MOBALine Movement

Self-setting movement with hour, minute and second display. Suitable for indoor and outdoor clocks with dial diameters up to 400 mm.
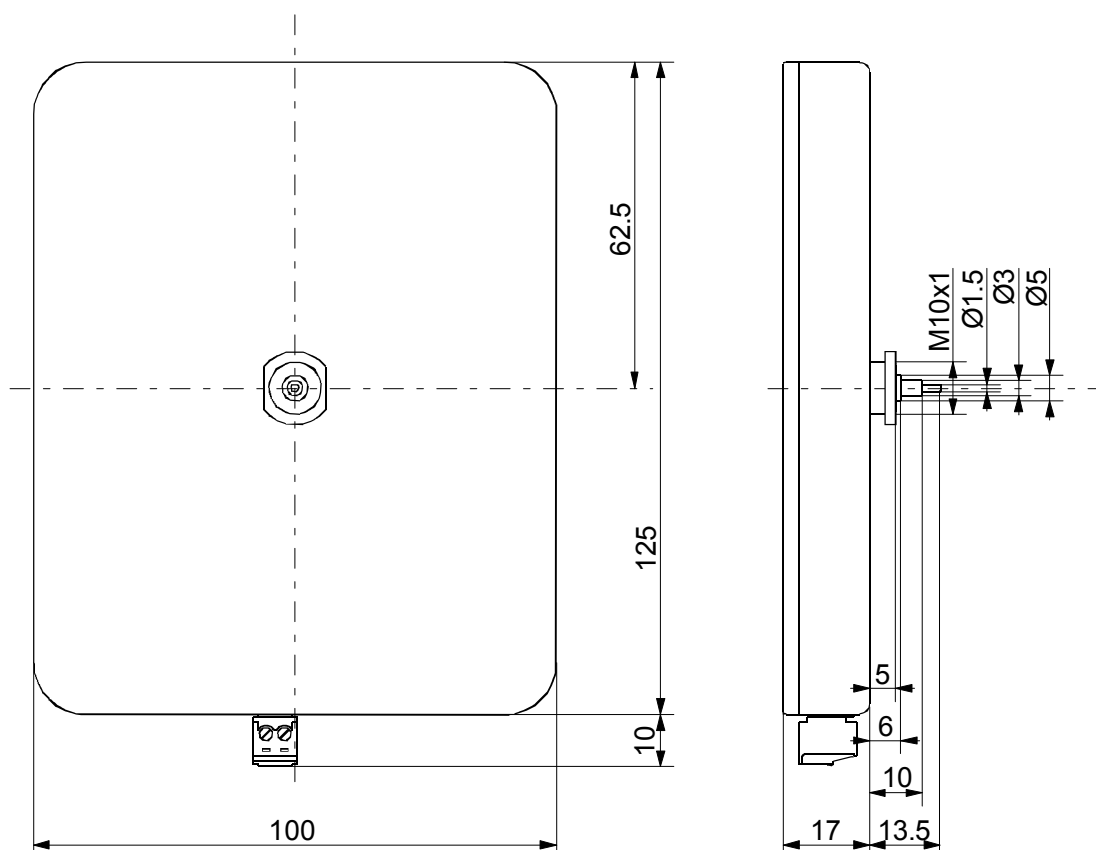
SEM 40 / SAM 40

Types:

SEM 40 (with second)   Art. Nr.: 204011
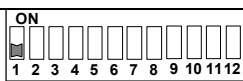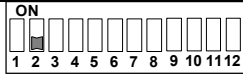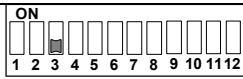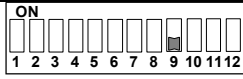SAM 40 (without second)   Art. Nr.: 204012

- Fully controlled by a connected MOBALine master clock. Automatic time adjustment and daylight saving time changes.

- Signalization of missing MOBALine code reception after 24 hours by setting the hands to 12:00 position.

- Two motors for minute / hour and second.

- Different running modes (stepwise or continuous) of the minute and second hand selectable by means of DIP-switches.

- World time function supported by selection of a MOBALine world time zone (1 out of 20 selectable by DIP switches).

- Fully powered by MOBALine.

Dimensions: 62.5, 125, 10, 100, M10x1, Ø1.5, Ø3, Ø5, 5, 6, 10, 17, 13.5

1 Configuration

The movements SEM 40 / SAM 40 have 12 DIP switches on the housing back side. The following configuration settings are possible:

Switch:		Position OFF:	Position ON:
1	ON [switch image 1-12]	Movement runs on time (if synchronized)	Movement runs to 12:00 position
2	ON [switch image 1-12]	Second hand in stepwise mode	Second hand in continuous mode
3	ON [switch image 1-12]	Minute hand in stepwise mode	Minute hand in continuous mode
4 - 8	ON [switch image 1-12]	Clock runs on the line time given out by the master clock: 4: 0 5: 0 6: 0 7: 0 8: 0	Selection of world time zone (binary value): 4: 1 5: 2 6: 4 7: 8 8: 16
	ON [switch image 1-12]	Standard	Swiss Railway Mode (SBB)
10 - 12	-	No function	No function

Recommendation: Set configuration switches prior to applying power (MOBALine signal).

