Operating Manual

WeightWatcher Beam

Content

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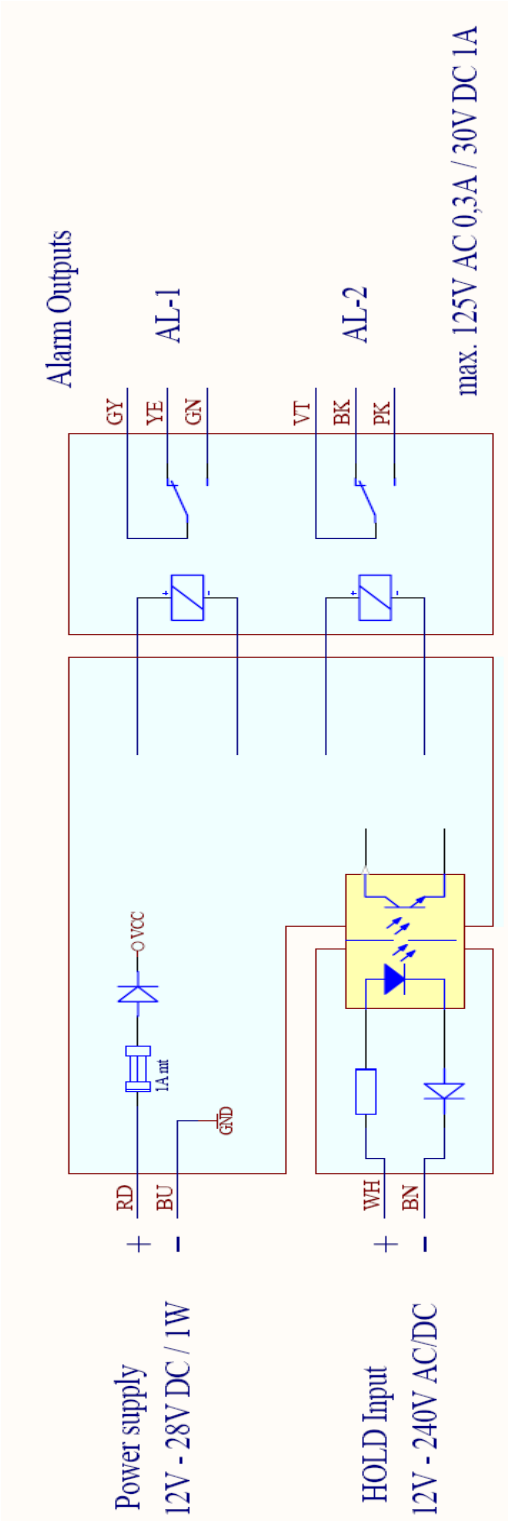
1. Connection Diagram



Wire configuration		
Farbe	**Abk.**	**Belegung**
Red	RD	Supply voltage 24 V DC
Blue	BU	Ground
White	WH	+ Hold input
Brown	BN	- Hold input
Green	GN	NO contact AL-1
Yellow	YE	NC contact AL-1
Grey	GY	COM contact AL-1
Pink	PK	NO contact AL-2
Black	BK	NC contact AL-2
Violet	VT	COM contact AL-2

2. Alarm Relays

AL-1 (change-over contact)

Changes state as soon as the load limit adjusted by AL-1 is exceeded.

AL-2 (change-over contact)

Changes state as soon as the load limit adjusted by AL-2 is exceeded.

3. HOLD-Function

The HOLD input responds for alternating and direct voltages between 12 V to 230 V. During the elevator travel the measured loads can heavily fluctuate (friction in the rails etc.). As long as a voltage (e. g. the travel signal) between 12 to 230 V is applied at the HOLD input the alarm output through the alarm relays does not take place. If during an elevator ride a signal is presented to the HOLD input or if no signal is presented when the elevator is at standstill, the system automatically carries out a compensation of the rope weight in case of elevators with multiple suspensions as well as a compensation of the weight of a possibly existing compensation chain.

Slack Rope Alarm

There is a possibility to create negative switching thresholds by setting the first digit to minus. Slack rope situations can be detected because the measured weight is below the weight of the car.

4. How to Access a Parameter

The unit is provided with a menu offering access to the adjustable parameters.

 This key is pressed to browse through the menu items. After selecting a menu item, it is used to navigate through the sub-menu. For parameters, it helps you set the parameter-value desired.

