLE-POINT, HEATABLE

Direct-controlled magnetic stirrers

have the following advantages:

- Simple operation
- Inexpensive
- Space economy

MONOTHERM

- Wear-free inductive drive
- Direct-controlled
- Speeds of 130 to 1.000 rpm
- Stirring volume up to 3.000 ml
- Heating plate temperatures up to +300 °C
- Rapid and economical heating using fully insulated heating plate
- No ballistic effects of the liquid temperature thanks to an innovative electronic control system
- Compact aluminium housing
- Available in grey and in mint
- Ultra-flat for extra stability
- Two threaded bore holes (M10) for support rods integrated in housing
- Contact thermometer (optional)
- VDE approved
- Inexpensive





TECHNICAL DATA

		MONOTHERM
Number of stirring points		1
Stirring volume per stirring point (ml)		1 - 3.000
Stirring power (W)		6
Speed range (1/min)		130 - 1.000
Heating power (W)		500
Dimensions WxDxH (mm)		160 x 295 x 60
Weight (kg)		2,5
Operating voltage (VAC)		115 or 230
Construction		
Heating plate material		Al Mg 5
Protection (DIN 40050)		Protection class 1 IP 42, VDE approved
Ambient conditions		
Operating temperature (°C)		-10 up to +40 at 80% relative humidity
Operation		direct-controlled
Order No. Color Grey		60100 (115 VAC = 60100 U)
Order No. Color Mint		60160 (115 VAC = 60160 U)

ACCESSORIES

THERMOCONTROL
Electronic contact thermometer

POWER SUPPLY with adapter for THERMOCONTROL
Required for use with **MONOTHERM**

MOUNTING CLAMP for THERMOCONTROL

Stainless steel MOUNTING CLAMP for THERMOCONTROL

SUPPORT ROD

GUARD RING

KOMET STIRRING BARS

For further information see page 40

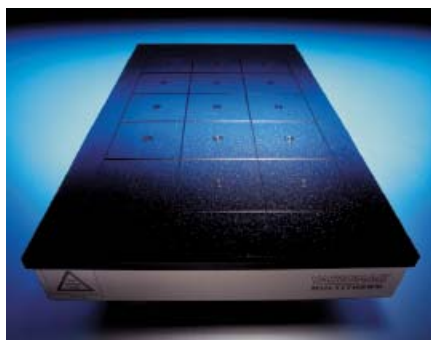


REMOTE-CONTROLLED MAGNETIC STIRRERS MULTIPLE POINT, HEATABLE

Remote-controlled magnetic stirrers

have the following advantages:

- Extraordinary mechanical, physical and chemical resistance
- Wide range of features
- Ideal for integration in larger units
- Ergonomic and convenient handling of e.g. magnetic stirrers placed under vents



MULTITHERM 6

Ideal for up to 6 different vessels and for mass screenings, but also for incubating or concentrating samples and for evaporating solvents

- Wear-free inductive drive
- Remote-controlled by separately available TELEMODUL 40 CT control unit
- Six stirring points for synchronized operation
- One flat heating plate for all stirring points made of massive aluminium
- Heating plate temperatures up to +200 °C
- PTFE-coated heating plate - dirt-repellent and non-corroding
- Speeds of 100 to 2.000 rpm
- Stirring volume up to 1.000 ml
- Suitable for 6 x 1.000 ml Erlenmeyer flasks
- Ideally suited for vessels of different types and sizes
- May be deployed directly under fume hoods

For technical specifications and a functional description of the **TELEMODUL 40 CT** control unit, please refer to page 34.



MULTITHERM 15

Identical with **MULTITHERM 6** with regard to dimensions, features, and technology, but with 15 stirring points.

For technical specifications and a functional description of the **TELEMODUL 40 CT** control unit, please refer to page 34.



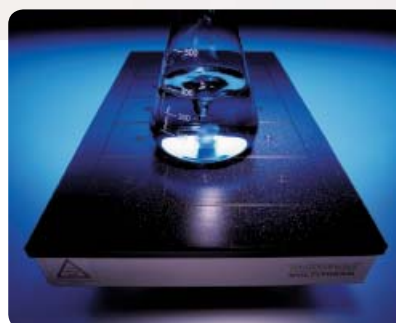
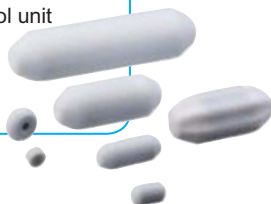
ACCESSORIES

PT 100 TEMPERATURE SENSOR (external)

- For direct control of the liquid temperature
- Stainless steel jacket
- For **TELEMODUL 40 CT** control unit

KOMET STIRRING BARS

For further information see page 37



TECHNICAL DATA

	MULTITHERM 6	MULTITHERM 15
Number of stirring points	6	15
Distance between stirring points (mm)	130	65
Stirring volume per stirring point (ml)	1 - 1.500	1 - 1.000
Stirring power (W)	12 - 40	12 - 40
Speed range (1/min)	100 - 2.000	100 - 2.000
Dimensions WxDxH (mm)	250 x 430 x 75	250 x 430 x 75
Weight (stirring drive) (kg)	12,5	13
Temperature range (°C)	up to +200	up to +200
Heating power (W)	1200	1200
Operating voltage (VAC)	115 or 230	115 or 230
Construction		
Heating plate material	aluminium / PTFE	aluminium / PTFE
Protection acc. to DIN 40050	IP 31	IP 31
Ambient conditions		
Operating temperature (°C)	-10 up to +56 at 80% relative humidity	-10 up to +56 at 80% relative humidity
Control unit		
Operation	remote-controlled	remote-controlled
Includes TELEMODUL	40 CT	40 CT
Supply voltage / frequency	100 - 240 VAC / 50 - 60 Hz	100 - 240 VAC / 50 - 60 Hz
Order No.	66106 (115 V = 66106 U)	66107 (115 V = 66107 U)

REMOTE-CONTROLLED MAGNETIC STIRRERS MULTIPLE POINT, HEATABLE

Remote-controlled magnetic stirres

have the following advantages:

- Extraordinary mechanical, physical and chemical resistance
- Wide range of features
- Ideal for integration in larger units
- Ergonomic and convenient handling of e.g. magnetic stirrers placed under vents

STIRRING BLOCK THERMOSTAT 15.57

Ideally suited e.g. for applications in combinatorial chemistry, for biological applications, for quality control in chemical and waste water technology, for viscosity measurements, and for testing the solution behaviour of acrylics.

- Wear-free inductive drive
- Remote-controlled by separately available **TELEMODUL 40 CT** control unit
- 15 stirring points with block bores \varnothing 57,5 mm / 48 mm depth
- Heating block made of massive aluminium
- Heating block temperatures up to +200 °C
- Minimal temperature gradient inside the stirring vessels by omnidirectional heating (block bores)
- PTFE-coated heating plate - dirt-repellent and non-corroding
- Easy-to-use dry bath
- Speeds of 100 to 2.000 rpm
- Stirring volume up to 150 ml
- Suitable for 15 x 100 ml laboratory flasks or 150 ml glass beakers
- May be deployed directly under fume hoods
- Two threaded bore holes (M10) for support rods integrated in frame corners
- Customized block bore diameters (\varnothing 16 to 57,5 mm) and block bore depths on request
- Includes **TELEMODUL 40 CT** control unit (stirring power 40 watts)

For technical specifications and a functional description of the **TELEMODUL 40 CT** control unit, please refer to page 34.



STIRRING BLOCK THERMOSTAT 15.71

Identical with **STIRRING BLOCK THERMOSTAT 15.57** with regard to features and technology, but with:

- 15 block bores Ø 71 mm / 78 mm depth
- Suitable for 15 x 250 ml laboratory flasks or 400 ml glass beakers
- Customized block bore diameters (Ø 58 to 76 mm) and block bore depths on request

For technical specifications and a functional description of the **TELEMODUL 40 CT** control unit, please refer to page 34.



+++ ACCESSORIES

REDUCING SLEEVES, naturally anodized

- Custom adaptation of existing bores to stirring vessels with smaller diameters available on request

PT 100 TEMPERATURE SENSOR (external)

- For direct control of the liquid temperature
- Stainless steel frame
- For **TELEMODUL 40 CT** control unit

SUPPORT ROD

KOMET STIRRING BARS

For further information see page 37



TECHNICAL DATA

	STIRRING BLOCK THERMOSTAT 15.57	STIRRING BLOCK THERMOSTAT 15.71
Number of stirring points	15	15
Distance between stirring points (mm)	65	84
Block bores Ø / D (mm)	57,5 / 48	71 / 78
Stirring volume per stirring point (ml)	1 - 150	1 - 400
Stirring power (W)	12 - 40	12 - 40
Speed range (1/min)	100 - 2.000	100 - 2.000
Dimensions WxDxH (mm)	295 x 445 x 110	345 x 525 x 140
Weight (Stirring drive) (kg)	approx. 20	approx. 25
Temperature range (°C)	up to +200	up to +200
Heating power (W)	1.100	1.100
Operating voltage (VAC)	115 or 230	115 or 230
Construction		
Material heating block	aluminium / PTFE	aluminium / PTFE
Protection acc. to DIN 40050	IP 31	IP 31
Ambient conditions		
Operating temperature (°C)	-10 up to +56 at 80% relative humidity	-10 up to +56 at 80% relative humidity
Control unit		
Operation	remote-controlled	remote-controlled
Includes TELEMODUL	40 CT	40 CT
Supply voltage / frequency	100 - 240 VAC / 50 - 60 Hz	100 - 240 VAC / 50 - 60 Hz
Order No.	61580 (115 V = 61580 U)	61780 (115 V = 61780 U)

REMOTE-CONTROLLED MAGNETIC STIRRERS MULTIPLE POINT, HEATABLE

Remote-controlled magnetic stirrers

have the following advantages:

- Extraordinary mechanical, physical and chemical resistance
- Immersible, can be used directly in the water bath
- Highly heat-resistant - up to +50 °C directly in the water bath, up to +95 °C directly in the water bath (special), and up to +200 °C in air (on request)
- Choice of 2 control units for different types of usage (see description of features and options on pages 32 and 33)
- Great range of features depending on the specifications of the control unit
- Ideally suited for system integration
- Ergonomic and convenient handling of e.g. submerged magnetic stirrers
- Safe low-voltage device

STIRRING BATH THERMOSTAT 06.20 STIRRING BATH THERMOSTAT 15.20 STIRRING BATH THERMOSTAT 60.20

Ideal for growing bacteria cultures.

