Contents

1. Identification

Products:	Vibrator control	Motor control
Marking:	VIBRATOR CONTROL SE601 / SE602 / SE605 / SE606	MOTOR CONTROL SE621
Serial Nr.:	From 9900 onwards	from 9900 onwards

2. EU Certificate of Conformity

We declare on our sole responsibility that the vibrator controls SE601, SE602, SE605 and SE606, just as the motor control SE621, to which this declaration applies, comply with the current stipulations of the EC Machinery Guidelines 2006/42/CE.
Furthermore, these products also comply with the following standards and rules:
- Electrical equipment for industrial machines EN60204-1,
- IP protection classes in accordance with EN 60529, IEC 529, VDE 0470, DIN4 0050,
- EMC Directive 2004/108/EC, EN 55011, product family standard for radiation, group 1, class B,
  EN 61000-6-2, generic standard interference suppression in industrial environments.

3. Safety information

To exclude hazards due to live parts and to avoid interruptions of operation, installation, putting into operation and adjustments should on principle only be performed by qualified persons. These persons must have these instructions at their disposal at all times. According to VDE 105 or IEC 364 qualified persons are those who, from their training and knowledge of the standards, stipulations and rules, as well as operating conditions, have been authorised by the persons responsible for safety in the installation to perform these duties.

The controls described herein often carry dangerous voltages when operating. Opening the casing is therefore prohibited. Before interfering with plugs, cables, sensors, valves, vibrators and motors, they must first be disconnected from the control unit. Mere switching off by the rocker switch is insufficient.

The most important functions and switching conditions of the control units are indicated by means of in part two-coloured LEDs on the simply and clearly designed front panels. Fuseholders, mains switches and all settings are easily accessible on the front panels. All electrical connexions required are made by plugging into the rear panel.

To assure the functional safety of the control units described, all repairs, including minor ones, must on principle be undertaken by the manufacturer. The liability of the manufacturer or claims under guarantee are rendered invalid in the event of intervention by third parties.

Protection must be afforded by superfast fuses rated max. 6.3A. If fuses with a higher current rating or different characteristic are used, all claims under guarantee will be declined.

The control units described contain mains suppression filters, which enables the utilisation not only in an industrial environment, but also in a domestic environment, in business and trade areas as well as in small enterprises.

The protection class IP40 is reached only, if all connectors are plugged, and the unused fixing threads at the sides are locked with the corresponding screws or covers. Otherwise the protection class IP20 counts.

This documentation was examined with scrupulous care. But no assurance of freedom from errors can be given. We reserve the right to make technical modifications as thought fit.

4. Use for the intended purpose

The control units described are devices for installation in mains-operated industrial systems. They exclusively serve for the controlling and monitoring of feed systems.

Vibrator controls SE601/602/605/606: Controlling of electro-magnetically powered vibrating bowl feeders, vibrating linear feeders or vibration hoppers.

Motor control SE621: Switching of a conveyor, elevator or hopper, driven by a single phase alternating current motor (AC-motor, capacitor motor).

Use for any other purpose is regarded as not for the intended purpose. The manufacturer declines to bear any responsibility for damage resulting therefrom.

5. Description of the product

Vibrator control SE601

Employment: Controlling of an electro-magnetically powered vibrating bowl feeder or of a vibration hopper, which is monitored by a sensor with respect to blockage and fill level.
Features: The vibration frequency 3000 or 6000 vibrations per minute (50 Hz) can be selected. The discharge rate is infinitely variable within variable limits. Fluctuations of the mains voltage are effectively corrected.
With the internal voltage supply it is possible to connect nearly all commercially obtainable sensors with PNP, NPN and NAMUR output. The separately adjustable time-lags for switching on and off are equipped with a quartz-crystal time-base and are thus independent of mains frequency and temperature.
The vibrator is switched on with adjustable smooth start, but is switched off instantaneously.
Available for the user is a valve output (AIR) which is activated together with the vibrator. The valve is switched off after a time-lag, in order to compensate for the overtravel of the vibrator.

The connexions INTERFACE allow the locking or enabling of several control units SE6XX mutually as well as through a higher-order control system (PLC). For monitoring purposes, in addition the sensor and blockage conditions are transmitted to the PLC.

Vibrator control SE602

Employment: Controlling of an electro-magnetically powered vibrating bowl feeder or of a vibration linear feeder, which conveys continuously or whose state is monitored by a higher-order control system (PLC).
Features: The vibration frequency 3000 or 6000 vibrations per minute (50 Hz) can be selected. The discharge rate is infinitely variable within variable limits. Fluctuations of the mains voltage are effectively corrected.
The vibrator is switched on with adjustable smooth start, but is switched off instantaneously.
The connexions INTERFACE allow the locking or enabling by a vibrator control SE601 as well as through a higher-order control system (PLC).

Vibrator control SE605

Employment: Low-priced controlling of an electro-magnetically powered vibrating bowl feeder or of a vibration linear feeder, which conveys continuously.
Features: The vibration frequency 3000 or 6000 vibrations per minute (50 Hz) can be selected. The discharge rate is infinitely variable within variable limits. Fluctuations of the mains voltage are not corrected.
There are no connexions INTERFACE available.

Vibrator control SE606

Employment: Controlling of an electro-magnetically powered vibration hopper, which is monitored by a sensor with respect to fill level.
Features: The vibration frequency 3000 or 6000 vibrations per minute (50 Hz) can be selected. The discharge rate is infinitely variable within variable limits. Mains voltage fluctuations are not corrected. The replenishment device can also be switched to pulse operation with separately adjustable durations of pulses and pauses.
With the internal voltage supply it is possible to connect nearly all commercially obtainable sensors with PNP, NPN and NAMUR output. The separately adjustable time-lags for switching on and off and pulse operation run in synchronism with the mains frequency.
The connexions INTERFACE allow the locking or enabling of several controls SE6XX mutually as well as through a higher-order control system (PLC). For monitoring purposes, in addition the sensor and blockage conditions are transmitted to the PLC.

Motor control SE621

Employment: Switching of a conveyor, elevator or hopper, driven by a single phase alternating current motor (AC-motor, capacitor motor), which is monitored by a sensor with respect to blockage or fill level.
Features: With the internal voltage supply it is possible to connect nearly all commercially obtainable sensors with PNP, NPN and NAMUR output. The separately adjustable time-lags for switching on and off are equipped with a quartz-crystal time-base and are thus independent of mains frequency and temperature.
The motor switching-on is effected with a soft-start characteristic.
Available for the user is a valve output (AIR) which is activated together with the motor. The valve is switched off after a time-lag, in order to compensate for the overtravel of the feeder.
The connexions INTERFACE allow the locking or enabling of several controls SE6XX mutually as well as through a higher-order control system (PLC). For monitoring purposes, in addition the sensor and blockage conditions are transmitted to the PLC.

6. Technical data

	SE601	SE602	SE605	SE606	SE621	
Mains voltage (as per nameplate)	X	X	X	X	X	230V or 115V, ±10%, 50/60 Hz
Output current mains voltage	X	X	X	X	X	max. 10A, not fused
fuses	X	X	X	X	X	5 x 20 mm, max. 6.3 A superfast
Vibrator frequency	X	X	X	X		3000 or 6000 vibrations per minute at 50 Hz
	X	X	X	X		3600 or 7200 vibrations per minute at 60 Hz
Output current to vibrator	X	X	X	X		max. 6A, fused
Output voltage to vibrator	X	X				10...225V (230V) or 10...110V (115V)
Output voltage to vibrator			X	X		10...215V (230V) or 10...105V (115V)
Smooth start vibrator	X	X				0.1...1 s adjustable
Output current to motor					X	max. 6A, fused
Output voltage to motor					X	mains voltage -5V
Soft start motor					X	0.1 s
Input SENSOR	X			X	X	PNP 5 mA; NPN 5 mA; NAMUR <2 mA / >3 mA
Supply to sensor	X			X	X	24V DC / max. 100 mA, short-circuit proof
Output valve (AIR)	X				X	PNP 24V DC / max. 100 mA, short-circuit proof
Output lock/enable (INTERF. LOCK)	X			X	X	PNP 24V DC / max. 50 mA, short-circuit proof
Output operating cond. (INTERFACE L>)	X			X	X	PNP 24V DC / max. 50 mA, short-circuit proof
Output sensor (INTERFACE S>)	X			X	X	PNP 24V DC / max. 50 mA, short-circuit proof
Total consumption Sensor and outputs	X			X	X	max. 150mA
Input lock/enable (LOCK)	X	X		X	X	PNP, 24 V / 10mA
Time range ON	X			X	X	0...7.5 s or 0...15 s, switchable
Time range OFF	X			X	X	0...7.5 s or 0...15 s, switchable
Pulse operation, pulse duration				X		0.1...1.5 s
Pulse operation, pause duration				X		0.5...7.5 s
Ambient temperature	X	X	X	X	X	0...+40ºC in service, -25...+70º during transport
Protection classes	X	X	X	X	X	IP20 or IP40, see safety informations