 This key is pressed to select a menu item displayed, or to apply the value set for a parameter.

 This key is pressed to quit the current menu item or parameter without applying the set value. By repeatedly pressing this button, you will return to displaying the current total load in the car.

Attention:

The unit automatically returns to its home-position displaying the current total load in the car, and will do that after one minute without any push of a button, regardless of which menu-item had been selected beforehand.

After ten minutes without any push of a button it changes into the energy-saving mode, i.e. the display goes off for being reactivated by the next push of a button.

5. How to Adjust a Parameter

1.) Press button  to navigate through the parameters until the one to be adjusted is displayed.

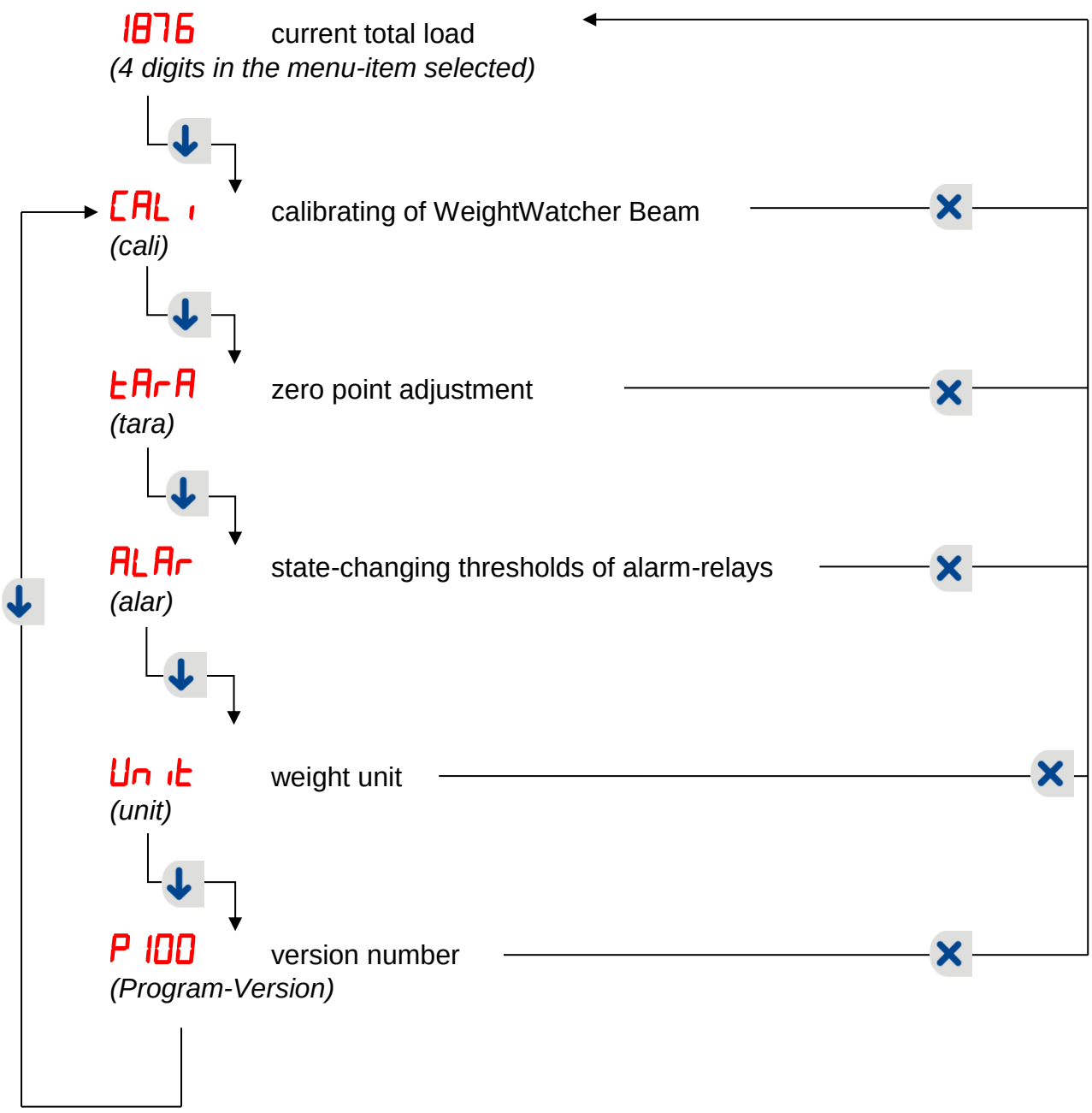
2.) Press button  to select this parameter.