Complete systems include:

- stirring drive **TELESYSTEM 6, 15** or **60**
- control unit **TELEMODUL 20 C**
- **TRANSPARENT BATH MOUNT**
- **JULABO EC immersible thermostat** with circulation pump and digital temperature display (for features and specifications see page 42)
- Wear-free inductive drive
- Remote-controlled by separate control unit
- 6, 15 or 60 stirring points
- The magnetic stirrers can be placed directly in the water bath up to +50 °C (standard); for more demanding applications up to +95 °C directly in the water bath (on request) are possible
Note: If the temperature of the liquid bath exceeds +95 °C, the magnetic stirrer must be placed below the bath.
- Suitable for 6 x 1.000 ml Erlenmeyer flasks
- Ideally suited for different vessels
- For precision temperature control (+/- 0,1 K)
- Includes **TELEMODUL 20 C** control unit for simple everyday mixing tasks
- Cooling equipment on request

For technical specifications and a functional description of the **TELEMODUL 20 C** control unit, please refer to page 32.

Examples of nomenclature for STIRRING BATH THERMOSTATS

STIRRING BATH THERMOSTAT 15.20 is equipped with a 15-point **TELESYSTEM** magnetic stirrer and a **TELEMODUL 20 C** control unit (20 watts stirring power).



STIRRING BATH THERMOSTAT 06.40 STIRRING BATH THERMOSTAT 15.40 STIRRING BATH THERMOSTAT 60.40

Identical with **STIRRING BATH THERMOSTAT 06.20**, **15.20** and **60.20** with regard to dimensions, features, and technology, but with:

- extra powerful **TELEMODUL 40 C** control unit for sophisticated stirring tasks, with a wide range of available speeds and larger stirring volumes

For technical specifications and a functional description of the **TELEMODUL 40 C** control unit, please refer to page 33.



ACCESSORIES

TRANSPARENT BATH MOUNT

STAINLESS STEEL BATH MOUNT

JULABO immersible thermostat

EXTENSION CORD for stirring drive

KOMET STIRRING BARS

For further information see page 37



HINT

For bath temperatures above +60 °C, the stainless steel bath mount must be used.

TECHNICAL DATA

	STIRRING BATH THERMOSTAT			STIRRING BATH THERMOSTAT		
	06.20	15.20	60.20	06.40	15.40	60.40
Number of stirring points	6	15	60	6	15	60
Distance between stirring points (mm)	130	65	32,5	130	65	32,5
Stirring volume per stirring point (ml)	1 - 800	1 - 500	1 - 10	1 - 1.500	1 - 1.000	1 - 50
Stirring power (W)		5 - 20 (4 levels)			4 - 40 (10 levels)	
Speed range (1/min)		130 - 1.400			100 - 2.000	
Dimensions, bath WxDxH (mm)		330 x 610 x 185			330 x 610 x 185	
Weight (kg)		approx. 20			approx. 20	
Heating power (W)		2.000			2.000	
Operating voltage, thermostat (VAC)		115 or 230			115 or 230	
Construction						
Housing material stirring drive	stainless steel			stainless steel		
Protection acc. to DIN 40050	IP 68 (stirring drive)			IP 68 (stirring drive)		
Ambient conditions						
Operating temperature (°C)	0 up to +40 at 80% relative humidity			0 up to +40 at 80% relative humidity		
Operating bath temperature (°C)	0 up to +50 (stirring drive in bath) 0 up to +60 (stirring drive under bath)			0 up to +50 (stirring drive in bath) 0 up to +60 (stirring drive under bath)		
Control unit						
Operation	remote-controlled			remote-controlled		
Includes TELEMODUL	20 C	20 C	20 C	40 C	40 C	40 C
Supply voltage / frequency	100 - 240 VAC / 50 - 60 Hz			100 - 240 VAC / 50 - 60 Hz		
Order No.	70620	71520	76020	70640	71540	76040
	(115 V = 70620 U)	(115 V = 71520 U)	(115 V = 76020 U)	(115 V = 70640 U)	(115 V = 71540 U)	(115 V = 76040 U)

DIRECT-CONTROLLED MAGNETIC STIRRERS SINGLE-POINT

Direct-controlled magnetic stirrers

have the following advantages:

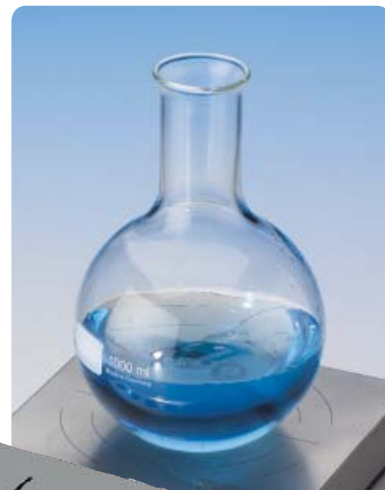
- Simple operation
- Inexpensive
- Space economy
- Safe low-voltage device

HINT

The suitability of direct-controlled magnetic stirrers for use in incubators is limited, because the stirring power cannot be reduced. In addition, the integrated electronics heat the magnetic stirrer additionally.

MONO DIRECT

- Wear-free inductive drive
- Direct-controlled
- Speeds of 130 to 1.000 rpm
- Automatic start-up for safe acceleration of the magnetic stirrer
- Stirring volume up to 3.000 ml
- Powder-coated stainless steel housing, grey
- Power supply with pre-selectable stirring power to minimize heat radiation
- LED lamp
- Inexpensive



COMPACT DIRECT

- Wear-free inductive drive
- Direct-controlled
- Speeds of 130 to 1.000 rpm
- Automatic start-up for safe acceleration of the magnetic stirrer
- Stirring volume up to 1.000 ml
- Sealed in a resistant stainless steel housing, thus suitable for use under conditions of high ambient humidity and in the presence of aggressive media
- Can be cleaned under running water
- Power supply with pre-selectable stirring power to minimize heat radiation at the point of use
- Sturdily built, convenient size

MAXI DIRECT

- Wear-free inductive drive, effectiveness increased by microprocessor control
- Direct-controlled
- Extremely wide speed range of 80 to 2.000 rpm
- Stirring bars turn evenly and without jerking, even at low speeds
- Digital display to facilitate exact speed settings
- Automatic start-up for safe acceleration of the magnetic stirrer
- Four different power settings (5/10/15/20 watts), with power for larger quantities and more viscous liquids and reduced power for long-term operation, largely without heat generation
- Memory function stores the most recent settings, even when the device is taken off mains for a longer period of time
- Stirring volume up to 5.000 ml
- Far-reaching magnetic field, suitable for highly viscous media
- Large working surface
- Hermetically sealed stainless steel housing, making it inaccessible to water or dust; easy-to-clean housing with no cracks, joints or sharp edges
- Can be cleaned under running water
- Indestructible
- Universal power supply for 100 - 240 VAC / 50 - 60 Hz

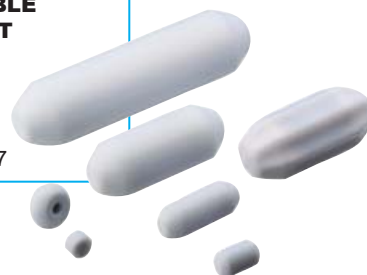


ACCESSORIES

12 V CAR CONNECTION CABLE
(**MONO DIRECT** and **COMPACT DIRECT** only)

KOMET STIRRING BARS

For further information see page 37



TECHNICAL DATA

	MONO DIRECT	COMPACT DIRECT	MAXI DIRECT
Number of stirring points	1	1	1
Stirring volume per stirring point (ml)	1 - 3.000	1 - 3.000	1 - 5.000
Stirring power (W)	1 / 5	1 / 5	5 / 10 / 15 / 20
Speed range (1/min)	130 - 1.000	130 - 1.000	80 - 2.000
Dimensions WxDxH (mm)	180 x 215 x 35	120 x 120 x 35	180 x 215 x 35
Weight (stirring drive) (kg)	1,4	1,2	2,5
Operating voltage (VDC)	8 - 12	8 - 12	24
Construction			
Housing material stirring drive	stainless steel, powder coated	stainless steel	stainless steel
Protection acc. to DIN 40050	IP 32	IP 64	IP 64
Ambient conditions			
Operating temperature (°C)	-10 up to +40 at 95% relative humidity	-10 up to +40 at 95% relative humidity	-10 up to +40 at 95% relative humidity
Operation	direct-controlled	direct-controlled	direct-controlled
Includes power unit	power supply unit	power supply unit	table power supply unit
Supply voltage / frequency	115 or 230 VAC / 50 - 60 Hz	115 or 230 VAC / 50 - 60 Hz	100 - 240 VAC / 50 - 60 Hz
Order No.	30110 (115 V = 30110 U)	36102 (115 V = 36102 U)	30125 (115 V = 30125 U)