7. Operating and indicating elements (front panels)

SUPPLY section

Rocker switch	switches supply voltage, output vibrator or motor and mains voltage	
FUSE SUPERFAST	protecting of the vibrator or motor, (incl. supply voltage 24V of SE601/606/621)	
LED SUPPLY	alight red	supply in order
	flashes (only SE601/621)	overload on supply 24V
	out	mains voltage missing

VIBRATOR section (except SE621)

LED VIBRATOR (only SE601/602)	red	vibrator switched off
	green	vibrator conveying
Sliding switch 6000/3000	vibrator frequency	vibrations per minute at 50Hz
Potentiometer 0...9	control range of vibrator	
Trimmer +	maximum control range of vibrator	

Trimmer -	minimum control range of vibrator		
Trimmer ⁄ (only SE601/602)	smooth start of vibrator		
rotary switch impulse duration ⎍ (only SE606)	steps 0.1 0.2 0.3 **0.4** 0.5 0.6 0.7 **0.8** 0.9 1 1.1 **1.2** 1.3 1.4 1.5 s		
rotary switch pause duration ⎎ (only SE606)	steps 0.5 1 1.5 **2** 2.5 3 3.5 **4** 4.5 5 5.5 **6** 6.5 7 7.5 s		
sliding switch ⎍ / ⎍⎍ (only SE606)	Changeover continuous / pulse operation		
MOTOR section (only SE621)			
LED MOTOR	red	motor switched off	
	green	motor conveying	
LOCK section (locking or enabling, except SE605)			
LED LOCK	alight red	external lock active	(switch in position LOCK)
	alight green	external enable active	(switch in position ENABLE)
	out	external lock or enable not active	
Sliding switch LOCK / ENABLE	LOCK	vibrator or motor locked with active input LOCK	
	ENABLE	vibrator or motor conveys with active input LOCK	
SENSOR section (only SE601/606/621)			
LED SENSOR	red	sensor inactive	
	green	sensor active	
	orange	sensor unstable	
Sliding switch IN / IN INVERSE	IN	vibrator or motor conveys with active sensor	
	IN INVERSE	vibrator or motor locked with active sensor	
ON/OFF sections (only SE601/606/621)			
Rotary switch ON / OFF time	steps **0** 1 2 3 **4** 5 6 7 **8** 9 10 11 **12** 13 14 15 s		
Sliding switch time ranges	x1s	steps 1s, range 0...15s	
	x0.5s	steps 0.5s, range 0...7.5s	

8. Plug connexions (rear panels)

Male receptacle 230V IN (115V IN) mains voltage 230V (115V), type IEC320, EN60320/C14

Female receptacle 230V OUT (115V OUT) switched mains voltage output, type IEC320, EN60320/F

Female receptacle VIBRATOR OUT (exc. SE621) vibrator output, type IEC320, EN60320/F

Female receptacle MOTOR OUT (only SE621) motor output, type IEC320, EN60320/F

Female receptacle SENSOR (only SE601/606/621) input / supply voltage sensor, Amphenol C91B, 4 pin

1 0V	supply voltage 0V / NAMUR -
2 PNP	PNP input
3 NPN	NPN input / NAMUR +
4 +24V	suppy voltage +24V

Female receptacle AIR (only SE601/621) valve output, Amphenol C91B, 3 pin

1 VAL-	valve -
2 PE	protection earth valve
3 VAL+	valve +

Male receptacle INTERFACE SE601/606/621 interface of subordinate SE6XX, Amphenol C91B, 6 pin

1 0V	supply voltage 0V
2 LOCK	output lock / enable
5 → 3	transit sensor condition of replenishing device
6 → 4	transit operating condition of replenishing device.

Female receptacle INTERFACE SE601/606/621 interface PLC or higher-order SE6XX, Amphenol C91B, 6 pin

1 0V	supply voltage 0V
2 LOCK	input lock / enable external
3	output transit sensor condition replenishing device
4	output operating condition of replenishing device
5 S >	output sensor, active = log. 1,
6 L >	output operating condition of vibrator or motor

Male / female receptacle INTERFACE SE602 interface PLC or higher-order SE6XX, Amphenol C91B, 6 pin

1 0V	supply voltage 0V
2 LOCK	lock / enable external
3 ----- 3	transit sensor condition of replenishing device
4 ----- 4	transit operating condition of replenishing device
5 ----- 5	transit sensor condition vibrating bowl feeder
6 ----- 6	transit operating condition of vibrating bowl feeder

Interface cable SE692 side SE6XX: male connector Amphenol C91B, 6 pin / side PLC: stripped

1	white	WH	supply voltage 0V
2	brown	BN	input lock / enable external
3	green	GN	sensor condition of replenishing device
4	yellow	YE	operating condition of replenishing device
5	grey	GY	sensor condition vibrating bowl feeder
6	pink	PK	operating condition of vibrating bowl feeder

The suitable **plugging sequence** of the **INTERFACE-connexions** determines the correct locking of a replenishing device or a linear feeder through the vibrating bowl feeder, (see applications). The correct connecting is simplified, if the individual control units are fixed already in the right sequence. This sequence corresponds to the flow direction of the parts to be conveyed:
Replenishing device → vibrating bowl feeder → linear feeder (→ PLC).
Excepted: linear feeder is locked through the vibrating bowl feeder, (possibly necessary only at 2 or 3 linear feeders in file):
Replenishing device → lockable linear feeder(s) → vibrating bowl feeder → linear feeder(s) which conveys continuously (→ PLC).

Modifications facing the serial numbers to 9815:

For all INTERFACE-connexions between control units SE6XX with serial numbers from 9900 onwards, the equal **interface cable SE691** is used. For the connexion of the entire combined control unit with a PLC, the **interface cable SE692** is used. The connexion of the locking and enabling functions between control units SE6XX as well as a possibly connected PLC results internally. The make of application specific cables is no more necessary.
The sensor and operating conditions of the replenishing device are available newly likewise at the interface connexion leading to the PLC.

9. Installation, mechanical mounting

The control units SE6XX can be used as free-standing separate components. Fixing of one or more controls is simplified by using our mounting brackets SE681 and connecting plates SE682 incl. the corresponding washers and screws. The attachment of one or more control units to an assembly installation can be standing on a baseplate or suspended underneath the baseplate. In either case make sure there is adequate air circulation, so as to prevent overheating. See Casing and accessories.

10. Putting into operation

The vibrator controls are commissioned in the following order:

1. **Assembly of the desired combination SE601/602/605/606/621.**
2. **Wiring the mains supply.**

Separate mains switches: The mains voltage has to be fed to each control unit via a mains distributor. Each control unit can be switched on or off separately with the rocker switch.

Common mains switches (cascading): The mains supply is fed individually to one control unit. The other units obtain their supply from the corresponding mains voltage output 230V (115V) OUT of the preceding control. The entire combined control unit can be switched on or off by the rocker switch of this first control unit. **The maximum current consumption of all control units may not exceed 10A !**

Functioning of the voltage supplies is indicated by the LEDs SUPPLY.

3. **Connexion of a blow-off valve (AIR)**, if provided, (24V DC, max. 100mA).
4. **Connexion of the sensors:** Carry out a functional test on the sensor with the LED SENSOR. With the sliding switch IN / IN INVERSE the sensor signal is inverted.
5. **Connexions INTERFACE with other SE6XX**, if provided. See applications.
6. **Connexion to a PLC**, if provided. See applications.
7. **Adjust the switches LOCK / ENABLE:** At all with interface cables SE691 mutually connected control units SE6XX the slide switches LOCK / ENABLE must be brought in them equal position.
   - No PLC connected: all switches only at position LOCK.
   - Locking of the control units through an active PLC-output: all switches at position LOCK.
   - Enabling of the control units through an active PLC-output: all switches at position ENABLE.

>> Before carrying out the following steps, switch off the mains voltage with the rocker switch(es)!

8. **Adjust the vibration frequency:** Set the sliding switch 3000/6000 to suit the particular vibrator (see data sheet of vibrator). If the vibration frequency is wrong, the result may be excessive current consumption or insufficient conveying capacity.
9. **Adapt the FUSE** to suit the vibrator or motor (see data-sheet of vibrator/motor). As a general rule only **superfast** fuses 5x20mm, rated max. **6.3 A** may be used.

