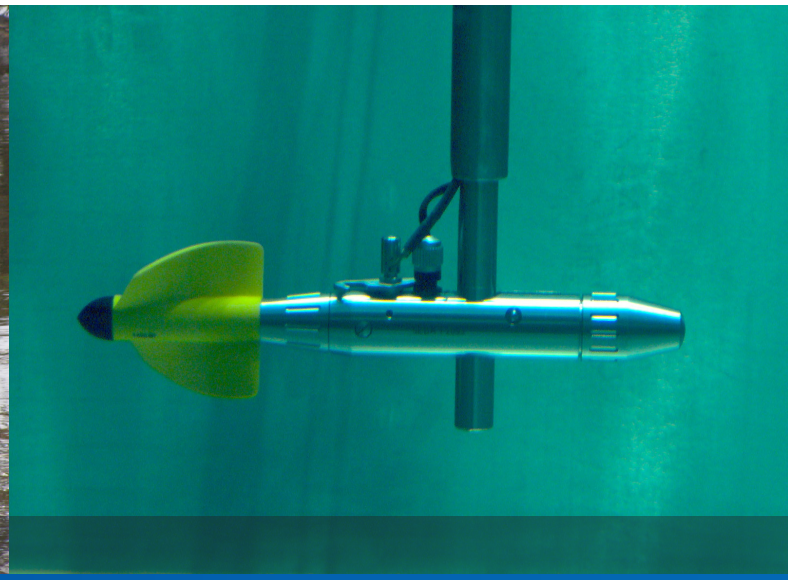




Mobile Discharge Measurement Systems

serves for determination of current velocities

- Exact flow velocity measurement
- Operation possible on rod, with mobile bridge jib and cable way installations
- Well - proven technology since decades



Universal Current Meter F1

The serves for determination of current velocities in water SEBA - Universal Current Meter F1 courses, canals, rivers and the sea, for use with rods or as cable-suspended meter equipment from 0,025 m/s up to 10 m/s.

Advantages:

- application of absolutely anti-corrosive materials
- low starting speed of 0,025 m/s
- almost frictionless contact transmission
- unit composed system

Description:

The SEBA-Universal Current Meter F1 serves for use on rods (pic. 1, 2, 3) as well as for cable-suspended-current meter equipments (pic. 4, 5) for use with SEBA single drum winches or cable way installations.

Meterbody:

The streamlined meterbody and the axle are manufactured of high-quality, non-corrosive steel. The hub of the propeller is filled with oil and rotating in two special ball-bearings. The oil filling and a capillary seal protects against water entry. A base stop prevents the propeller from striking the ground.

Contact transmission

One signal is generated from each revolution of the propeller by means of a permanent magnet. Frictionless operation increases the sensitivity of the instrument. The contact mechanism is quickly interchangeable without problems.

Instrument case:

Robust version made of stable plastic material with two cover hinges.

Dimensions:	standard with compartment for counter
Weight:	case including equipment approx. 6,5 kg

Determination of the current velocity:

Acc. to formula $V = k \cdot n + \Delta$ the flow velocity will be determined.

V = flow velocity m/s

k = hydraulic pitch of the propeller (m)*

n = propeller revolutions per second

D = characteristic of the current meter (m/s)*

**) to be determined by tests in hydraulic towing channel*

Propellers:

Ø (mm)	pitch (m)	max. water-velocity m/s	material
80 *	0.30	10.0	plastic
125 *	0.30	10.0	plastic
80	0.125	5.0	metal
80	0.25	10.0	metal
80	0.50	10.0	metal
125	0.125	5.00	metal
125	0.25	10.0	metal
125	0.50	10.0	metal
125	1.0	10.0	Metall

*The standard propeller * consists of plastic (Polyamid B) and is fibre glass reinforced with a metal winding inset. They are absolutely of same shape with accurate pitch and very high stability regarding on temperature and deformation. All propellers are interchangeable, no individual calibration is necessary (individual calibration only on request).*



Fields of application:

There are different current meter equipments available for the manifold measuring problems. The SEBA Universal Current Meter F1 on rod is often used in brooks or rivers with low water levels and current velocities.