REMOTE-CONTROLLED MAGNETIC STIRRERS SINGLE-POINT

Remote-controlled magnetic stirrers

have the following advantages:

- Extraordinary mechanical, physical and chemical resistance
- Immersible, can be used directly in the water bath
- Highly heat-resistant - up to +50 °C directly in the water bath, up to +95 °C directly in the water bath (special), and up to +200 °C in air (on request)
- Choice of 3 control units for different types of usage (see functional description on pages 32 and 33)
- Great range of features depending on the specifications of the control unit
- Ideally suited for system integration
- Ergonomic and convenient handling of e.g. submerged magnetic stirrers
- Safe low-voltage device

Examples of nomenclature

The designs of the various models of **single-point stirring drives** are identical in principle. The functions of remote-controlled Magnetic Stirrers and their power and speed depend on the control units (see the control unit description and list of functions starting on page 32).

The remote-controlled magnetic stirrers shown in this catalogue are distinguished only by the type of control unit that is included. The following example should help illustrate this:

MINI:
Magnetic Stirrer
MINI with control unit
TELEMODUL
(7 Watt stirring power)

MINI 20:
Magnetic Stirrer
MINI with control unit
TELEMODUL 20 C
(20 Watt stirring power)



MINI · MINI 20

- Wear-free inductive drive
- Remote-controlled by separate control unit
- No larger than a one-cent coin
- Only 5 mm high
- Ideally suited for cuvettes 12 x 12 mm
- Ideal for integration in analytical devices, cuvette holders and photometers
- OEM versions on request
- Highly flexible foil cable, 0.3 mm thick
- **MINI 20** is recommended for greater distances between the magnetic stirrer and the stirring vessel
- Includes **TELEMODUL** control unit (stirring power 7 watts) or **TELEMODUL 20 C** control unit (stirring power 20 watts)

For technical specifications and a functional description of the **TELEMODUL** control unit, please refer to page 32.



MICRO · MICRO 20

- Wear-free inductive drive
- Remote-controlled by separate control unit
- No larger than a matchbox
- Only 16 mm in height
- Hermetically sealed in a resistant stainless steel housing, thus suitable for use under conditions of high ambient humidity or in aggressive media; impermeable to microorganisms
- Can be cleaned under running water
- Ideally suited for operation directly in water baths (up to +95 °C)
- Version for operation at up to +200 °C in air available (on request)
- Integrated M4-threaded bore for attaching the magnetic stirrer at the bottom of the housing
- Sturdy and indestructible
- Includes **TELEMODUL** control unit (stirring power 7 watts) or **TELEMODUL 20 C** control unit (stirring power 20 watts)

For technical specifications and a functional description of the **TELEMODUL** control unit, please refer to page 32.



Original size

+++ ACCESSORIES

BENCHTOP DISTRIBUTOR 4-FOLD

BENCHTOP DISTRIBUTOR 8-FOLD

EXTENSION CORD for stirring drive

KOMET STIRRING BARS

For further information see page 37



TECHNICAL DATA

	MINI	MINI 20	MICRO	MICRO 20
Number of stirring points		1		1
Stirring volume per stirring point (ml)		0,1 - 5	1 - 800	1 - 1.000
Stirring power (W)	0,10	0,05 / 0,1 / 0,15 / 0,20	3	2 / 4 / 6 / 8
Speed range (1/min)	130 - 1.000	130 - 1.400	130 - 1.000	130 - 1.400
Dimensions WxDxH (mm)		12 x 12 x 5		48 x 48 x 16
Weight (kg)		0,02		0,2
Operating voltage (VDC)	12	20	12	20
Construction				
Housing material		plastic		stainless steel
Protection acc. to DIN 40050		IP 68		IP 68
Ambient conditions				
Operating temperature (°C)		-10 up to +56 at 100% relative humidity		-10 up to +120 in dry air
Operating temperature in water (°C)		-		0 up to +95 (stirring drive in bath)
Control unit				
Operation		remote-controlled		remote-controlled
Includes TELEMODUL	Standard	20 C	Standard	20 C
Supply voltage / frequency	115 or 230 VAC / 50 - 60 Hz	100 - 240 VAC / 50 - 60 Hz	115 or 230 VAC / 50 - 60 Hz	100 - 240 VAC / 50 - 60 Hz
Order No.	40163 (115 V = 40163 U)	40165 (115 V = 40165 U)	40107 (115 V = 40107 U)	40120 (115 V = 40120 U)

REMOTE-CONTROLLED MAGNETIC STIRRERS SINGLE-POINT

Remote-controlled magnetic stirrers

have the following advantages:

- Extraordinary mechanical, physical and chemical resistance
- Immersible, can be used directly in the water bath
- Highly heat-resistant - up to +50 °C directly in the water bath, up to +95 °C directly in the water bath (special), and up to +200 °C in air (on request)
- Choice of 3 control units for different types of usage (see functional description on pages 32 and 33)
- Great range of features depending on the specifications of the control unit
- Ideally suited for system integration
- Ergonomic and convenient handling of e.g. submerged magnetic stirrers
- Safe low-voltage device

COMPACT · COMPACT 20

- Wear-free inductive drive
- Remote-controlled by separate control unit
- Hermetically sealed in a resistant stainless steel housing, thus suitable for use under conditions of high ambient humidity or in aggressive media; impermeable to microorganisms
- Can be cleaned under running water
- Ideally suited for operation directly in water baths (up to +50 °C)
- Versions for operation directly in water baths (up to +50 °C) or at up to +200 °C in air are optionally available
- Suitable for use in incubators (**COMPACT 20** only)
- Sturdy and indestructible
- Compact size
- Includes **TELEMODUL** control unit (stirring power 7 watts) or **TELEMODUL 20 C** control unit (stirring power 20 watts)

For technical specifications and a functional description of the **TELEMODUL** control unit, please refer to page 32.



MAXI · MAXI 20 · MAXI 40

- Wear-free inductive drive
- Remote-controlled by separate control unit
- Hermetically sealed in a resistant stainless steel housing, thus suitable for use under conditions of high ambient humidity or in aggressive media; impermeable to microorganisms
- Can be cleaned under running water
- Ideally suited for operation directly in water baths (up to +50 °C)
- Versions for operation directly in water baths (up to +50 °C) or at up to +200 °C in air are optionally available
- Memory function stores the most recent settings, even when the device is taken off mains for a longer period of time (**MAXI 20** and **MAXI 40** only)
- Ideally suited for use in incubators (**MAXI 40** only)
- Sturdy and indestructible
- Large working surface
- Far-reaching magnetic field, particularly suitable for highly viscous media (**MAXI 20** and **MAXI 40**)
- Includes **TELEMODUL** control unit (stirring power 7 watts) or **TELEMODUL 20 C** control unit (stirring power 20 watts) or **TELEMODUL 40 C** control unit (stirring power 40 watts)

For technical specifications and a functional description of the **TELEMODUL** control unit, please refer to page 32.



ACCESSORIES

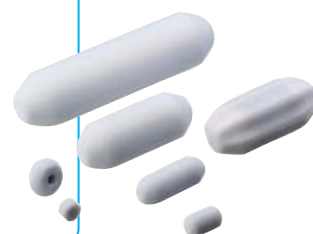
BENCHTOP DISTRIBUTOR 4-FOLD

BENCHTOP DISTRIBUTOR 8-FOLD

EXTENSION CORD for stirring drive

KOMET STIRRING BARS

For further information see page 37



TECHNICAL DATA

	COMPACT	COMPACT 20	MAXI	MAXI 20	MAXI 40
Number of stirring points	1		1		
Stirring volume per stirring point (ml)	1 - 1.000	1 - 1.500	250 - 2.000	250 - 4.000	250 - 5.000
Stirring power (W)	5	3 / 6 / 9 / 12	6	4,5 / 9 / 13,5 / 18	3 - 36
Speed range (1/min)	130 - 1.000	130 - 1.400	130 - 1.000	130 - 1.400	100 - 2.000
Dimensions WxDxH (mm)	120 x 120 x 35		180 x 180 x 35		
Weight (kg)	1		2,3		
Operating voltage (VDC)	12	20	12	20	36
Construction					
Housing material stirring drive	stainless steel		stainless steel		
Protection acc. to DIN 40050	IP 68		IP 68		
Ambient conditions					
Operating temperature (°C)	-10 up to +56 at 100% relative humidity		-10 up to +56 at 100% relative humidity		
Operating temperature in water (°C)	0 up to +50		0 up to +50		
Control unit					
Operation	remote-controlled		remote-controlled		
Includes TELEMODUL	Standard	20 C	Standard	20 C	40 C
Supply voltage / frequency	115 or 230 VAC / 50 - 60 Hz 100 - 240 VAC / 50 - 60 Hz		115 or 230 VAC / 50 - 60 Hz 100 - 240 VAC / 50 - 60 Hz		
Order No.	40116 (115 V = 40116 U)	40126 (115 V = 40126 U)	40118 (115 V = 40118 U)	40130 (115 V = 40130 U)	40175 (115 V = 40175 U)