   SE601/606/621 = Max. admissible current vibrator/motor + 50mA; SE602/605 = max. admissible current of vibrator/motor.
10. **Potentiometer and trimmers:** Set trimmers for control range (+/-), trimmer for smooth start (⁄) and potentiometer (0...9) against the stop in the counter clockwise direction.
11. **Connexion of the loads:** (VIBRATOR OUT / MOTOR OUT).
12. **Switch on mains voltage:** The vibrators may cause a slight transient but must not convey. A motor, connected at a control unit SE621, can be switched on or off.
13. **Setting the vibrator control range:** The LEDs VIBRATOR (SE601/602) must be alight green. If necessary, free sensors of parts or correct the setting of the sliding switch IN / IN INVERSE (SE601/606). A lock, if provided, must not be active, (LED LOCK out, sliding switch position LOCK), or an ENABLE signal must be active, (LED LOCK alight green, sliding switch position ENABLE). If the input LOCK is not connected, the sliding switch LOCK / ENABLE must be found in position LOCK.
    - Potentiometer 0...9: turn clockwise as far as the stop (pos. 9).
    - Trimmer + : turn clockwise until the maximum discharge rate is reached.
    - Potentiometer 0...9: turn counter clockwise as far as the stop (pos. 0).
    - Trimmer - : turn clockwise until the minimum discharge rate is reached.
    - Potentiometer 0...9 adjust to normal discharge rate, somewhere round the middle of the scale.
14. **Adjusting smooth start** (only SE601/602). This is effective every time the vibrator is switched on by the sensor or an external lock / enabling, as well as when the mains voltage is switched on. The vibrator is switched off instantaneously and cannot be adjusted.
15. **Setting the on and off times** (only SE601/606/621): Preselect the time ranges (in steps of 1 s or 0,5 s). The ON and OFF time ranges may have different settings. ON and OFF times are adjusted with the rotary switches.
16. **Setting pulse operation** (only SE606). Various versions of vibrating hoppers exhibit a vibration amplitude which is too large for continuous operation (⎍) controlled only by the level sensor. For such applications the SE606 control unit can be switched over to pulse operation (⎍⎍). The rotary switches pulse duration (⎍) and pause duration (⎍) must not be on zero for this mode.

11. Maintenance

To prevent the controls from overheating, especially when driving heavy loads, make sure there is sufficient air circulation in the region of the control units. True maintenance is unnecessary.

12. Disturbances

☹ Disturbance ✍ Observe ☞ Causes ☺ Elimination 💣 Danger ☎ External

☹ Vibrator or motor is not conveying

- ✍ LED SUPPLY not alight.
  - ☞ Rocker switch off (note cascading!).
    - ☺ Close rocker switch.
  - ☞ Fuse blown.
    - ☺ Replace fuse.
  - ☞ Mains cable missing, loose or broken.
    - ☺ Plug in mains cable correctly or replace it.
- ✍ LED SUPPLY alight, LED LOCK alight red.
  - ☞ INTERFACE connected to preceding control unit SE6XX.
    - ☺ Activate preceding control unit SE6XX..
  - ☞ INTERFACE connected to a PLC.
    - ☎ External cause, rectify by PLC experts. (Question: Locking or enabling by the PLC? If an enabling signal on input LOCK is active, the sliding switch must be brought in position ENABLE).
- ✍ LED SUPPLY alight, LED LOCK out, sliding switch in position ENABLE.
  - ☞ INTERFACE not connected.
    - ☺ Correct the sliding switch in position LOCK.
  - ☞ INTERFACE only connected to preceding control unit SE6XX.
    - ☺ Correct the sliding switch in position LOCK.
  - ☞ INTERFACE connected to a PLC.
    - ☎ External cause, rectify by PLC experts. (Question: Locking or enabling by the PLC? If a lock signal on input LOCK is not active, the sliding switch must be brought in position LOCK).
- ✍ LED SUPPLY alight, LED LOCK out and sliding switch in position LOCK, or LED LOCK alight green (only SE601/606/621).
  - ☞ Sensor function disturbed, check LED SENSOR for change of state.
    - ✍ LED SENSOR does not change or orange.
      - ☞ Sensor cable missing, broken or loose.
        - ☺ Plug in sensor cable correctly or replace.
      - ☞ Sensor wrongly set or defective.
        - ☺ Correct setting sensor or replace.
      - ☞ Control unit defective.
        - ☺ Replace control unit.
    - ✍ LED SENSOR changes, vibrator or motor switched on when sensor recognizes parts, (wait for ON time!).
      - ☞ Sensor function inverted.
        - ☺ Invert sensor function (sensor or sliding switch IN / INVERSE).
    - ✍ LED SENSOR changes, vibrator or motorremains switched off, LED VIBRATOR / MOTOR remains red (wait for ON time!).
      - ☞ Control unit defective.
        - ☺ Replace control unit.
- ✍ LED SUPPLY alight, LED VIBRATOR green (except SE606/621).
  - ☞ Fuse in vibrator defective.
    - ☺ Replace fuse.
  - ☞ Vibrator cable defective, missing or loose.
    - ☺ Plug in cable correctly or replace.
  - ☞ Vibrator defective.
    - ☺ Replace vibrator.
- ✍ LED SUPPLY red, LED MOTOR green (only SE621)
  - ☞ Motor cable defective, missing or loose.
    - ☺ Plug in cable correctly or replace.
  - ☞ Motor capacitor defective.
    - ☺ Replace capacitor.
  - ☞ Motor defective.
    - ☺ Replace motor.
      - 💣 Intervention only by qualified experts, see Safety!

☹ Vibrator or motor conveys continuously, cannot be locked

- ✍ LED VIBRATOR / MOTOR green (SE606 without LED).
  - ☞ Sensor function disturbed, check LED SENSOR change of state.
    - ✍ LED SENSOR does not change or orange.
      - ☞ Sensor cable missing, broken or loose.
        - ☺ Plug in cable correctly or replace.
      - ☞ Sensor wrongly set or defective.
        - ☺ Correct setting sensor or replace.
      - ☞ Control unit defective.
        - ☺ Replace control unit.
    - ✍ LED SENSOR changes, vibrator or motor is switched off by free sensor, (wait for OFF time!).
      - ☞ Sensor function inverted.
        - ☺ Invert sensor function (invert sensor or sliding switch IN / INVERSE).
    - ✍ LED SENSOR changes, vibrator or motor remains switched on, (wait for OFF time!).
      - ☞ Control unit defective.
        - ☺ Replace control unit.
- ✍ LED LOCK alight red.
  - ☞ Control unit defective.
    - ☺ Replace control unit.
- ✍ LED VIBRATOR or LED MOTOR green, LED LOCK out, sliding switch in position LOCK.
  - ☞ No PLC connected.
    - ☺ Switch off preceding control unit SE6XX through the sensor.
  - ☞ INTERFACE connected to a PLC.
    - ☺ Switch off preceding control unit SE6XX through the sensor, or
      - ☎ External cause, rectify by PLC experts. (Question: Locking or enabling by the PLC? If the enable signal on input LOCK is not active, the sliding switch must be brought in position ENABLE).
- ✍ LED VIBRATOR or LED MOTOR green, LED LOCK alight green, sliding switch in position ENABLE.
  - ☞ No PLC connected.
    - ☺ Sliding switch must be in position LOCK.
  - ☞ INTERFACE connected to a PLC.
    - ☎ External cause, rectify by PLC experts. (Question: Locking or enabling by the PLC? If the lock signal on input LOCK is active, the sliding switch must be brought in position LOCK).
- ✍ LED VIBRATOR or LED MOTOR green, LED LOCK out, sliding switch in position ENABLE.
  - ☞ Control unit defective.
    - ☺ Replace control unit.

☹ Vibrator conveys continuously, feed rate cannot be controlled

- ✍ LED VIBRATOR green (SE601/602) or SE605/606 without LED.
  - ☞ Control range wrongly set.
    - ☺ Correct the setting of the control range, see Putting into operation.
      - ✍ Control range cannot be adjusted.
        - ☞ Control unit defective.
          - ☺ Replace control unit.
- ✍ LED VIBRATOR red (only SE601/602).
  - ☞ Control unit defective.
    - ☺ Replace control unit.

☹ **Feed rate of vibrator insufficient**

✍ LED VIBRATOR green (SE601/602) or SE605/606 without LED.

☞ Potentiometer 0...9 wrongly set.

☺ Increase feed rate by turning clockwise.

☞ Control range wrongly set.

☺ Correct setting of control range, see Putting into operation.

☞ Vibration frequency wrongly set.

☺ Correct frequency to comply with vibrator data-sheet.

💣 Do not determine the vibration frequency experimentally. A wrong frequency causes extremely high current consumption and can lead to failure of the magnet coils..

☞ Magnet coils in vibrator defective.

☺ Pull out vibrator plug. Measure the resistance of the individual coils. Replace any defective coil..

💣 Intervention only by qualified experts, see Safety!.

☞ Broken spring in vibrator.

☺ Pull out the vibrator plug. Replace defective spring. Check the air-gap.

💣 If the air-gap is too large, it can cause an extremely high current consumption and lead to failure of the magnet coils!

💣 Intervention only by qualified experts, see Safety!

☹ **Motor power insufficient**

✍ LED MOTOR green (only SE621).

☞ Wrong operation voltage of the motor, (refer to data sheet or motor nameplate).

☺ Utilize a motor with an operating voltage corresponding to the mains voltage.

☞ Motor speed insufficient.