2 Installation

1. Connect the clock to MOBALine
   (the input is located at the 6 o'clock position)

2. Set the DIP switch 1 to ON or set the slave clock line of the MOBALine master clock to the STOP state

3. wait for the movement to stop

4. insert metal pins into the two holes on the back side (ill. 1).
   It should be possible to insert the pins about 6-7mm deep.

5. Mount the parts to the arbor in the following order:
   - rubber washer
   - dial
   - metal ring
   - nut (torque 4.5 Nm +/- 0.2)
   - hour hand
   - minute hand
   - second hand
   During the assembly, the movement must rest on a stable surface (ill. 2).

6. Adjust the hands to 12 o'clock

7. Remove the pins

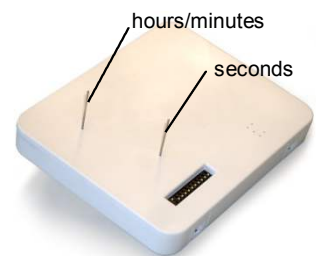8. Set the DIP switch 1 to OFF or set the slave clock line of the MOBALine master clock to the WORK state
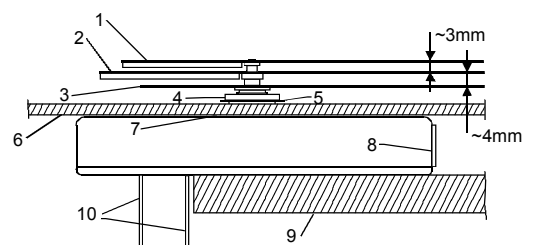

Illustration 1

Illustration 2

1 second hand	6 dial
2 minute hand	7 rubber washer
3 hour hand	8 MOBALine input
4 nut	9 rest
5 metal ring (optional)	10 metal pins

3 Maintenance

If maintenance is necessary, repeat the steps 2-8 in chapter 2.

4 World time function

The movements SEM 40 / SAM 40 support the MOBALine world time function. On the master clock (e.g. DTS, ETC, CTC or MTC) you can configure up to 20 different world time zones with different local time offsets (e.g. New York, London, Brussels, Tokyo, etc.) which will be transmitted to the slave clocks by means of MOBALine world time telegrams.

With the switches 4 to 8 one out of the 20 world time zones can be selected. Further details regarding the configuration of the world time function can be found in the manuals of the corresponding master clocks.

5 Technical data

	SAM 40	SEM 40
Synchronization	MOBALine	
Setting time after restart	< 3 minutes 20 seconds	
Daylight saving time change	< 15 seconds	
Operation mode second shaft	continuous or stepwise	
Operation mode minute shaft	continuous or stepwise	
Operation mode hour shaft	continuous	
Operation voltage	MOBALine: 10 - 20 V, 50 Hz	
Current consumption	< 6 mA @ 17 V	
Autonomous operation in case of signal loss	24 hours	
	typical deviation	
Accuracy (synchronized)	better +/- 100 ms	
Motors	1 (h / min.) clockwise / counterclockwise	2 (h / min. + sec.) clockwise / counterclockwise
Temperature range	-30 ... +70 °C	
Weight	165 g	180 g
Max. hand weight (well balanced)	hour: 7 g; minute: 18 g; second: 3 g	
Dial diameter	max. 400 mm	
Dial thickness	max. 3 mm	
Nut fixing torque	4,5 Nm +/- 0,2 Nm	
Torque on hour shaft	max. 2.8 mNm	
Torque on minute shaft	max. 1.4 mNm	
Torque on second shaft	max. 2.1 mNm	

6 Accessories

Position:	Descriptive name:	Part number:
1	Central nut M10x1 (2 mm wide, hole 10mm)	20000
	Central nut M10x1 (4 mm wide, hole 12mm)	203685
2	Rubber washer Ø 40 x 12.5 x 0.5 mm	32 002
	If needed (depending on dial thickness):	
	Rubber washer Ø 40 x 12.5 x 1 mm	250 079
	Rubber washer Ø 43 x 12.5 x 2 mm	250 078
3	Metal ring for dial protection (used for nut 203685 only) Ø 16 x 12.5 x 0.5	22699
4	Needles for hand mounting	701710

BE-800752.04