DIRECT-CONTROLLED MAGNETIC STIRRERS MULTIPLE POINT

Direct-controlled magnetic stirrers

have the following advantages:

- Simple operation
- Inexpensive
- Space economy
- Safe low-voltage device

POLY 15

Ideally suited for mass screenings and for biological applications

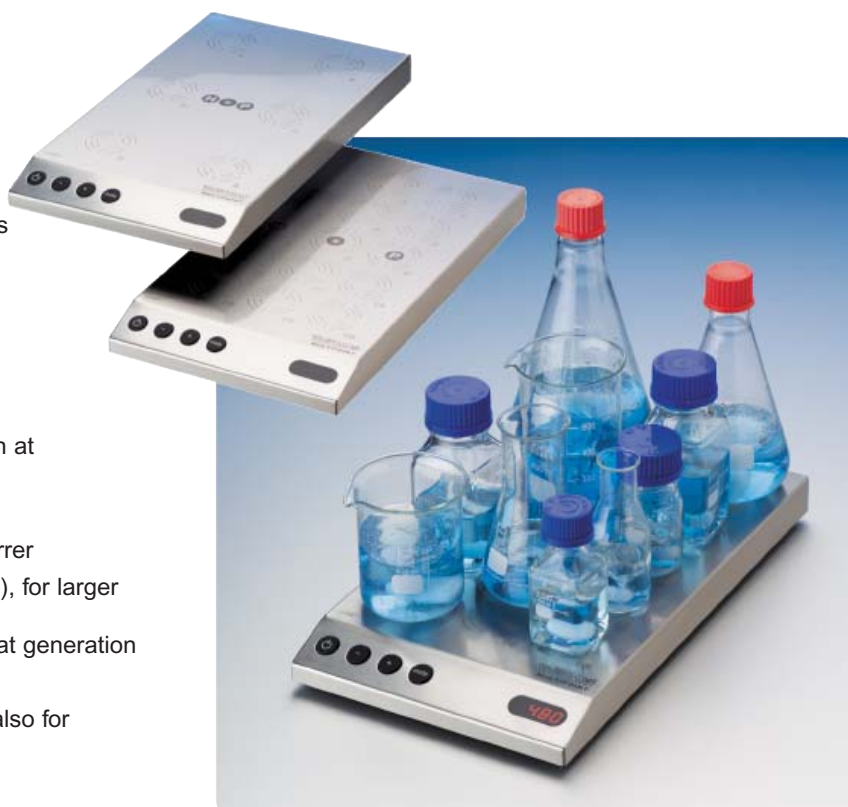
- Wear-free inductive drive, effectiveness increased by microprocessor control
- Direct-controlled
- 15 stirring points
- Speeds of 130 to 990 rpm
- Digital display to facilitate exact speed settings
- Automatic start-up for safe acceleration of the magnetic stirrer
- Stirring volume up to 2.000 ml
- Suitable for 15 x 250 ml glass beakers or 6 x 1.000 ml Erlenmeyer flasks
- Large, easy-to-clean working surface
- Powder-coated stainless steel housing, grey
- Memory function stores the recent settings, even when the device is taken off mains for a period of time
- Inexpensive



MULTIPOINT 6

Ideally suited for chemical, biotechnological and medical applications as well as for mass screenings

- Wear-free inductive drive, increased effectiveness by microprocessor control
- Direct-controlled
- 6 stirring points
- Extremely wide speed range of 80 to 2.000 rpm
- Stirring bars turn evenly and without jerking, even at low speeds
- Digital display to facilitate exact speed settings
- Automatic start-up for safe acceleration of the stirrer
- Four different power settings (25/50/75/100 watts), for larger quantities and more viscous liquids and reduced power for long-term operation, largely without heat generation
- Stirring volume up to 3.000 ml
- Suitable for 6 x 1.000 ml Erlenmeyer flasks, but also for larger single receptacles
- Large, easy-to-clean working surface
- Hermetically sealed stainless steel housing, making it inaccessible to water or dust; easy-to-clean housing with no cracks, joints or sharp edges
- A memory function stores the most recent settings, even when the device is taken off mains for a longer period of time
- Indestructible



ACCESSORIES

EXTENSION CORD for stirring drive

KOMET STIRRING BARS

For further information see page 37



MULTIPOINT 15

Identical with **MULTIPOINT 6** with regard to dimensions, features, and technology, but with:

- 15 stirring points
- Suitable for 15 x 250 ml glass beakers but also 6 x 1.000 ml Erlenmeyer flasks

TECHNICAL DATA

	POLY 15	MULTIPOINT 6	MULTIPOINT 15
Number of stirring points	15	6	15
Distance between stirring points (mm)	65	130	65
Stirring volume per stirring point (ml)	1 - 800	1 - 3.000	1 - 3.000
Stirring power (W)	10	5 / 10 / 15 / 20 (4 levels)	5 / 10 / 15 / 20 (4 levels)
Speed range (1/min)	130 - 990	80 - 2.000	80 - 2.000
Dimensions WxDxH (mm)	240 x 420 x 35	240 x 420 x 35	240 x 420 x 35
Weight (stirring drive) (kg)	6	7,5	7,5
Operating voltage (VDC)	24	24	24
Construction			
Material stirring drive	stainless steel, powder coated	stainless steel	stainless steel
Protection acc. to DIN 40050	IP 32	IP 64	IP 64
Ambient conditions			
Operating temperature (°C)	-10 up to +40 at 95% relative humidity	-10 up to +40 at 95% relative humidity	-10 up to +40 at 95% relative humidity
Operation			
Includes power supply unit	direct-controlled	direct-controlled	direct-controlled
Supply voltage / frequency	table power supply unit	table power supply unit	table power supply unit
	100 - 240 VAC / 50 - 60 Hz	100 - 240 VAC / 50 - 60 Hz	100 - 240 VAC / 50 - 60 Hz
Order No.	31505 (115 V = 31505 U)	30625 (115 V = 30625 U)	31525 (115 V = 31525 U)

TELESYSTEM 06.20
TELESYSTEM 15.20
TELESYSTEM 60.20

Identical with **TELESYSTEM 06.07, 15.07, 60.07** with regard to dimensions, features, and technology, but:

- Inclusive control unit **TELEMODUL 20 C** (20 watts stirring power)
- Extended speeds of 130 to 1:400 rpm
- Up to 1.500 ml stirring volume
- Suitable for use in incubators and climatic chambers, since the stirring power can be reduced to 5 watts (25%), so that the magnetic stirrer gives off very little heat.



For technical specifications and a functional description of the **TELEMODUL** control unit, please refer to page 32.



ACCESSORIES

EXTENSION CORD for stirring drive

KOMET STIRRING BARS

TRANSPARENT BATH MOUNT

STAINLESS STEEL BATH MOUNT

TEST TUBE RACK

For further information see page 37

TELESYSTEM 06.40
TELESYSTEM 15.40
TELESYSTEM 60.40

Identical with **TELESYSTEM 06.07, 15.07, 60.07** with regard to dimensions, features, and technology, but:

- Includes **TELEMODUL 40 C** control unit (stirring power 40 watts)
- Wide speed range of 100 to 2.000 rpm
- Up to 3.000 ml stirring volume
- Ideally suited for use in **incubators and climatic chambers**, as the stirring power can be reduced to 4 watts (10%). This ensures an **extremely low heating up** of the magnetic stirrer.