3.) Press button  to navigate to the value desired for the currently flashing digit. Press button  to change to the next digit.

4.) After setting the last digit, press button  again. After that the whole figure will be flashing.

5.) Press button  once more to apply the adjusted parameter.

6. Scheme of Menu



7. How to Calibrate the Load Measuring

Leaving the pre-adjusted menu-item Unit unchanged means that the loads are to be entered in terms of percent of the nominal load, such as for example 100% for full load and 105% for overload.

Take the following steps to calibrate the WeightWatcher Beam

1. Mount the rope-sensor to the upper belt
2. Connect WeightWatcher Beam to a power supply ranging between 12V and 28V DC Calibrate the WeightWatcher Beam both under full load and zero-load conditions
   a. **How to Calibrate Zero Load**
   Purpose of this function is to compensate the weight of the empty cabin. Take the following steps:
      i. By ↓ navigate to menu-item CAL i and select it by pressing ↵. Then navigate by ↓ to menu-item Zero and select it by pressing ↵. The standard value (refer to Unit) is 000' (0% load, i.e. empty cabin). As soon as you will have adjusted the last digit, the whole figure will be flashing.

      ii. Apply it by pressing ↵. After that a countdown will be running from 9999 to 0000. At 0000 the current weight of the car will be measured. It goes without saying that at that moment there must not be anything in the cabin or on the car roof that does not belong there under normal operation conditions (tools!), and that there must not stay any person in the cabin or on the car roof in order not to warp the zero load parameter.

   b. **How to Adjust Full load**
   Take the following steps:
      i. By ↓ navigate to menu-item CAL i and select it by pressing ↵. Then navigate by ↓ to menu-item LoAd and select it by pressing ↵. After that adjust on the display an arbitrary load to be loaded into the cabin. Unless you changed the standard of menu-item Unit enter this load in terms of a percentage of the nominal load, i.e. 100% (100'), if you are loading the nominal load, or 75% (075') if you are going to load ¾ of the nominal

load only. As soon as you will have adjusted the last digit, the whole figure will be flashing.

ii. Apply it by pressing  . After that a countdown will be running from 9999 to 0000. At 0000 the current weight of the car including load will be measured. It goes without saying that at that moment there must not be anything additional in the cabin or on the car that does not belong there under normal operation conditions (tools!), and that there must not stay any person in the cabin or on the car roof in order not to warp the full load parameter.

iii. As from now on calibration of the rope-sensor is completed and in effect.

8. Alarm Limits

Alarm limit: a designation that corresponds to the load limit in the cabin, which – if exceeded – will change the state of the alarm relay. After changing the state of the alarm-relay, the corresponding status-LED will be luminating.

AL-1 (freely programmable load)

Changes its state, if the load limit adjusted by parameter AL-1 is exceeded.

AL-2 (freely programmable load)

Changes its state, if the load limit adjusted by parameter AL-2 is exceeded.

How to Adjust the Alarm Limits:

1. By  navigate to menu-item ALAr and then press  .
2. Now – in the same manner – navigate to the alarm limit to be adjusted (AL-1, AL-2) and select it by pressing  .
3. By  navigate to the desired value of the currently flashing digit and select it by pressing  . This will at the same time make the next digit flash.
4. After having adjusted the last digit and accordingly pressed  , the whole figure will be flashing.
5. **Press  once more to apply the parameter.**
6. You can quit this menu-item at any time by pressing  .

Attention:

Unless you changed the standard setting of menu-item Un it the alarm limits are to be adjusted in terms of percentage, i.e. 100% for full load and 105% for overload.

9. How to Adjust the Display

Menu-item Un it offers two options. Weights and alarm limits will be displayed according to the option you choose.

- Prcn *(Percentage)* — Weights are all displayed in terms of percentage. (**preset standard**)
  Full load equals 100%
  Empty cabin equals 0%

  LoAd *(Load)* — Weights are displayed in tons.

  tArA — The function tArA sets the gross weight to zero; after that, only the net weight of the cabin shown.