☺ Utilize a motor with a suitable speed. **The speed of a capacitor motor cannot be changed with the SE621 control unit!**

☞ Motor defective.

☺ Replace motor.

💣 Intervention only by qualified experts, see Safety!

13. Replacement parts

Part	Value, type	SE No.	Manufacturer, standard
Fuse	5x20mm superfast, max. 4A	FF xxx (A)	Standard IEC 127
Fuse-holder cap	type FAB, Nr. 0031.3555	FABE	Schurter AG, CH-6002 Luzern
Side bars	Nr. 9550.20	SL9547	Jaeger AG, CH-3001 Bern
Corner profiles	Nr. 9551.10	EP9547	Jaeger AG, CH-3001 Bern
Knob, black	Nr. 021-3425	KN614BMS	Elma AG, CH-8620 Schöneich
Cover for knob	Nr. 040-3025	D14BM	Elma AG, CH-8620 Schöneich

The use of different replacement parts is prohibited and their installation may only be carried out by the manufacturer as stated in the information on safety.

14. Accessories

Part	Value, country, type	SE No.	Manufacturer
Mains female cable connector, or	Standards IEC320, EN60320-1/C13	KD113	
Mains cable (supplied with SE6XX)	Standards IEC320, EN60320-1/C13, cable plug as per standards of the country concerned		
	CH (SEV)	NK12113	
	A, B, D, F, N, NL; S, SF (Schuko)	NKCE7113	
Male cable connector load	Standards IEC320, EN60320-2-2/E	KS113	
Male cable connector AIR	C91B 3-pole, Type T 3274 501	KSC91E3	Amphenol
Male cable connector SENSOR	C91B 4-pole, Type T 3324 501	KSC91E4	Amphenol
Male cable conn. INTERFACE, or	C91B 6-pole, Type T 3424 501	KSC91E6	Amphenol
Interface cable SE6XX - PLC	length 3 or 5m, 1 male / 1 end stripped	SE692-3 (3m) or SE692-5 (5m)	
Interface cable SE6XX - SE6XX	length 450mm, 1 male / 1 female	SE691	
Mounting bracket		SE681	
Connecting plate		SE682	
Self-tapping csk screws	M3x8 DIN 7500M	GFSPM3X8	
Washers for csk screws	M3 SN213912	USSM3	
Front cover transparent		SE683	

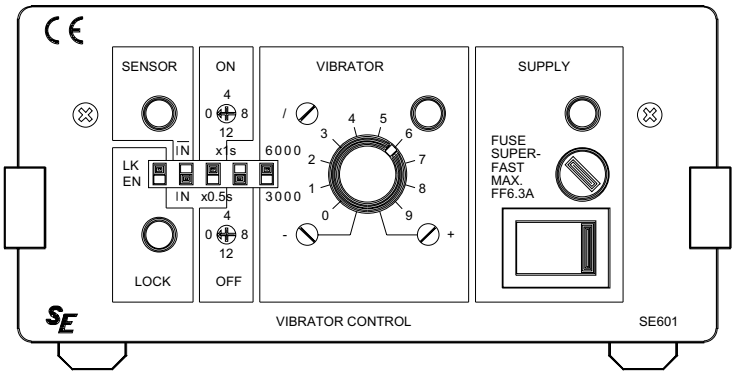
15. Disposal

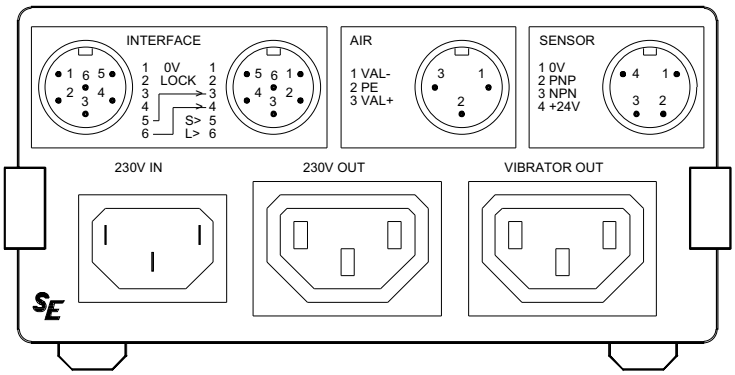
The large number of possible applications of the control units SE6XX allows them to be re-used in other installations if their original use becomes superfluous. Control units no longer required should not be disposed of as complete units but dismantled into their components by a qualified firm, according to the type of material contained, or according to the regulations of the country in question.

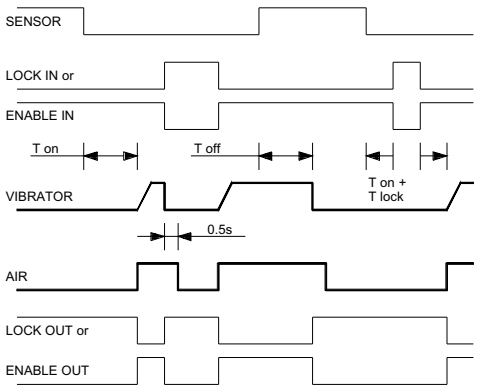
16. Copyright

17.