TECHNICAL DATA

	TELESYSTEM			TELESYSTEM			TELESYSTEM		
	06.07	15.07	60.07	06.20	15.20	60.20	06.40	15.40	60.40
Number of stirring points	6	15	60	6	15	60	6	15	60
Distance between stirring points (mm)	130	65	32,5	130	65	32,5	130	65	32,5
Stirring volume per stirring point (ml)	1 - 800	1 - 500	0,1 - 10	1 - 1.500	1 - 1.000	0,1 - 50	1 - 2.000	1 - 1.200	0,1 - 100
Stirring power (W)	7			5 / 10 / 15 / 20 (4 levels)			4 - 40 (10 levels)		
Speed range (1/min)	130 - 1.000			130 - 1.400			100 - 2.000		
Dimensions WxDxH (mm)	240 x 420 x 35			240 x 420 x 35			240 x 420 x 35		
Weight (stirring drive) (kg)	7,5			7,5			8		
Operating voltage (VDC)	12			20			36		
Construction									
Material stirring drive	stainless steel			stainless steel			stainless steel		
Protection acc. to DIN 40050	IP 68			IP 68			IP 68		
Ambient conditions									
Operating temperature (°C)	-10 up to +56 at 100% relative humidity			-10 up to +56 at 100% relative humidity			-10 up to +56 at 100% relative humidity		
Operating temperature in water (°C)	0 up to +50			0 up to +50			0 up to +50		
Control unit									
Operation	remote-controlled			remote-controlled			remote-controlled		
Includes TELEMODUL	Standard			20 C			40 C		
Supply voltage / frequency	115 or 230 VAC / 50 - 60 Hz			100 - 240 VAC / 50 - 60 Hz			100 - 240 VAC / 50 - 60 Hz		
Order No.	40607	41507	46007	40620	41520	46020	40640	41540	46040
	(115 V=	(115 V=	(115 =	(115 =	(115 V =	(115 V =	(115 V =	(115 V =	(115 V =
	40607 U)	41507 U)	46007 U)	40620 U)	41520 U)	46020 U)	40640 U)	41540 U)	46040 U)

DIRECT-CONTROLLED MAGNETIC STIRRERS, SINGLE-POINT FOR VOLUMES UP TO 150 LITRES

Direct-controlled magnetic stirrers

have the following advantages:

- Simple operation
- Inexpensive
- Space economy
- Safe low-voltage device

+++ ACCESSORIES

KOMET STIRRING BARS

STIRRING BAR REMOVER, LARGE

For further information see page 37



MOBIL DIRECT

Ideally suited for use in pilot plants, for thick-bottomed stirring vessels, for round flasks and for double-walled vessels

- Very powerful magnetic stirrer for stirring volumes up to 150 litres
- Low-wear disc motor
- Ultra-flat design
- Direct-controlled
- Speeds of 100 to 1.000 rpm
- Stirring power 40 watts
- Automatic start-up for safe acceleration of the magnetic stirrer
- Quick-stop function stops drive within 3 seconds without after-run, for improved safety and to prevent breakage
- Large working surface
- Far-reaching magnetic field, particularly suitable for highly viscous media
- High-energy samarium-cobalt (SmCo) actuation magnet firmly connected to stirring bar, works over distances of up to 60 mm
- Sealed in a resistant stainless steel housing, thus suitable for use under conditions of high ambient humidity
- Can be cleaned under running water



REMOTE-CONTROLLED MAGNETIC STIRRERS, SINGLE-POINT FOR VOLUMES UP TO 150 LITRES

MOBIL WITH CENTRE HOLE

Powerful magnetic stirrer for bioreactors with a capacity of up to 150 litres with a draining hole at the bottom

- Centre hole for vessels with draining hole
- No stirring shaft, no high-maintenance shaft exit
- Sterile stirring, no contamination
- No vibrations
- Up to 150 litres, dependent on the control unit
- Additional details and options on request

Remote-controlled magnetic stirrers

have the following advantages:

- Choice of 2 control units for different types of usage (see functional description on page 35)
- Great range of features depending on the specifications of the control unit
- Ideally suited for integration in pilot plants
- Ergonomic and convenient handling of e.g. submerged magnetic stirrers
- Safe low-voltage device



+++ ACCESSORIES

KOMET STIRRING BARS

STIRRING BAR REMOVER

EXTENSION CORD for MOBIL

For further information see page 37



HINT

Please order control unit **TELEMODUL 40 M** Order No. 90540 (115 V = 90540 U) or **TELEMODUL 80 M** Order No. 90580 (115 V = 90580 U) separately. For further information see page 35.

TECHNICAL DATA

	MOBIL DIRECT	MOBIL WITH CENTRE HOLE	
		Ø 50	Ø 80
Number of stirring points	1	1	
Stirring volume per stirring point (l)	1 - 150	1 - 150	1 - 50
Stirring power (W)	40	40 or 80	
Speed range (1/min)	100 - 1.000	100 - 1.000	
Maximum torque (shaft) (Ncm)	30	15 (30 with TELEMODUL 80 M)	
Dimensions WxDxH (mm)	330 x 330 x 80	180 x 425 x 75	200 x 425 x 75
Weight (stirring drive) (kg)	16	8	12
Overheating protection (°C)	75	75	
Operating voltage (VDC)	24 VAC	24	
Construction			
Housing material	stainless steel	aluminium	
Protection acc. to DIN 40050	IP 64	IP 42	
Control cable (m)	-	2	
Ambient conditions			
Ambient temperature (°C)	-10 up to +40 at 95% relative humidity	-10 up to +40 in dry air	
Supply unit / Control unit			
Operation	direct-controlled	remote-controlled	
	incl. table power supply unit 24 VAC	order separately	
Supply voltage / frequency	115 or 230 VAC / 50 - 60 Hz	115 or 230 VAC / 50 - 60 Hz	
Order No.	36103 (115 V = 36103 U)	55001	58001

REMOTE-CONTROLLED MAGNETIC STIRRERS, SINGLE-POINT FOR VOLUMES UP TO 600 LITRES

Remote-controlled magnetic stirrers

have the following advantages:

- Extraordinary mechanical, physical and chemical resistance
- Choice of 2 control units for different types of usage (see functional description on page 35)
- Great range of features, depending on the specifications of the control units
- Ideally suited for system integration
- Ergonomic and convenient handling of e.g. submerged magnetic stirrers
- Safe low-voltage device

MOBIL 200

Ideally suited for use in pilot plants, for thick-bottomed stirring vessels, for round flasks and for double-walled vessels

- Very powerful magnetic stirrer for stirring volumes up to 200 litres
- Low-wear disc motor
- Ultra-flat design, easy to integrate in process units
- Remote-controlled
- Speeds of 100 to 1.000 rpm (control unit)
- Stirring power 40 watts or 80 watts depending on the type of control unit used
- Continuously adjustable automatic start-up for safe acceleration of the magnetic stirrer (control unit)
- Quick-stop function stops drive within 3 seconds without after-run, for improved safety and to prevent breakage
- Far-reaching magnetic field, particularly suitable for highly viscous media
- High-energy samarium-cobalt (SmCo) actuation magnet, for strong coupling to stirring bar, stir even at distances of up to 60 mm
- Sealed in a resistant stainless steel housing, thus suitable for use under conditions of high ambient humidity
- Can be cleaned under running water
- Overload protection turns off magnetic stirrer before it overheats



+ HINT

Please order control unit **TELEMODUL 40 M** Order No. 90540 (115 V = 90540 U) or **TELEMODUL 80 M** Order No. 90580 (115 V = 90580 U) separately.
For further information see page 35.



MOBIL 600

Identical with **MOBIL 200** in design, function and features, but:

- Extremely powerful magnetic stirrer for stirring volumes up to 600 litres
- Large working surface



ACCESSORIES

STAND, with rollers, anchors for magnetic stirrer, and massive frame for stirring vessel (**MOBIL 200** only)

SCREW-FASTENED MOUNT for attaching the control unit to the stand (**MOBIL 200** only)

KOMET STIRRING BARS

STIRRING BAR REMOVER

EXTENSION CORD for MOBIL

For further information see page 37



HINT

Please order control unit **TELEMODUL 40 M** Order No. 90540 (115 V = 90540 U) or **TELEMODUL 80 M** Order No. 90580 (115 V = 90580 U) separately. For further information see page 35.

TECHNICAL DATA

TELEMODUL	MOBIL 200		MOBIL 600	
	40 M	80 M	40 M	80 M
Number of stirring points	1		1	
Stirring volume per stirring point (l)	1 - 150	1 - 200	1 - 450	1 - 600
Stirring power (W)	40	80	40	80
Speed range (1/min)	100 - 1.000		100 - 1.000	
Maximum torque (shaft) (Ncm)	30	50	30	50
Dimensions WxDxH (mm)	180 x 180 x 80		330 x 330 x 80	
Weight (stirring drive) (kg)	6		16	
Overheating protection (°C)	75		75	
Operating voltage (VDC)	24		24	
Construction				
Housing material	stainless steel		stainless steel	
Protection acc. to DIN 40050	IP 65		IP 65	
Control cable (m)	2		2	
Ambient conditions				
Ambient temperature (°C)	-10 up to +56 at 100% relative humidity		-10 up to +56 at 100% relative humidity	
Control unit				
Operation	remote-controlled		remote-controlled	
Supply voltage / frequency	115 or 230 VAC / 50 - 60 Hz		115 or 230 VAC / 50 - 60 Hz	
Order No.	56101		56102	

DIRECT-CONTROLLED MAGNETIC STIRRERS FOR CELL SUSPENSIONS AND TISSUE CULTURES

Direct-controlled magnetic stirrers

have the following advantages:

- Simple operation
- Inexpensive
- Space economy
- Safe low-voltage device



ACCESSORIES

CELL CULTURE FLASKS

12 V CAR CONNECTION CABLE
(only **BIOSYSTEM DIRECT**)

For further information see page 44

BIOSYSTEM DIRECT

For mixing microcarrier cultures, culture broths, and cell suspensions without destroying the cells

- Stirring bars turn very evenly and without jerking
- Direct-controlled
- Speeds of 5 to 120 rpm
- Automatic start-up for safe acceleration of the magnetic stirrer
- Stirring volume 25 to 5.000 ml
- Compact, flat design
- Sealed in a resistant stainless steel housing, thus suitable for use under conditions of high ambient humidity
- Impermeable to microorganisms; meets the hygienic requirements of the German safety regulations for genetic engineering
- Can be cleaned under running water
- Inexpensive



BIOSYSTEM 4 DIRECT

Identical with **BIOSYSTEM DIRECT** with regard to features, technology and applications, but with:

- 4 synchronized stirring points, rectangular arrangement
- Stirring volume up to 4 x 2.000 ml

+ HINT

The suitability of direct-controlled magnetic stirrers for use in incubators is limited, because the stirring power cannot be reduced. In addition, the integrated electronics heat the magnetic stirrer additionally.