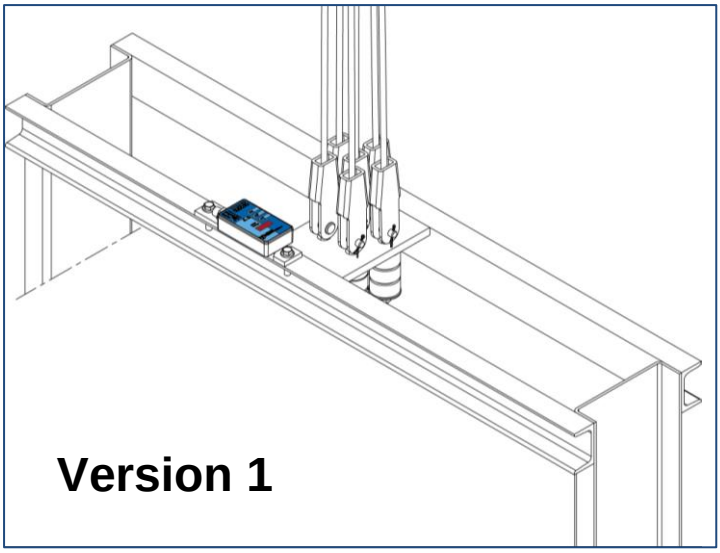
10. Electric Characteristics

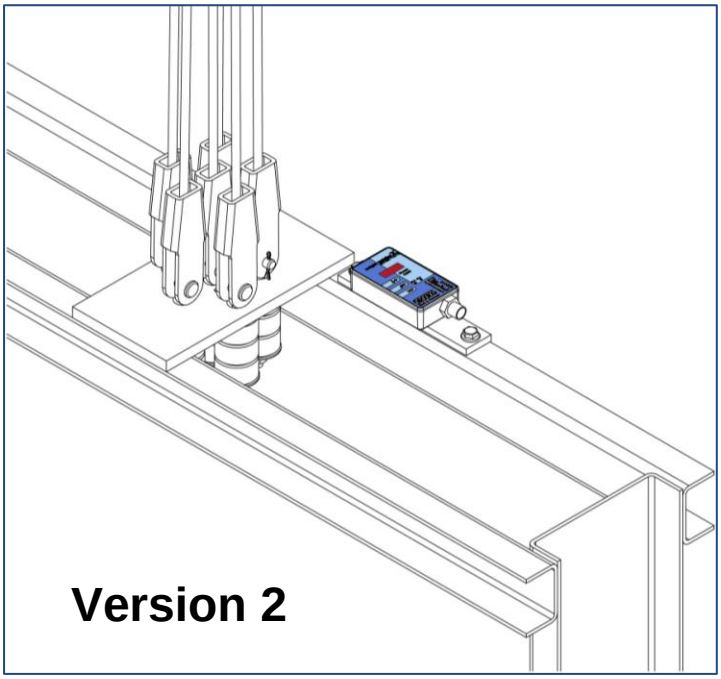
WeightWatcher Beam

Supply Voltage	12 V – 28 V DC
Power Consumption	< 1 W at 12 V DC
Fuse	1 A mT
HOLD-Input	0,8 W
Relay outputs	2
max. switching voltage	250 V AC / 220 V DC
max. starting current	2 A
max. continuous load current	30 V DC 1 A 125 V AC 0,3 A
max. switching capacity (resistive load)	62 VA
max. switching capacity (inductive load)	62 VA
min. switching load DC	10 mV DC 0,01 mA