The following possibilities are available:

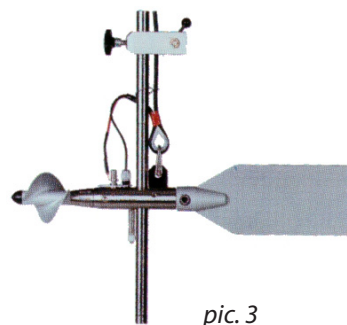
1. Fastening the meter body directly on rod 20 mm Ø (stainless steel) and using a direction indicator (pic. 1)

2. Fastening the meter body on a relocating device (made of aluminium) in connection with rod 20 mm Ø (pic. 2)

3. Fastening the meter body on rod 20 mm Ø and using a stabilizer tailpiece with special clamp (pic. 3)



pic. 1



pic. 3



pic. 2

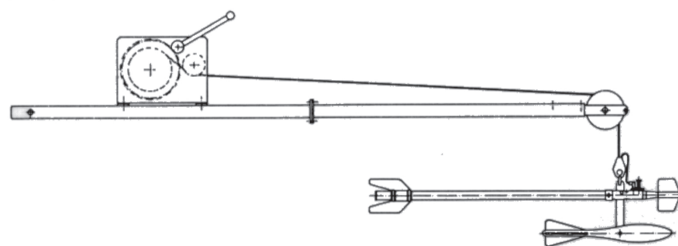
F1 - Current Meter Equipment:

For sinker weights of 5 or 10 kg (pic. 4)

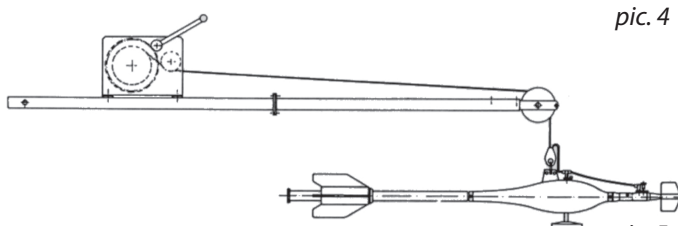
It is specially suited for water velocities from 0,025 up to 1 m/s and a max. water depth of 2 m. The sinker weights are manufactured of brass and are lacquered in yellow.

With sinker weights of 25, 50 or 100 kg and ground sensor (pic. 5)

Specially suited for measuring current velocities up to 10 m/s. This equipment is often used in connection with a single drum winch or a stationary cable-way-installation. The sinker weights consist of a stable brass frame casted round with chilled lead and are lacquered in yellow.



pic. 4



pic. 5



Mini Current Meter M1

The SEBA-Mini Current Meter M1 serves for determination of the current velocities in laboratories, river models, brooks, small rivers with low water level and for tubes with small diameters.

Special advantages:

- universal application
- low starting speed
- frictionless contact transmission
- non-corrosive materials
- unit composed system

Description:

A complete current meter equipment comprises current meter, rods with base, cable and the impulse counter (acc. to pic. 7)

Propellers and measuring ranges:

propeller-diameter	propeller-pitch	Vmax.	start-velocity
50 mm	250 mm	2.5 m/s	0.03 m/s
50 mm	500 mm	5.0 m/s	0.05 m/s
50 mm	100 mm	2.5 m/s	0.025 m/s
50 mm	50 mm	1.0 m/s	0.025 m/s
30 mm	100 mm	2.5 m/s	0.03 m/s
30 mm	50 mm	1.0 m/s	0.03 m/s

Determination of the current velocity:

A calibration of the mini current meter with the particular propellers will be recommended, so that the flow velocity can be determined according to formula

$$V = k \cdot n + \Delta$$

V = flow velocity m/s

k = hydraulic pitch (m) *)

n = propeller revolutions per second

D = characteristic of the current meter (m/s) *)

*) to be determined by tests in a hydraulic towing channel.

Instrument case:

The Mini Current Meter is stored with its spare parts and accessories - without signal counter - in a weatherproof aluminium case. You will find the parts clearly arranged in a deep drawn plastic tray. (pic. 8)

Dimensions: 553 x 225 x 90 mm

Weight: 3.2 kg



pic. 8, instrument case

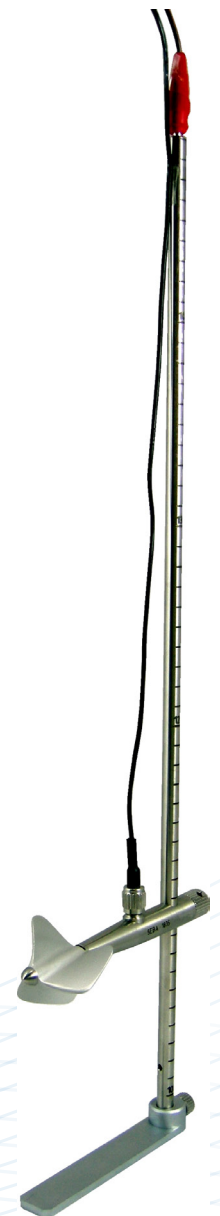
Spare parts:

2 special ball bearings, wing oil, instruments as special key pin Ø 2.8.