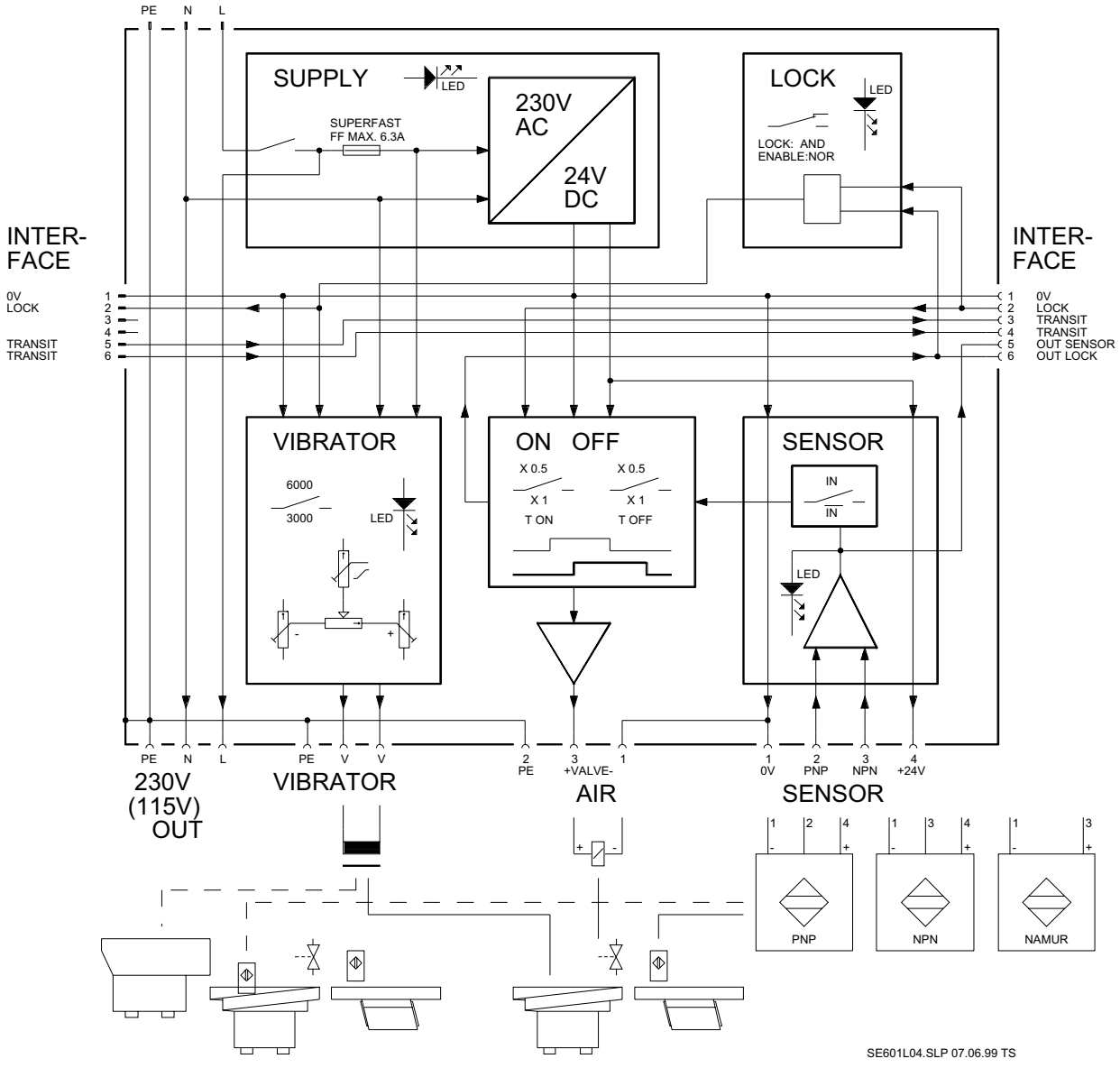
VIBRATOR CONTROL SE601







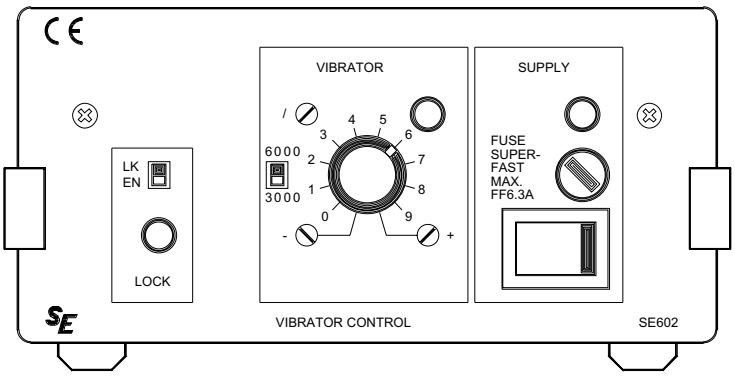
230V(115V)IN

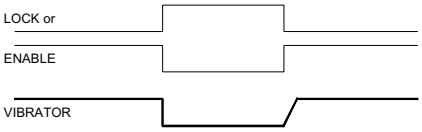


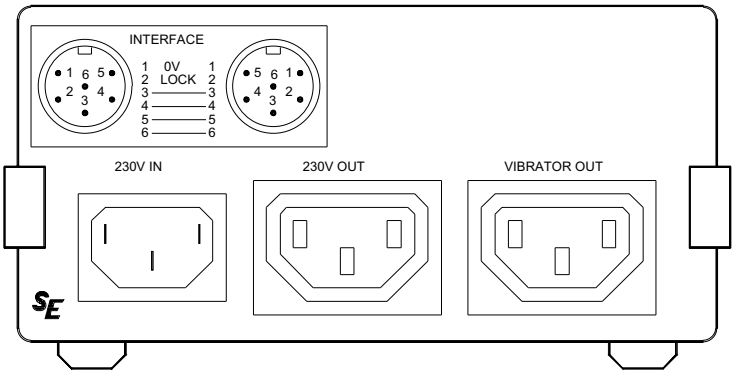
SE601L04.SLP 07.06.99 TS

18.

VIBRATOR CONTROL SE602







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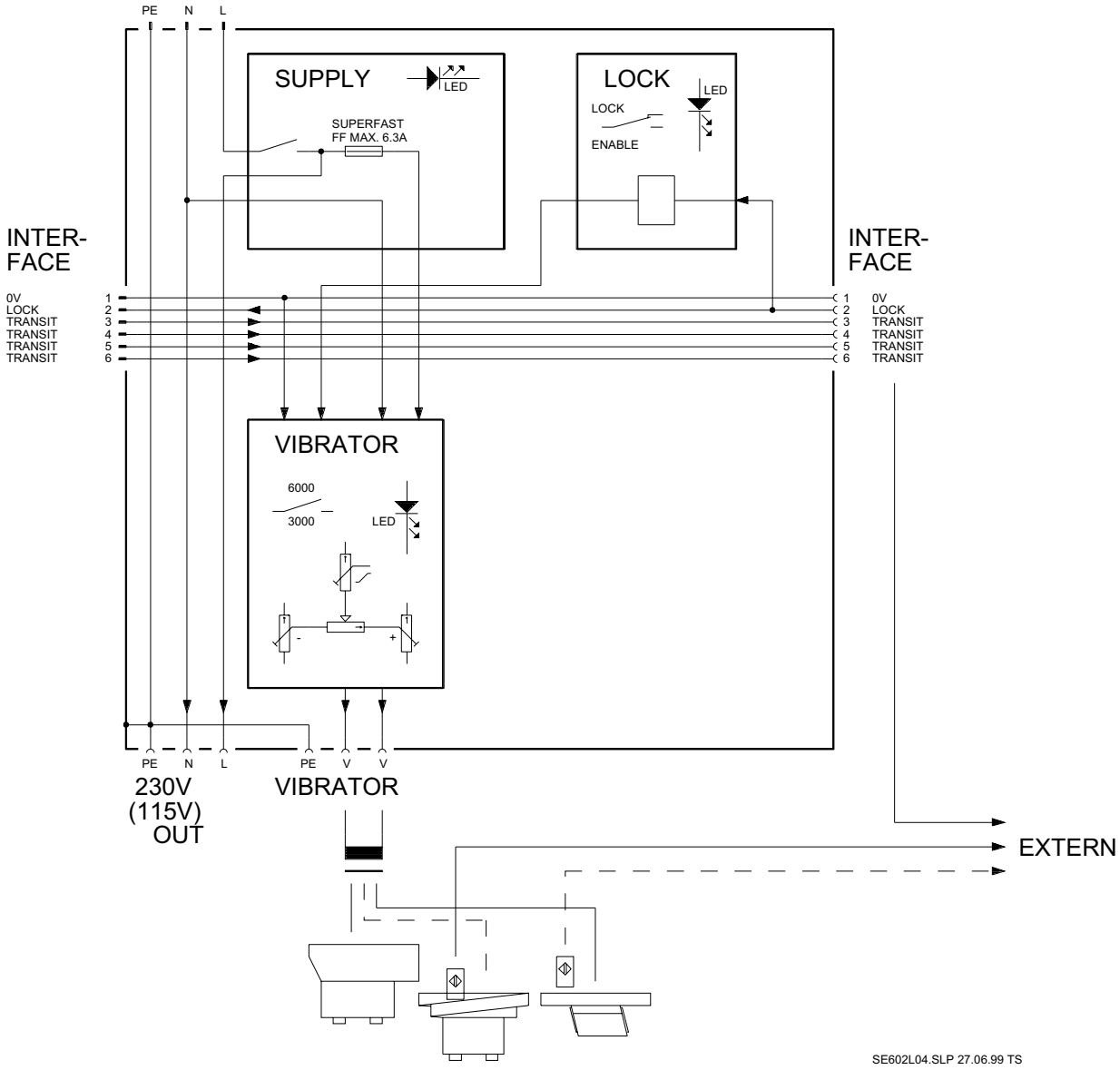

SE602L04.SLP 27.06.99 TS

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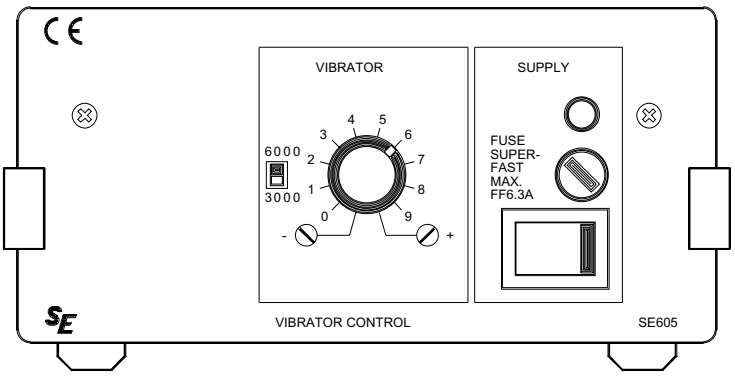
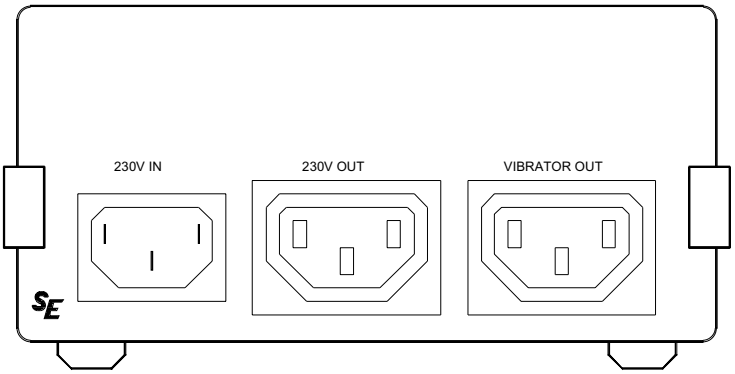
VIBRATOR CONTROL SE605