11. WeightWatcher Beam Installation

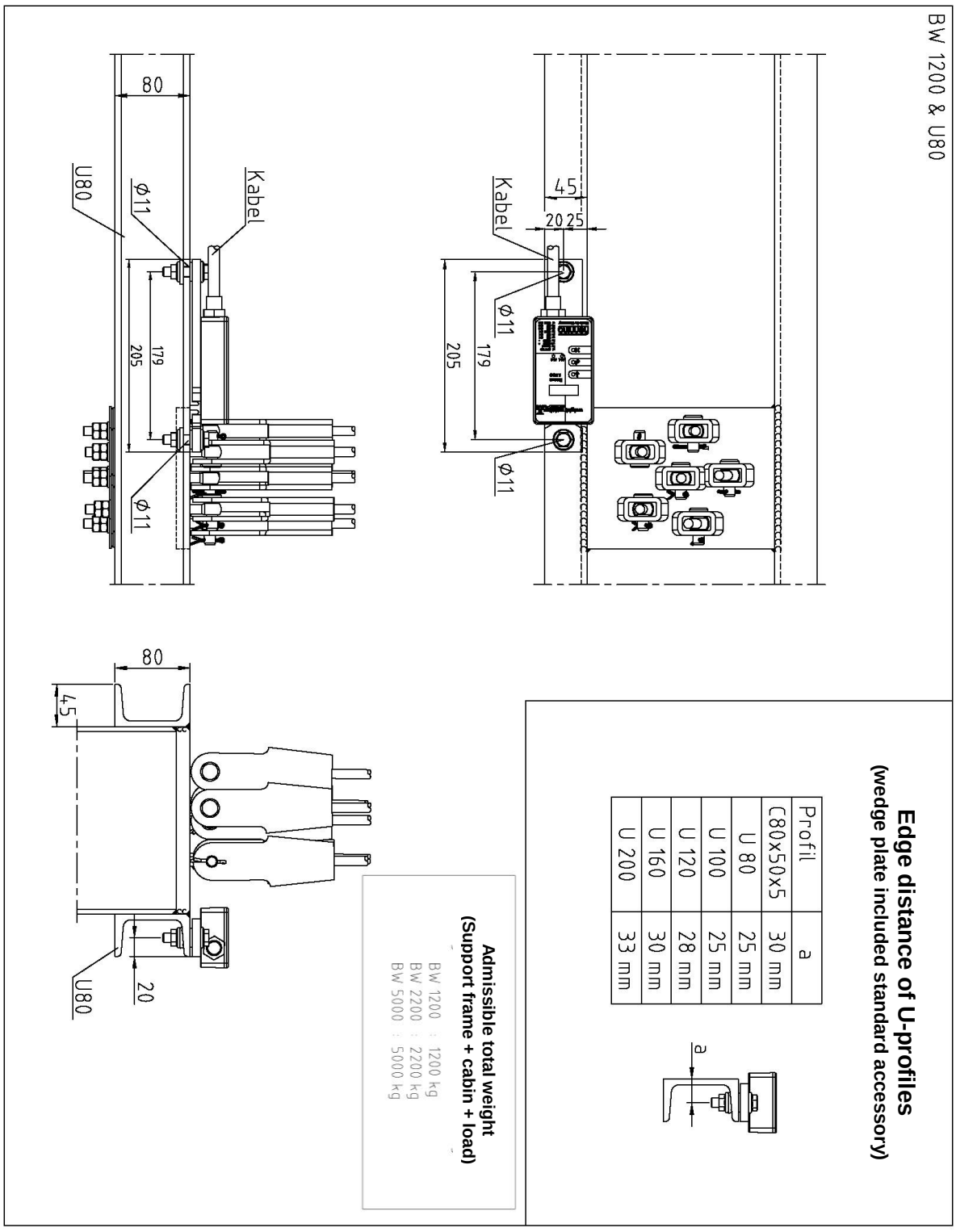
The sensor has to be mounted on the upper belt of the frame (see Fig. Sketch).