Accessories:

Meter bodies, rod with base, 4 m connection cable with special clamp for attachment on rod (Ø 20 mm) and adjustment device.

The all purpose SEBA Mini Current Meter M1 cannot fully replace a bigger current meter.



pic. 7,
Mini Current
on rod 9 mm Ø

Mini Current Meter M1 on rod 20 mm Ø and relocating device:

Guiding device:

Generally a measurement will be effected on rod 9 mm Ø. This rod is manufactured from non-corrosive steel, in 3 parts and has a total length of 1,5 m. A base plate for the rod is attached. On request a cm-division and a dm-graduation of the rod is possible.

For measurements on rod 20 mm Ø resp. with relocating device, a special clamp is available (pic. 6).

Contact transmission:

One signal is generated from each revolution of the propeller. The reed-switch for transmission of the propeller revolutions is composed within a small metal tube to a miniature construction unit.

The counting frequency for the mechanical counter Z1 is limited to 10 impulses per second. By application of the electronic counter Z4 all flow velocities can be measured. A complete current meter equipment comprises 6 propellers with 50 mm Ø resp. 30 mm Ø with diverse pitches (see table).

Depending on the requirement, the equipment can also be delivered with single propellers.

Meterbody:

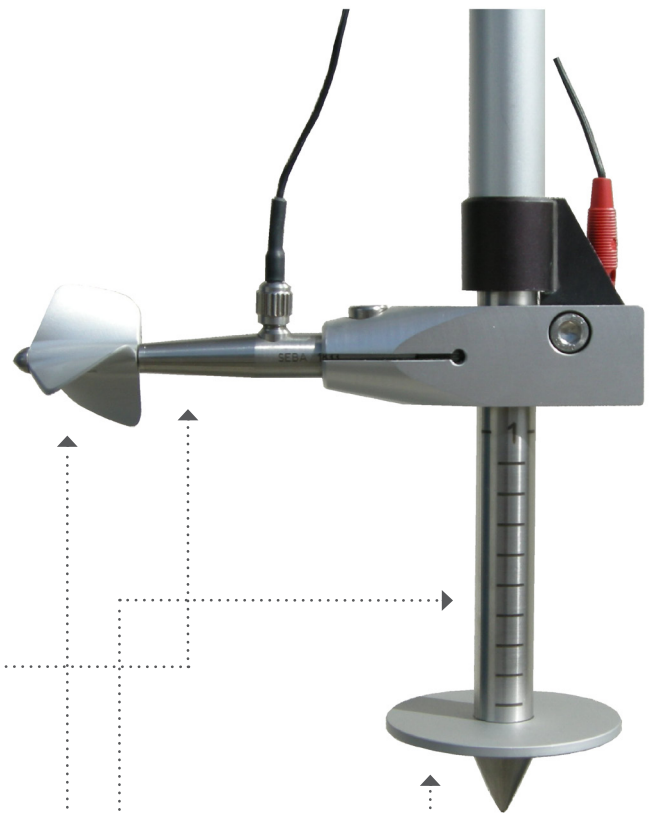
The streamlined meterbody is made of high-quality non-corrosive steel. The shaft moves in 2 extremely smooth running precision ball-bearings. The oil filling and a capillary seal protects it against water entry.

Propeller:

The propellers with high pitch accuracy are manufactured from seawater-resistant and anodized aluminium. They only will be put on and can be exchanged quickly

Rod 20 mm Ø

Ground stop



pic. 6,
M1 on rod
20 mm Ø



Technical data Universal Current Meter F1

Impeller:	Parameters:	Flow velocity [m/s]
	Measurement principle:	mechanical (dry reed contact)
	Measuring range:	0.025 - 10 m/s (depending on the impeller)
	Blade diameter:	80 mm, 125 mm
	Blade pitch:	125 mm, 250 mm, 500 mm, 1.000 mm
Material:	Anodised aluminum	
	Glass fiber-reinforced polyamide	
Universal current meter body:	Material:	Corrosion-resistant stainless steel
	Dimensions:	310 mm
	Fastening:	Locking screw (adaptable to the 20mm wing bar)
		Spacer for loading weight
Wing bars:	Material:	Stainless steel
	Dimensions:	Ø 20 mm, 1 m
	Scaling:	dm (standard), cm without (optional)
	Loading weight:	Loading weight: 5 kg / 10 kg / 25 kg / 50 kg / 100 kg