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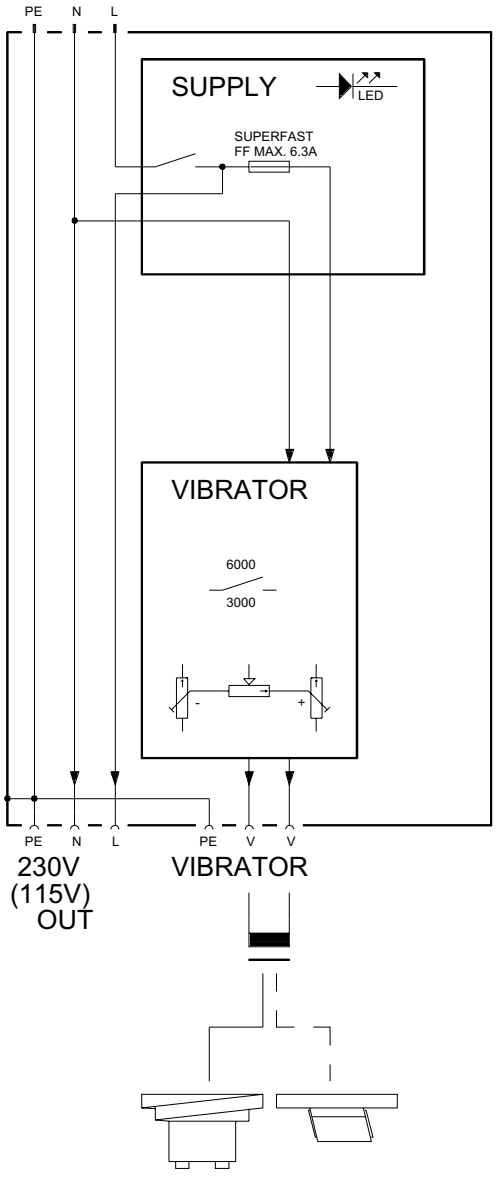

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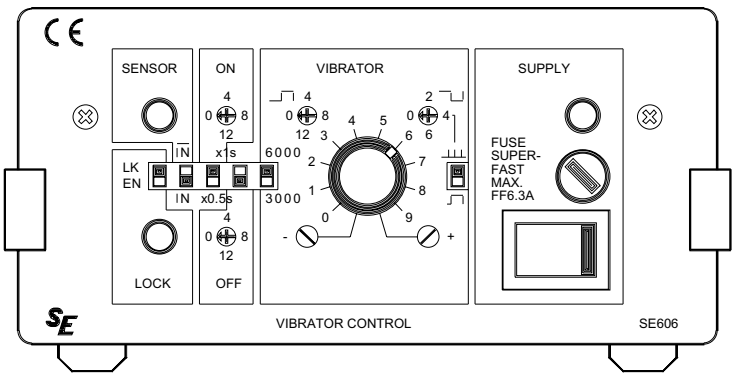
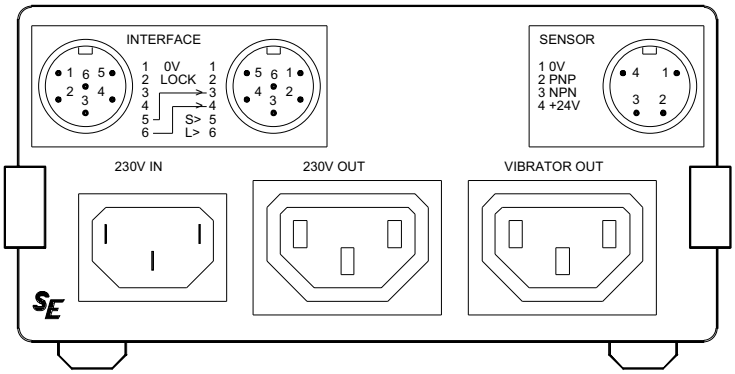
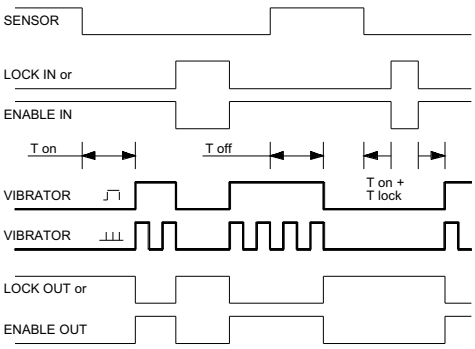
VIBRATOR CONTROL SE606







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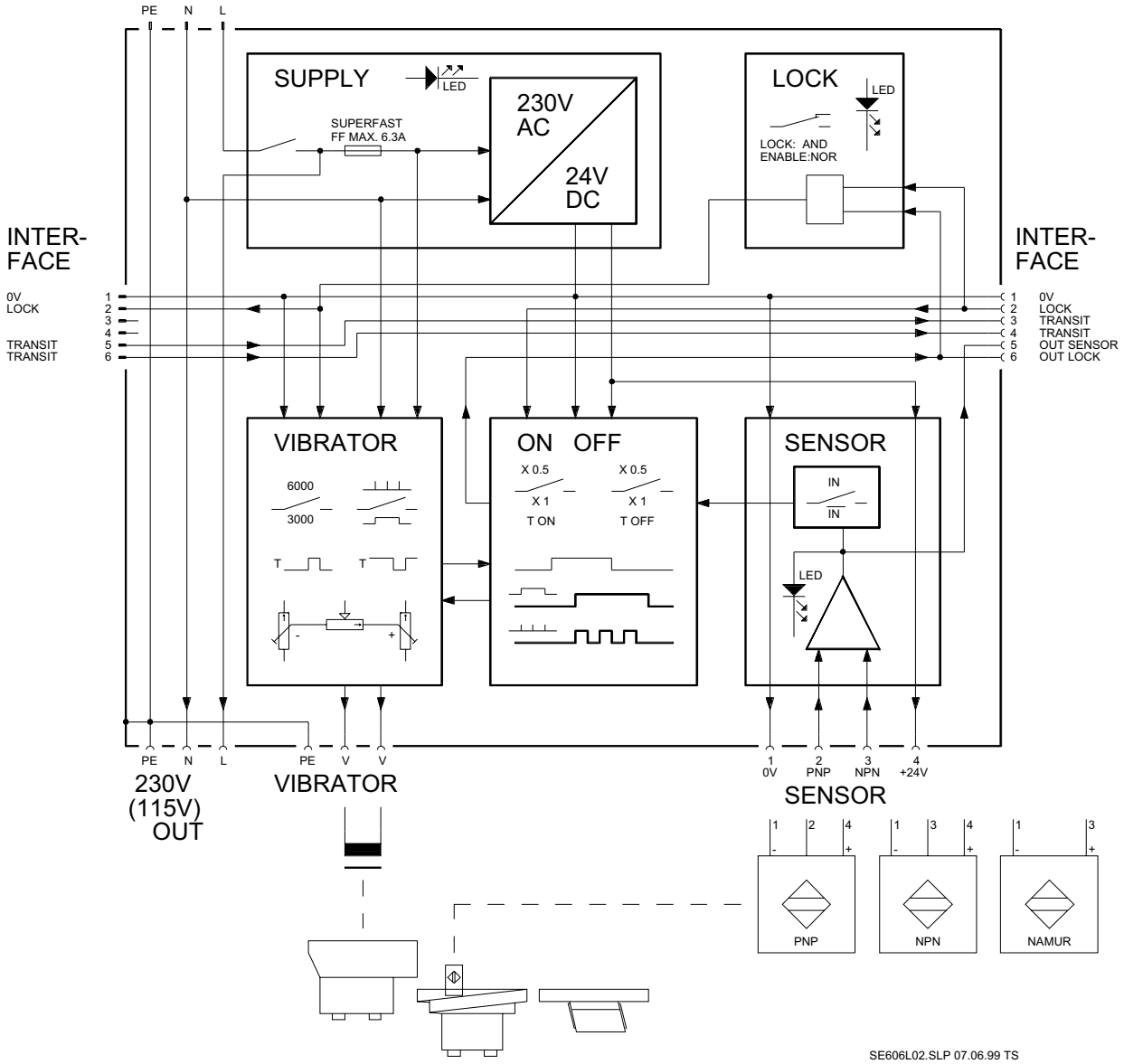
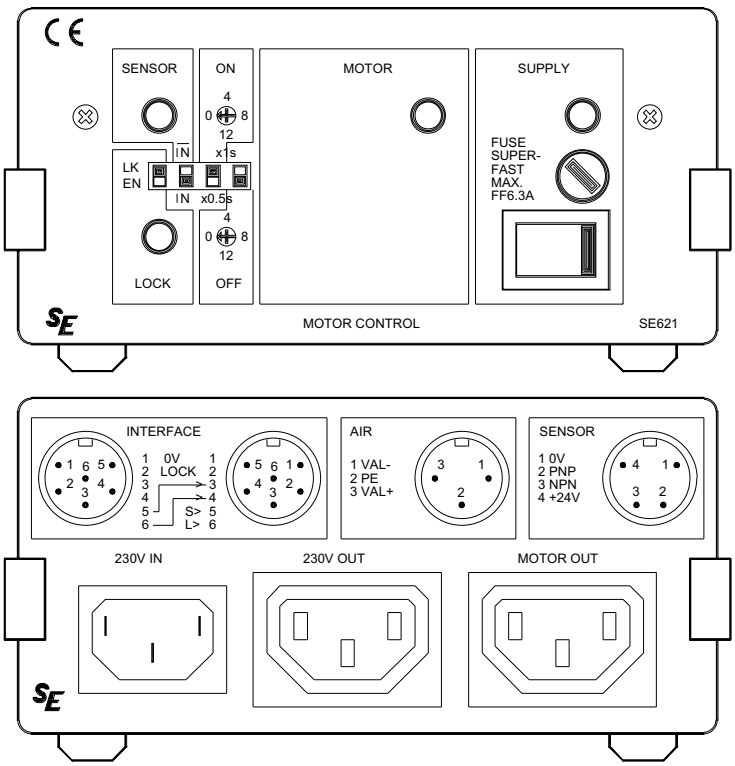
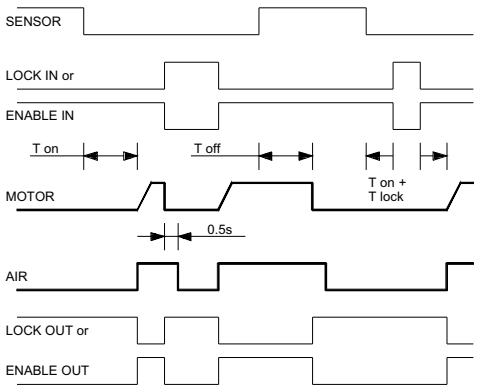