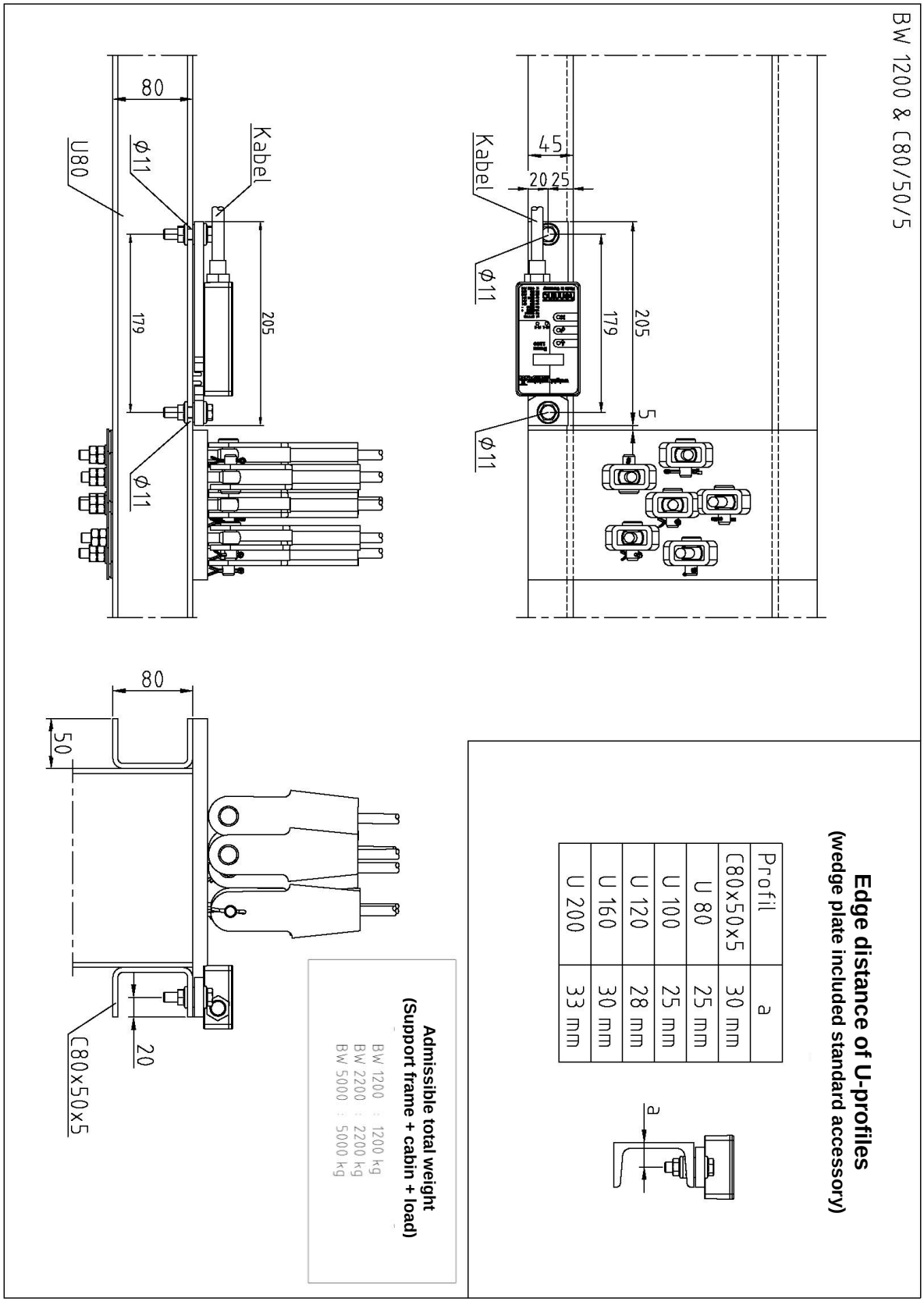


It is important to ensure that the sensor has to be placed centered on the upper U-profile. The surfaces of the U-profile must be smooth, so that complete contact with the sensor is guaranteed. The sensor must not wobble or do not tilt when tightening.
The ratchet fittings are to be used! Unfortunately, standard screws are unsuitable for this installation.
In **version 1**, The sensor is to be positioned so, that the adjustable foot of the sensor body is brought in line with the outer edge of the cable plate, and is fitted to the U-profile.
In **version 2**, The sensor body can only be placed in front of the plate. In this case, please ensure that the cable always runs away from the centre. This applies to both versions. This applies to both versions. Pulleys are supplied.
The sensors are to be fitted at various distances (see table) to their respective profiles. Two holes (minimum diameter - 11mm) must always be drilled at a distance of 179 mm apart. This applies to all three WeightWatcher Beams.

Version 1



Version 2



12. Operation Instructions in Brief

1.) Install the unit at an appropriate place.

2.) Calibrate with empty cabin

By ↓ navigate to menu-item CAL 1 select sub-item ZEro and confirm by ↵. The preset standard (see Unit) is 000'1 (0% cabin load, i.e. empty cabin). After setting the last digit, the whole figure will be flashing until you confirm it by pressing ↵. After that a countdown will be running from 9999 to 0000. At 0000 the current weight of the cabin will be measured. At that moment there mustn't be anybody in the cabin or on the car roof , in order not to warp the measurement. Furthermore make sure that you didn't leave any tools in the cabin or on the car roof, nor any other things that don't belong there during normal operation.

3.) Calibrate with loaded cabin (nominal load)

By ↓ navigate to menu-item CAL 1 select sub-item LoAd and confirm by ↵. Now you can adjust on the display an arbitrary load that you will load into the cabin. Unless you changed the preset menu-item Unit, you will have to enter the load in terms of percentage, i.e. 100% (100'1), if you load the nominal load, or 75% (075'1), if you load ¾ of the nominal load for example. After setting the last digit, the whole figure will be flashing until you confirm it by pressing ↵. After that a countdown will be running from 9999 to 0000. At 0000 the current weight of the cabin (including load!!) will be measured. At that moment there mustn't be anybody in the cabin or on the car roof , in order not to warp the measurement. Furthermore make sure that you didn't leave any tools in the cabin or on the car roof, nor any other things that don't belong there during normal operation, except the load for calibration.