REMOTE-CONTROLLED MAGNETIC STIRRERS FOR CELL SUSPENSIONS AND TISSUE CULTURES

BIOSYSTEM

For mixing microcarrier cultures, culture broths, and cell suspensions without destroying the cells

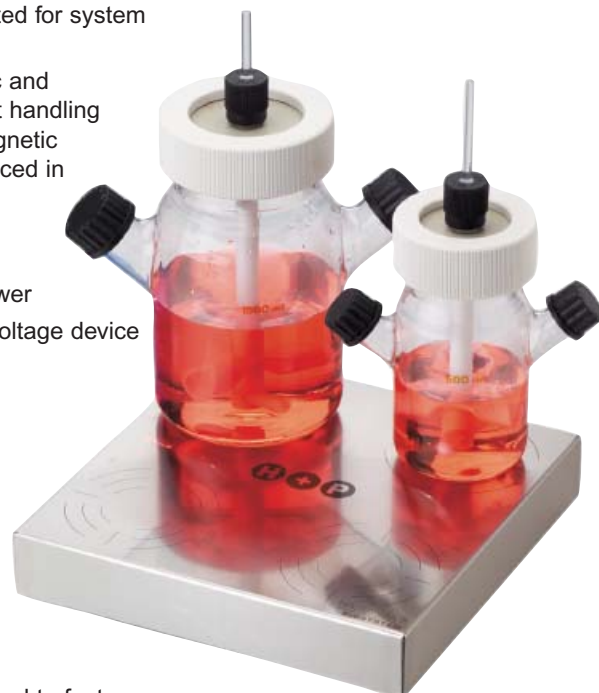
- Stirring bars turn very evenly and without jerking
- Remote-controlled by separately available **BIOMODUL 40 B** control unit
- Ideally suited for long-term heatless use even in CO₂ incubators
- Speeds of 5 to 1.000 rpm
- Automatic start-up for safe acceleration of the stirring bar
- Stirring volume 25 to 20.000 ml
- Compact, flat design
- Sealed in a resistant stainless steel housing, thus suitable for use under conditions of high ambient humidity or directly in temperature-controlled water baths
- Impermeable to microorganisms; meets the requirements of the German safety regulations for genetic engineering
- Can be cleaned under running water
- Two drives may be synchronized (see data on **BIOMODUL 40 B** control unit on page 36)

For technical specifications and a functional description of the **BIOMODUL 40 B** control unit please refer to page 36.

Remote-controlled magnetic stirrers

have the following advantages:

- Extraordinary mechanical, physical and chemical resistance
- Immersible, suited for operation direct in water baths
- Wide range of features
- Ideally suited for system integration
- Ergonomic and convenient handling of e.g. magnetic stirrers placed in incubators
- Continuous adjustable stirring power
- Safe low-voltage device



+ HINT

Please order **BIOMODUL 40 B** control unit **Order No. 90740** (115 V = **90740 U**) separately.

BIOSYSTEM 4

Identical with **BIOSYSTEM 1** with regard to features, technology and applications, but with:

- 4 synchronized stirring points, rectangular arrangement (linear arrangement optionally available)
- Stirring volume up to 4 x 5.000 ml

TECHNICAL DATA

	BIOSYSTEM DIRECT	BIOSYSTEM 4 DIRECT	BIOSYSTEM	BIOSYSTEM 4
Number of stirring points	1	4	1	4
Distance between stirring points	-	185	-	185
Stirring volume per stirring point (ml)	25 - 5.000	25 - 2.000	25 - 20.000	25 - 5.000
Stirring power (W)	1	4 x 0,5	0,4 - 4	0,4 - 4
Speed range (1/min)	5 - 120	5 - 120	5 - 120	5 - 120
Dimensions WxDxH (mm)	180 x 180 x 60	330 x 330 x 60	180 x 180 x 60	330 x 330 x 60
Weight (kg)	3,4	11	3,4	9,4
Operating voltage (VDC)	12	18	30	30
Construction				
Housing material	stainless steel	stainless steel	stainless steel	stainless steel
Protection acc. to DIN 40050	IP 64	IP 64	IP 68	IP 68
Ambient conditions				
Operating temperature (°C)	-10 up to +40 at 95% relative humidity	-10 up to +40 at 95% relative humidity	-10 up to +56 at 100% relative humidity	-10 up to +56 at 100% relative humidity
Operating temperature in water (°C)	-	-	0 up to +50	0 up to +50
Supply unit / Control unit				
Operation	Supply unit direct-controlled	Supply unit direct-controlled	Control unit remote-controlled	Control unit remote-controlled
Includes power supply unit	power supply unit 12 VDC	table power supply unit 20 VDC	order separately	order separately
Supply voltage / frequency	115 or 230 VAC / 50 - 60 Hz	115 or 230 VAC / 50 - 60 Hz	115 or 230 VAC / 50 - 60 Hz	115 or 230 VAC / 50 - 60 Hz
Order No.	70107 (115 V = 70107 U)	70420 (115 V = 70420 U)	70100	70400

CONTROL UNITS FOR MAGNETIC STIRRERS WITH INDUCTIVE DRIVE

Remote-controlled magnetic stirrers

require a separate control unit. In principle, the VARIOMAG stirring drives are identical.

Using different control units greatly influences the available features and the technological options the stirring drives offer.

Three control units with different specifications and features are available for VARIOMAG Magnetic Stirrers with inductive drives:

TELEMODUL

Convenient, small control unit with a **rated stirring power of 7 watts**

- Microprocessor controlled for maximum efficiency
- Continuous speed selection, OFF position
- Speeds of 130 to 1.000 rpm
- Automatic start-up for safe acceleration of the magnetic stirrer
- For small to medium stirring volumes of low-viscosity liquids



TELEMODUL 20 C

Control unit for universal application with **20 watts rated stirring power** and special ease of operation

- Microprocessor controlled for maximum efficiency
- Crystal-controlled speeds and stirring times
- User-friendly, menu-driven settings adjustment
- Single-hand operation - just turn and press the adjustment wheel
- Large graphic display - all settings readable at a glance
- Extended speeds of 130 to 1.400 rpm
- Four different power settings (25% / 50% / 75% / 100%), with more power for larger quantities and more viscous liquids and reduced power for long-term operation, largely without heat generation
- 20 watts rated stirring power
- Three individually programmable program keys for rapid startup - the last settings in effect are stored automatically
- Intermittent operation with freely adjustable stirring and pause times and rotation sense inversion (5 seconds to 1 hour)
- START/STOP key for recentring, safe starting, and rapid stopping of the stirring bar
- Vertical mixing (shake mode)
- Stirring bar rotates evenly, even at low speeds
- Three different settings (1x, 2x, 4x) for safe starting acceleration of the stirring bar, even in highly viscous liquids
- User interface in four languages (English, French, German, Spanish)
- Universal power supply for 100 - 240 VAC / 50 - 60 Hz



TELEMODUL 40 C

Powerful control unit with **40 watts rated stirring power** for demanding stirring tasks. Identical with **TELEMODUL 20 C** with regard to dimensions and features, but:

- Extra wide speed range of 100 to 2.000 rpm
- Ten different power settings (10% to 100%) with more power for larger quantities and more viscous liquids and reduced power for long-term operation without heat generation
- Ideal for controlling magnetic stirrers in incubators
- 40 watts rated stirring power
- RS-232 interface for PC data transfer and PC control
- TCP-IP network integration on request
- Universal power supply for 100 - 240 VAC / 50 - 60 Hz



HINT

Because of its high output, **MINI**, **MICRO** and **COMPACT** must be connected by a **BENCHTOP DISTRIBUTOR 4-FOLD**

ACCESSORIES

- BENCHTOP DISTRIBUTOR 4-FOLD**
- BENCHTOP DISTRIBUTOR 8-FOLD**
- EXTENSION CORD** for stirring drive

For further information see page 41

TECHNICAL DATA

	TELEMODUL	TELEMODUL 20 C	TELEMODUL 40 C
Speed range (1/min)	130 - 1.000	130 - 1.400	100 - 2.000
Speed constancy (%)	+/- 3	+/- 1	+/- 1
Rated power (W)	7	20	40
Stirring power relative to rated power (%)	100	25 / 50 / 75 / 100 (4 levels)	10 - 100 (10 levels)
Output voltage (VDC)	12	20	36
Dimensions WxDxH (mm)	63 x 96 x 50	155 x 165 x 95	155 x 165 x 95
Weight (kg)	0,4	0,6	0,7
Ambient temperature (°C)	0 up to +40 at 80% relative humidity	0 up to +40 at 80% relative humidity	0 up to +40 at 80% relative humidity
Supply voltage	115 or 230 VAC / 50 - 60 Hz	100 - 240 VAC / 50 - 60 Hz	100 - 240 VAC / 50 - 60 Hz
Mark of conformity	protection class 2 IP 20 VDE approved	IP 30 -	IP 30 -
Stirring times	-	5 s up to 60 min	5 s up to 60 min
Pause times	-	5 s up to 60 min	5 s up to 60 min
Order No.	90407 (115 V = 90407 U)	90430 (115 V = 90430 U)	90450 (115 V = 90450 U)

CONTROL UNITS FOR MAGNETIC STIRRERS WITH INDUCTIVE DRIVE AND HEATING SYSTEM

Remote-controlled magnetic stirrers of type **VARIOMAG STIRRING BLOCK THERMOSTATS, MULTITHERM** and **REACTION BLOCKS** require the use of the **TELEMODUL 40 CT** control unit.