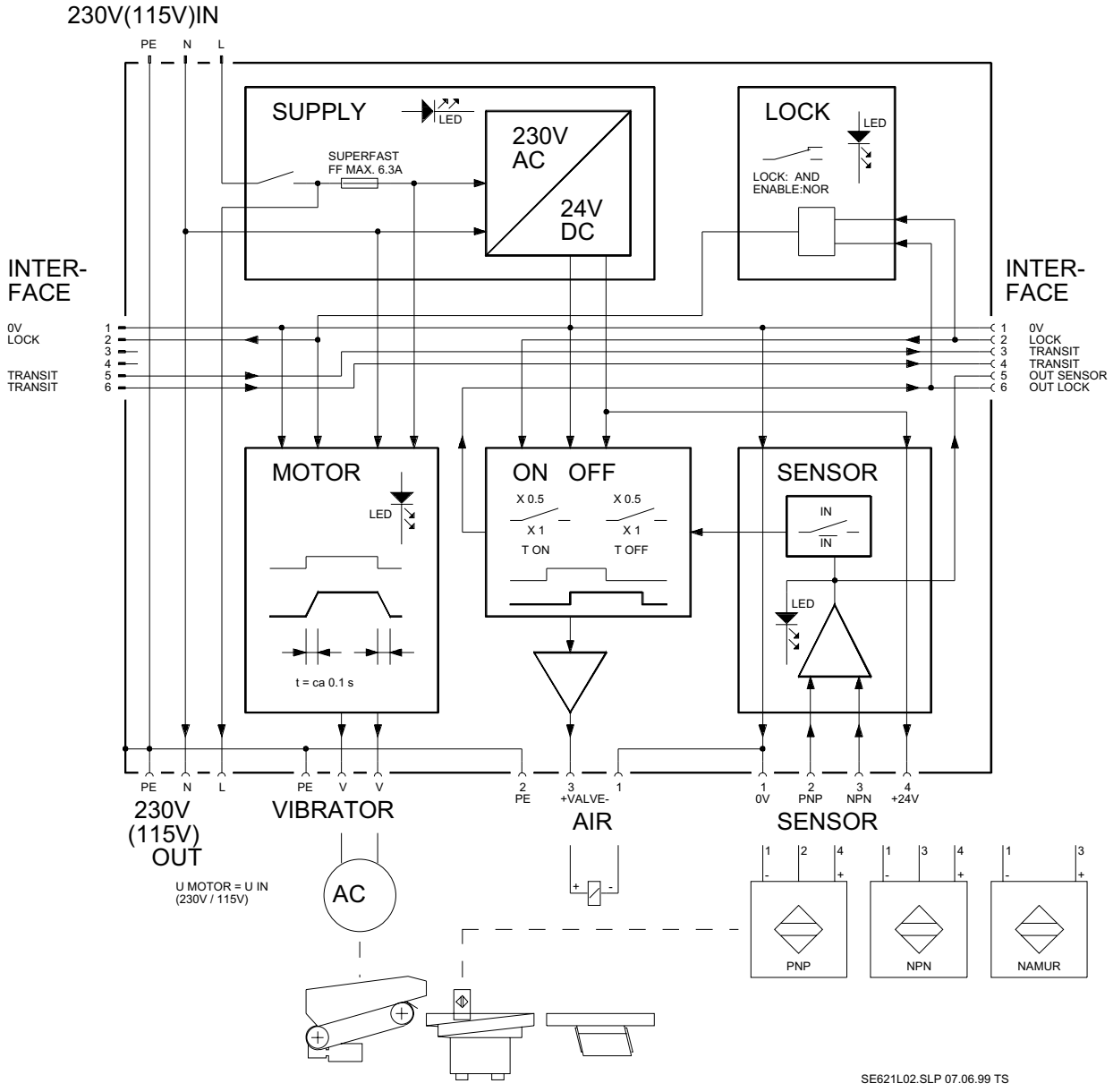
SE606L02.SLP 07.06.99 TS

21.

MOTOR CONTROL SE621

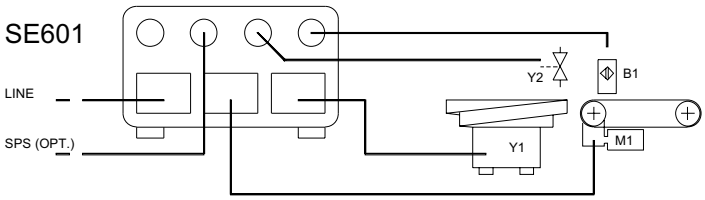


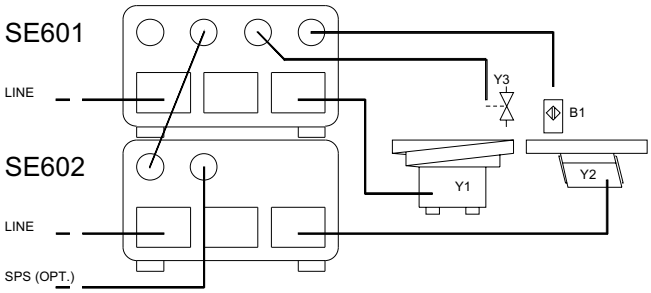


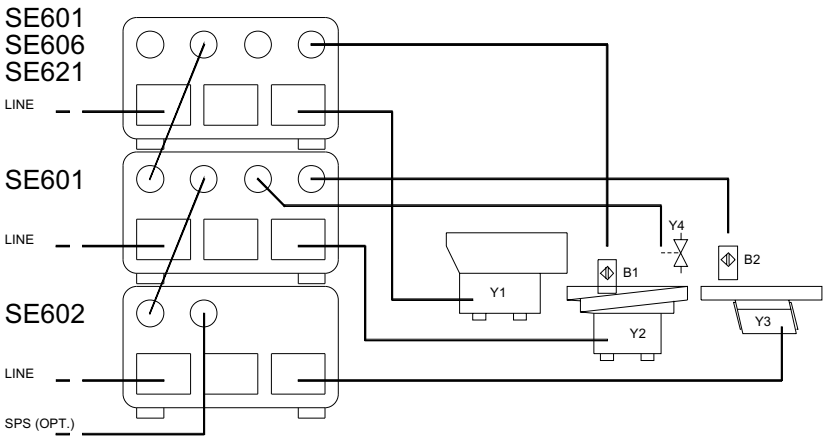


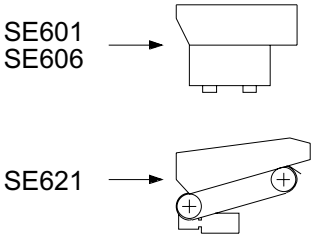
SE621L02.SLP 07.06.99 TS

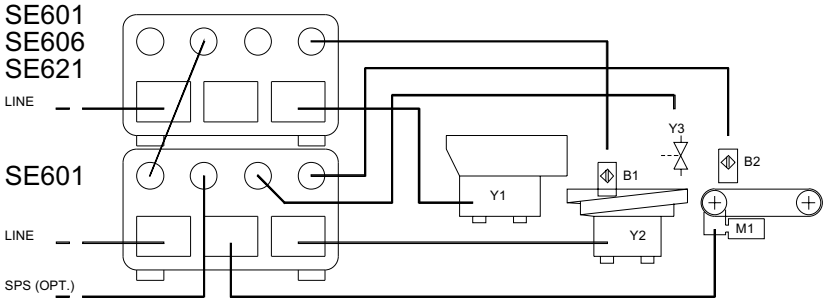
DE: ANWENDUNGEN
EN: APPLICATIONS
FR: APPLICATIONS
IT: APPLICAZIONI
SP: APLICACIONES