4.) Adjust the alarm limits (see item 10)

By ↓ navigate to the alarm limit and confirm by ↵. Scroll by ↓ to the value desired, then press ↵ to adjust the state-changing limit. Press ↵ 2 times to confirm the adjustment.

5.) Connect the control lines to the lift controller and make sure that you accordingly choose the make- resp. break-contact.

Comparison of WeightWatcher, WeightWatcher light, WeightWatcher light MultiRope and WeightWatcher Beam





	Weight Watcher			Weight Watcher Light		Weight Watcher Light MultiRope		Weight Watcher Beam		
Evaluation Unit	AE12			AE16 light	AE8 light	MultiRope, sensor is connected directly to the evaluation unit		WW Beam, sensor is connected directly to the evaluation unit		
Max. Number Of Sensors	12			16	8	1		1		
Voltage	12 - 28 VDC			12 - 28 VDC	12 - 28 VDC	12 - 28 VDC		12 - 28 VDC		
Power Consumption	4 W			0,8 W	0,8 W	1 W at 12 V DC		1 W at 12 V DC		
Output Relays	4 NO/NC (zero load, full load, overload, slack rope)			3 CO, freely programmable	2 CO, freely programmable	2 CO, freely programmable		2 CO, freely programmable		
Analogue Output	optional			●	●	●		●		
Hold Input	12 - 230 VAC/DC			12 - 230 VAC/DC	●	12 - 230 VAC/DC		12 - 230 VAC/DC		
CanOpen	optional			●	●	●		●		
Display	LED, 4 digits			LED, 5 digits	LED, 5 digits	LED, 4 digits		LED, 4 digits		
Operation	3 keys			3 keys	3 keys	3 keys		3 keys		
Determination Of Car Weight	●			●	●	●		●		
Rope Tension Assistant	● (Via Laptop)			●	●	●		●		
Configuration by laptop	● (USB-Cable)			● (special cable)	●	●		●		
Dimensions (L x W x H)	105 x 90 x 62 mm			115 x 80 x 40 mm	115 x 80 x 40 mm	sensor is connected to the evaluation unit		sensor is connected to the evaluation unit		
Art.-No.	455000, 455002 (Analog), 455005 (CanOpen)			456000	456100					
Rope Load Sensors	LS 1	LS2	LS 2000	LS light		MultiRope 200	MultiRope 300	WW Beam 1200	WW Beam 2200	WW Beam 5000
Art.-No.	455500	455400	455850	456500		456600	456700	456200	456225	456250
Rope Diameter	6 - 16 mm	4 - 10 mm	6 - 16 mm	4 - 13 mm		4 - 26 mm	4 - 26 mm	4 - 26 mm	4 - 26 mm	4 - 26 mm
Measuring Range	0 - 500 kg	0 - 300 kg	100 - 2000 kg	0 - 500 kg		300 - 2500 kg	700 - 6000 kg optional 10.000 kg	300 - 1200 kg optional 3000 kg	300 - 2200 kg optional 5500 kg	500 - 5000 kg optional 12.500 kg
Measuring Principle	Strain Gauge	Strain Gauge	Strain Gauge	Strain Gauge		Strain Gauge		Strain Gauge		
Calibrated Sensors	● weight	●	pre-cal../rope Ø	●		●	●	●	●	●
Calibration After Installation	●	●	●	●		●	●	●	●	●
Temperature Range	0° - 70°C	0° - 70°C	0° - 70°C	0° - 70°C		0° - 70°C	0° - 70°C	0° - 70°C	0° - 70°C	0° - 70°C
Length Of Cable	2,5 m	2,5 m	2,5 m	2,5 m		5 m	5 m	2,5 m	2,5 m	2,5 m
Dimensons (L x W x H)	250 x 75 x 19 mm	178 x 58 x 16 mm	300 x 80 x 19 mm	110 x 70 x 22 mm		220 x 220 x 132 mm	220 x 320 x 142 mm	205 x 64 x 41 mm	205 x 64 x 48 mm	205 x 64 x 50 mm




● = Standard
● = Not available

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