ACCESSORIES

PT 100 external temperature sensor

- For direct control of the liquid temperature
- Stainless steel jacket

For further information see page 41



Housing for 1.000 watts (230 V) and 500 watts (115 V) heating power

TELEMODUL 40 CT

Powerful control unit with **40 watts rated stirring power** and electronic temperature control for electrical heating systems of up to +200 °C

- Microprocessor controlled for maximum efficiency
- User-friendly, menu-driven settings adjustment
- Convenient single-hand operation - just turn and press the adjustment wheel
- Large graphic display - all settings readable at a glance
- Three individually programmable program keys for rapid startup - the last settings in effect are stored automatically
- User interface in four languages (English, French, German, Spanish)
- RS-232 interface for PC data transfer and PC control
- TCP-IP network integration on request
- Integrated universal power supply for 100 - 240 VAC / 50 - 60 Hz

Stirrer control

- Extra wide speed range of 100 to 2.000 rpm
- Eight different power settings (30% to 100 %) with more power for larger quantities and more viscous liquids and reduced power for long-term operation without heat generation
- 40 watts rated stirring power
- Intermittent operation with freely adjustable stirring and pause times (5 seconds to 1 hour) and rotation sense inversion
- START/STOP key for recentring, safe starting, and rapid stopping of the stirring bar
- Vertical mixing (Shake mode = oscillating stirring bar movements)
- Stirring bar rotates evenly, even at low speeds
- Three different settings (1x, 2x, 4x) for safe starting acceleration of the stirring bar, even in highly viscous liquids

Heater control

- Electrical heating unit for up to +200 °C in 1 K increments
- Additional independent temperature control loop, turn-off temperature adjustable at the back of the unit (safety loop for unattended operation)
- Liquid temperature control using optional PT 100 external temperature sensor (see Accessories)
- Control hysteresis between 0.5 K and 10 K in 0.5 K increments
- Timer for block operation up to 8 hours



CONTROL UNITS FOR MOBIL 200 / 600 / CENTRE HOLE FOR LARGE VOLUMES UP TO 600 LITRES

MOBIL remote-controlled magnetic stirrers require a separate control unit.

Two control units with different specifications and features are available for **MOBIL 200**, **MOBIL 600** and **MOBIL WITH CENTRE HOLE** magnetic stirrers:

TELEMODUL 40 M

Universal control unit with **40 watts rated stirring power**

- Continuously adjustable speed
- Speeds of 100 to 1.000 rpm
- Digital display to facilitate exact speed settings
- Automatic start-up for safe acceleration of the magnetic stirrer
- Adjustable startup times for adapting the automatic start up to different viscosities and volumes
- Highly constant speeds even if the viscosity changes
- START/STOP key for convenient safe starting and rapid stopping of the stirring drive
- Quick-stop function stops drive within 3 seconds without after-run, for improved safety and to prevent breakage
- Integrated timer for up to 60 minutes operation
- Thermal and electrical overload protection with fault indicator, actuated at 75 °C



TELEMODUL 80 M

Powerful control unit with increased rated stirring power for the most demanding stirring tasks. Identical with **TELEMODUL 40 M** regard to dimensions and features, but with **80 watts rated stirring power**.

TECHNICAL DATA

		TELEMODUL 40 CT Designer High-power	TELEMODUL 40 M	TELEMODUL 80 M
Speed range	(1/min)	100 - 2.000	100 - 1.000	100 - 1.000
Speed constancy	(%)	+/- 1	+/- 1	+/- 1
Rated power	(W)	12 - 40 (8 levels)	80	-
Adjustable heating power	(W)	up to 1.000 (115 VAC = 500) up to 2.000 (115 VAC = 1.000)	-	-
Dimensions	WxDxH (mm)	155 x 270 x 100 255 x 180 x 90	180 x 180 x 70	180 x 180 x 70
Weight	(kg)	1,7	3,5	4,0
Ambient temperature	(°C)	0 up to +40 at 80% relative humidity	0 up to +40 at 80% relative humidity	0 up to +40 at 80% relative humidity
Supply voltage		100 - 240 VAC / 50 - 60 Hz	115 or 230 VAC / 50 - 60 Hz	115 or 230 VAC / 50 - 60 Hz
Output voltage	(VDC)	36	30	30
Mark of conformity		protection class 1 IP 30	protection class 1 IP 30	protection class 1 IP 30
Stirring times		5 s up to 60 min	5 s up to 60 min or continuous	5 s up to 60 min or continuous
Pause times		5 s up to 60 min	-	-
Starting time		3 levels	5 s up to 60 s	5 s up to 60 s
Order No.		60690 90691 (115 V = 90690 U) (115 V = 90691 U)	90540 (115 V = 90540 U)	90580 (115 V = 90580 U)

CONTROL UNIT FOR BIOSYSTEM FOR CELL SUSPENSIONS AND TISSUE CULTURES

Remote-controlled magnetic stirrers

require a separate control unit. In principle, the VARIOMAG stirring drives are identical.

Using different control units greatly influences the available features and the technological options the stirring drives offer.

BIOSYSTEM remote-controlled magnetic stirrers require a separate control unit.

BIOMODUL 40 B

Powerful control unit for universal application with **40 watts rated stirring power** and special ease of operation

- Continuously adjustable speed
- Speeds of 5 to 120 rpm
- Digital display to facilitate exact speed settings
- Automatic start-up for safe acceleration of the magnetic stirrer
- START/STOP key for convenient safe starting and rapid stopping of the stirring drive
- Continuously adjustable power settings with more power for larger quantities and more viscous liquids or higher speeds, and reduced power for long-term operation without heat generation
- Ideal for controlling magnetic stirrers in incubators
- Intermittent operation with freely adjustable stirring and pause times (40 seconds to 40 minutes) and individually activated rotation sense inversion
- Second outlet allows synchronized operation of two stirring drives



HINT

If two stirring drives are attached, the available maximum stirring power for each stirring drive is half the rated value

TECHNICAL DATA

		BIOMODUL 40 B
Speed range	(1/min)	5 - 120
Speed constancy	(%)	+/- 1
Rated power	(W)	4 - 40
Output voltage	(VDC)	30
Dimensions	WxDxH (mm)	255 x 180 x 90
Weight	(kg)	3,5
Ambient temperature	(°C)	0 up to +40 at 80% relative humidity
Supply voltage		115 or 230 VAC / 50 - 60 Hz
Mark of conformity		protection class 1 IP 30
Order No.		90740 (115 V = 90740 U)

ACCESSORIES

ACCESSORIES FOR MONOTHERM

CONTACT THERMOMETER THERMOCONTROL 1

- Electronic contact thermometer with fuzzy-logic control for exact liquid temperatures
- No ballistic effects of the liquid temperatures within the usual working range
- Housing protected against splashing and impervious to solvents
- No maintenance
- Compatible with third-party contact thermometers

HINT

Please order the power supply unit with adapter separately. Necessary for the use with MONOTHERM.

MOUNTING CLAMP FOR THERMOCONTROL 2

- For attaching the contact thermometer to the support rod
- Suitable for Ø 10 and 12 mm support rods

STAINLESS-STEEL MOUNTING CLAMP FOR THERMOCONTROL 3

- For attaching the contact thermometer to the support rod
- Suitable for Ø 10 and 12 mm support rods
- Stainless steel
- Flexible, freely placeable

POWER SUPPLY UNIT 4

- For **THERMOCONTROL**
- Required for use with **MONOTHERM**

GUARD RING 5

- Inversion option: slide protection for vessels of up to 140 or 170 mm in diameter
- Touch protection for high plate temperatures
- Includes two screw-fastened mounts for attaching to **MONOTHERM**

SUPPORT ROD 6

- For attaching **THERMOCONTROL**
- Stainless steel
- Ø 12 mm, 12 x 400 mm
- M10 thread bores



TECHNICAL DATA		THERMOCONTROL
Temperature range	(°C)	-50 up to +300
Resolution	(K)	1
Accuracy	(K)	± 1
Temperature sensor, material		Pt 100, 1.4571
Sensor length / Min. immersion depth (mm)		210 / 20
Connection cable		Spiral cable, approx. 1,8 m
Dimensions WxDxH	(mm)	54 x 109 x 22
Material		PA 6.6, grey
Safety DIN 12878		Class 1
Order No.		66145
		MOUNTING CLAMP
Order No.		66147
		STAINLESS STEEL MOUNTING CLAMP
Order No.		90407
		POWER SUPPLY UNIT
Order No.		66146 (115 V = 66146 U)
		GUARD RING
Order No.		66143
		SUPPORT ROD
Order No.		66144