Technical data Mini Current Meter M1

Blade:	Parameters:	Flow velocity [m/s]
	Measurement principle:	Mechanical (dry reed contact)
	Measuring range:	0.025 - 5 m/s (dependent on the impeller blade)
	Blade diameter:	80 mm, 125 mm
	Blade pitch:	125 mm, 250 mm, 500 mm, 1.000 mm
	Material:	Anodised aluminum
Wing body:	Material:	Corrosion-resistant stainless steel
	Dimensions:	146 mm
	Fastening:	Locking screw, adaptable to 9 mm (standard) or 20 mm wing bar (optional)
Wing bars:	Material:	Stainless steel
	Dimensions:	Ø 9 mm, 1.5 m (3 parts)
	Scaling:	cm
	Material:	Stainless steel
	Dimensions:	Ø 20 mm, 1 m
	Scaling:	dm (standard), cm (optional)

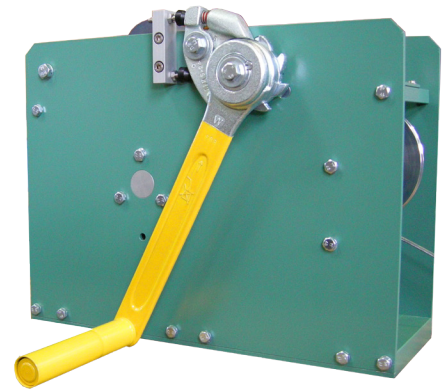


Single Drum Winch SEW II, SEW II-100

For measurements from bridges and boats the SEBA - Single Drum Winch SEW II with jib is used together with the cable-suspended current meter equipment. It is portable and for universal applications.

Advantages:

- **Mobile:** The compact design and relatively light weight of SEWII (12 kg) permits independent flow measurement of stationary cable crane systems with impellers and a load of 5 kg to a maximum of 100 kg. As a standard, SEWII can be operated mechanically and therefore independently of the mains.
- **Variable:** The SEWII can easily be adapted both to a mobile bridge cantilever or installed in measuring trailers or measuring vehicles with swiveling telescopic arms. For maximum ease of use, the following are available: a high-performance 24 V motor for load weights up to 100 kg and an operating terminal with joystick control and an integrated counting device (option).
- **Tailor-made:** With the SEWII we offer mobile solutions from a single source, i.e. from a simple bridge cantilever to completely configured, fully equipped test vehicles (e.g. Mercedes Benz Sprinter).



Technical data

Wind framework:	Material:	Aluminium
	Dimensions:	370 x 276 x 130mm
Cable drum:	Material:	Cast aluminum
	Dimensions:	Ø 175 mm maximum
	Capacity:	80 m steel wire rope
Measuring cable:	Material:	Galvanized steel wire rope with an insulated copper strand
	Dimensions:	Ø 3,25 mm
	Connection:	T and angle plug with a thimble for load weight
	Safety crank:	Load pressure brake and foldable reel handle
	Roller counter:	4 digits, for depth indication in m and cm
	Capacity:	50 kg Standard, 100 kg, option (type SEWII-100)
	Total Weight:	12 kg (with 25 m measuring cable)

Z6 counting device

Description of Product:

With this full-electronic counter it is possible to receive frequencies for all flow velocities. The impulses generated by the current meter are added and indicated in relation to the pre-selected time. The timing starts from the first impulse.

With the basic version, the impulses can be counted in freely pre-definable measurement intervals. Optionally, the impulse number to be counted can be pre-selected (Z6-I). A further option is the direct calculation of the current velocity by means of pre-definable equations (Z6-V). There are several memory locations for all adjustments. All the user-defined adjustments can be made directly at the device or via connected PC and can be saved permanently.



Technical data

Z6:	
Pulse frequency:	max. 40 pulses/s
Measuring accuracy:	0.01 s (time measurement) 1 pulse (pulse counting)
Input signal:	Contact input
Connections:	2 x 4 mm socket for connecting cables wing - counting device
Time preset:	free pre-definable 10 seconds steps
Z6-I:	
Pulse preselection:	additionally freely pre-definable in 10 pulse increments
Z6-V:	
Storage space:	Storage of up to 20 calibration equations and additional indication of flow rate in cm/s
Housing:	
Material:	Anodised aluminum
Dimensions:	122 x 117 x 45mm (L x W x H)
Display:	5-digit LCD display
Membrane keyboard:	6 function keys
Protection class:	IP 65
Communications Interface:	RS 232
Power supply:	9 V battery, replaceable, standard 8.4 V block battery with charging socket, optional
Operating temperature:	-20 °C - + 60 °C
Weight:	450 g

The right is reserved to change or amend the foregoing technical specification without prior notice.

Contact:

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