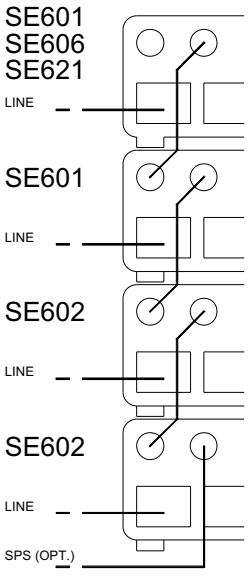




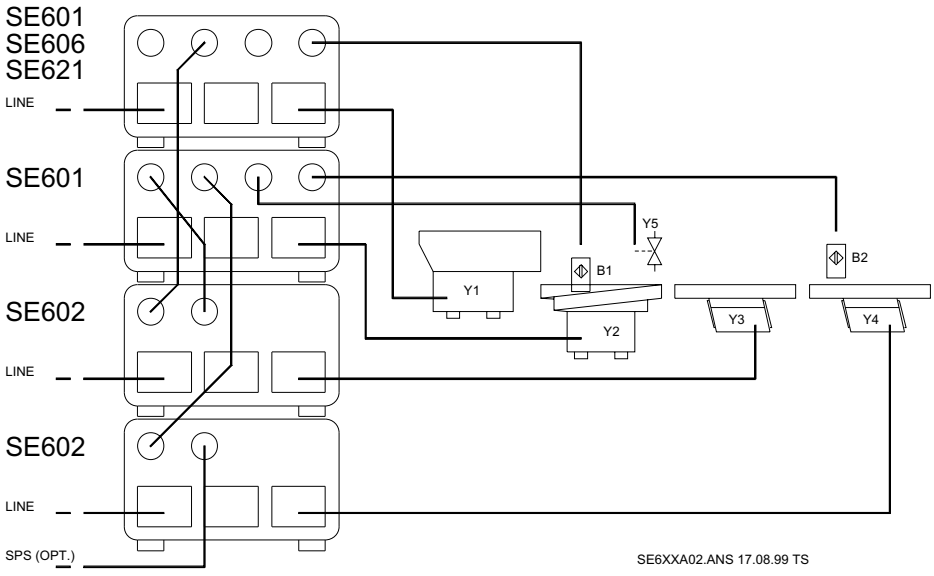


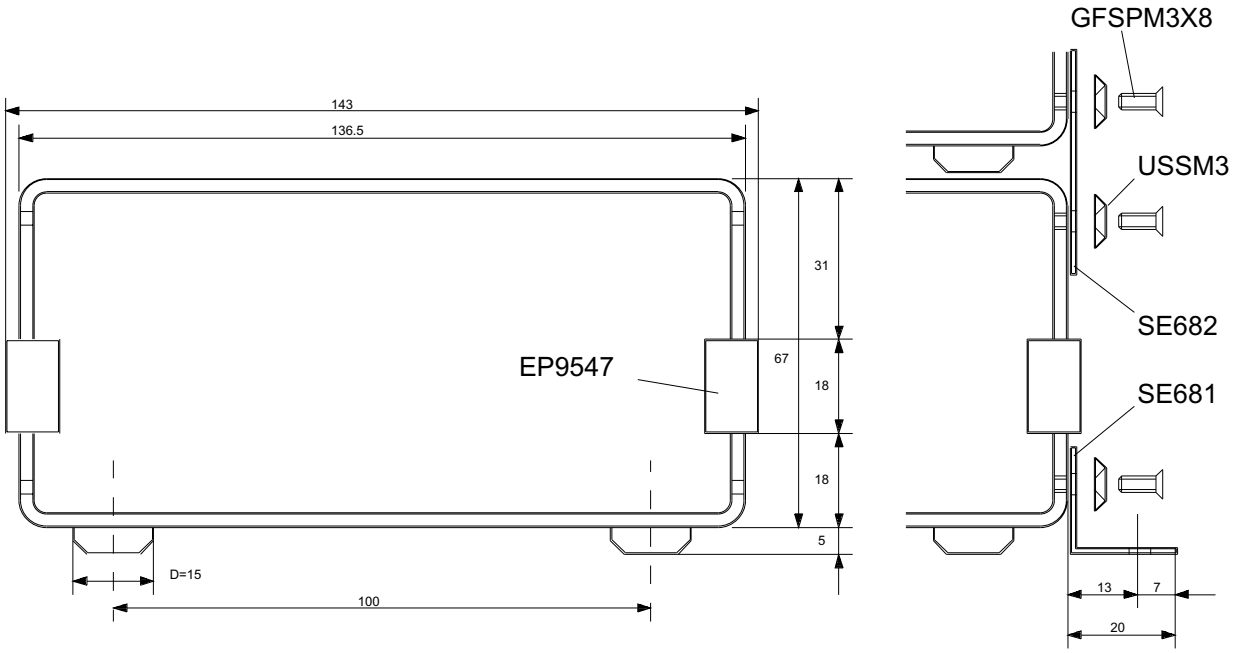


LOCK Y1 << Y2



LOCK Y1 << Y2 >> LOCK Y3

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EP9547
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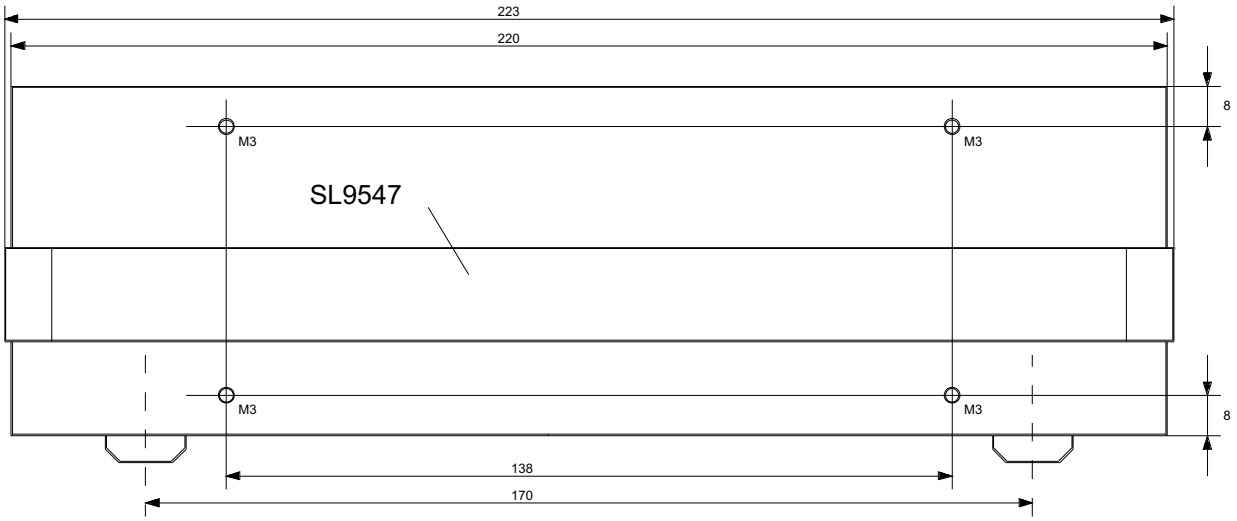
20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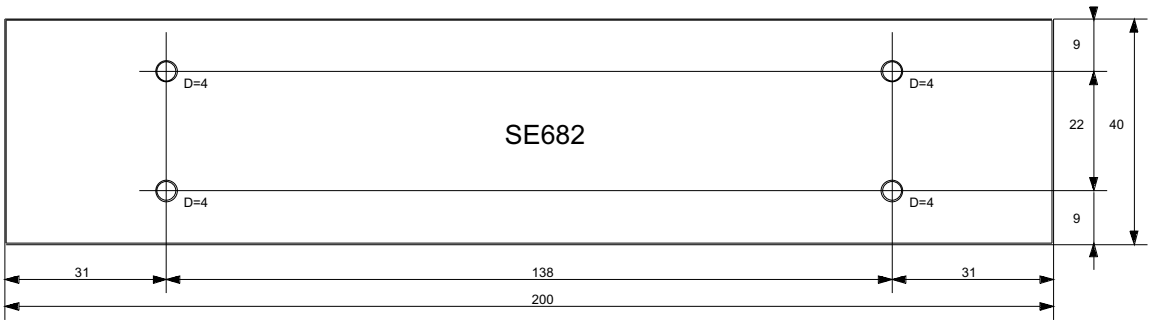
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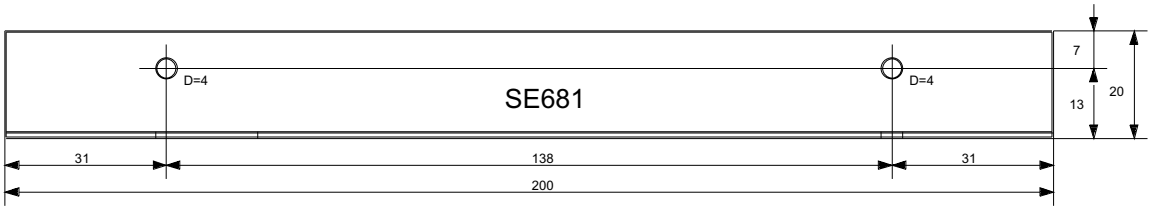
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