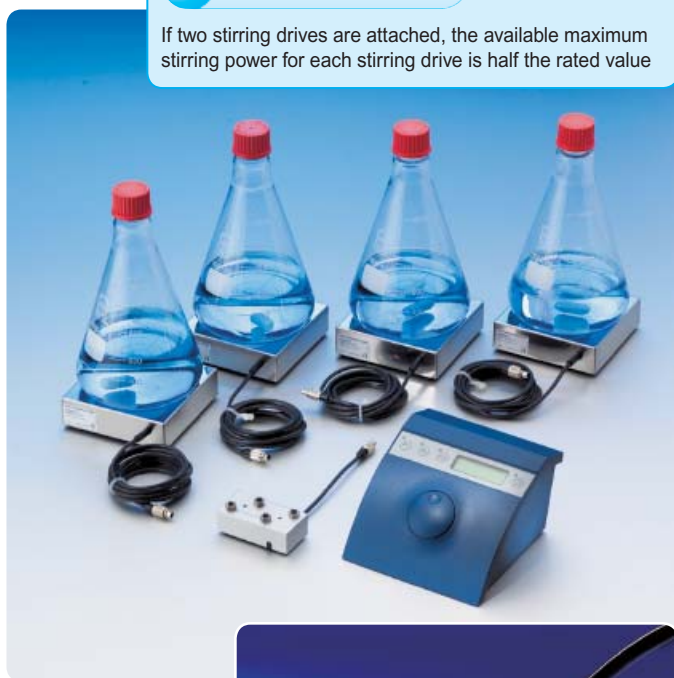
ACCESSORIES FOR MINI, MICRO, COMPACT AND MAXI

4-FOLD, 8-FOLD BENCHTOP DISTRIBUTOR

- Simultaneous control of 2, 4, 6 or 8 **MINI, MICRO, COMPACT** or **MAXI** (4 only) stirring drives using a single **TELEMODUL 20 C** and **40 C** control unit.
- For absolutely identical operating conditions
- Synchronized speed
- Identical stirring power
- Space economy
- Possible combinations on request

+ HINT

If two stirring drives are attached, the available maximum stirring power for each stirring drive is half the rated value



ACCESSORIES FOR MULTITHERM, STIRRING BLOCK THERMOSTATS AND REACTION BLOCKS

PT 100 TEMPERATURE SENSOR (external)

- For **TELEMODUL 40 CT**
- Sensor for measuring and controlling liquid temperatures
- Stainless steel jacket
- Length of the cable 0.9 m
- Four-wire technology

TECHNICAL DATA

Order No.	4-FOLD DISTRIBUTOR
	93104
Order No.	8-FOLD DISTRIBUTOR
	93108
Order No.	PT 100 TEMPERATURE SENSOR
	66154

ACCESSORIES

ACCESSORIES FOR TELESYSTEMS

TRANSPARENT BATH MOUNT

- Transparent acrylic bath mount
- Thick-walled, sturdy construction
- Heat-resistant up to +60 °C
- Thin-walled recess at the bottom for **TELESYSTEM 6 / 15 / 60** drives for operation at bath temperatures in excess of +50 °C for PUR-sealed stirring drives
- Crossbar for stable attachment of an immersible thermostat

STAINLESS STEEL BATH MOUNT

- Stainless steel 1.4301
- For bath temperatures above +60 °C
- Bottom anchor for **TELESYSTEM 6 / 15 / 60** drives for operation at bath temperatures in excess of +95 °C for silicone-sealed stirring drives
- Suitable for immersible thermostats for heating or cooling

TECHNICAL DATA		TRANSPARENT BATH MOUNT	
Ext. Dimensions WxDxH	(mm)	330 x 610 x 185	
Int. Dimensions WxDxH	(mm)	270 x 590 x 140	
Weight	(kg)	7	
Bath volume	(L)	15	
Permitted bath temperature	(°C)	0 up to +60	
Order No.		96051	
TECHNICAL DATA		STAINLESS STEEL BATH MOUNT	
Ext. Dimensions WxDxH	(mm)	315 x 520 x 160	
Int. Dimensions WxDxH	(mm)	265 x 520 x 160	
Weight	(kg)	5,6	
Bath volume	(L)	15	
Permitted bath temperature	(°C)	-10 up to +200	
Order No.		96052	

IMMERSIBLE THERMOSTAT

- Compact, powerful thermostat for both types of bath mounts. For heating, temperature control and bath liquid circulation, includes overtemperature limiter
- JULABO EC

TECHNICAL DATA		IMMERSIBLE THERMOSTAT	
		60 °C	95 °C
Temperature control accuracy (°C)		+/- 0,1	
Temperature range (°C)		+25 up to +60	+25 up to +95
Heating power (W)		2.000	
Operating voltage (VAC)		115 or 230	
Weight (kg)		4	
Order No.		96101 (115 V = 96101 U)	96109 (115 V = 96109 U)



HINT

For bath temperatures above +60 °C, the stainless steel bath mount must be used.

TEST TUBE RACKS

- For exactly centred positioning of test tubes on the stirring points
- Rack function, can be used to carry all test tubes at once
- Two convenient handles
- Stainless steel construction, see table for standard dimensions
- Test tube racks with customized bore counts, bore layouts and bore diameters available on request



ACCESSORIES FOR MOBIL 200

WHEELABLE STAND

- With wheels, brackets for accommodating the magnetic stirrer, and a surface for the stirring vessels to be placed on
- Maximum load 250 kg
- Stainless steel
- Transportable by lifting truck
- Magnetic stirrer can be height-adjusted in the lower rack by 20 mm (to reduce the power of the magnetic field)
- Dimensions (WxDxH) 660 x 600 x 150 mm

SCREW-FASTENED MOUNT

- To attach the control unit to the stand in an ergonomically acceptable and convenient working position
- Stainless steel



TECHNICAL DATA

			WHEELABLE STAND
Material			stainless steel
Dimensions	WxDxH	(mm)	660 x 600 x 150
Order No.			56104
			SCREW-FASTENED MOUNT
Material			stainless steel
Order No.			56107

TECHNICAL DATA

		TEST TUBE RACK
For TELESYSTEME 60.07 • 60.20 • 60.40		see page 25
60 bore holes, for test tubes \varnothing 25 mm, pitch 32.5 mm		86025
60 bore holes, for test tubes \varnothing 20 mm, pitch 32.5 mm		86020
60 bore holes, for test tubes \varnothing 16 mm, pitch 32.5 mm		86016

Test tube racks with different bore counts, pitch and different bore hole diameters on request.

ACCESSORIES

ACCESSORIES FOR BIOYSTEME

CULTURE AND CELL CULTURE FLASKS

For mixing microcarrier cultures, culture broths, and cell suspensions without destroying the cells

- DURAN glass bottles in different sizes
- Two lateral arms with threaded bores (GL thread) for adding, ventilating and controlling the liquid
- Centrally suspended PTFE agitator blade, removable and easily dismantled for cleaning
- Turns evenly and without jerking, even at very low speeds
- Agitator blade height continuously adjustable from outside
- Microbiologically tight seal
- Can be steam-sterilized up to +121 °C:



TECHNICAL DATA

		CULTURE FLASKS			CELL CULTURE FLASKS			
		50 / 100	125 / 250	250 / 500	500 / 1.000	1.500 / 2.500	3.000 / 5.000	6.000 / 10.000
Usable/rated volume	(ml)	50 / 100	125 / 250	250 / 500	500 / 1.000	1.500 / 2.500	3.000 / 5.000	6.000 / 10.000
Threads for side necks		2 x GL 14	2 x GL 18	2 x GL 25	2 x GL 32	2 x GL 45	2 x GL 45	2 x GL 45
Neck, interior diameter	(mm)	30	30	30	80	100	135	135
Height	(mm)	180	180	270	200	255	290	400
Bottle, exterior diameter	(mm)	56	70	85	110	145	185	230
Order No.		77005	77010	77025	77050	77150	79003	79006

CABLE

12 V CAR CONNECTION CABLE

- For operation independent of mains
- For connection to 12 V car socket or cigarette lighter
- Suitable for **MONO DIRECT**, **COMPACT DIRECT** and **BIOSYSTEM DIRECT**

EXTENSION CABLE 4 pins

For remote-controlled inductive stirring drives

- Suitable for **MINI**, **MICRO**, **COMPACT**, **MAXI**, and **TELESYSTEM**
- 3 m long

EXTENSION CABLE 6 pins

For remote-controlled **BIOSYSTEM** stirring drives

- Suitable for **BIOSYSTEM** and **BIOSYSTEM 4**
- 3 m long

EXTENSION CABLE 8 pins

For remote-controlled **MOBIL** stirring drives

- Suitable for **MOBIL 200**, **MOBIL 600** and **MOBIL WITH CENTRE HOLE** (Page 28)
- 3 m long

TECHNICAL DATA

12 V CAR CONNECTION CABLE	KABEL
Order No.	92108
EXTENSION CABLE 4 pins	
Order No.	46158
EXTENSION CABLE 6 pins	
Order No.	76101
EXTENSION CABLE 8 pins	
Order No.	56111