

BYGG-STRÖM

LUX C12

4x100W LED LIGHTING TOWER

4x200W LED LIGHTING TOWER

USER MANUAL

CE



Dear customer,

We wish to thank you very much for having purchased our product. With proper handling and maintenance, this product will provide dependable, long-term service. Our customer service is always available, might you need it.

This manual is intended for users of the equipment. This manual is compiled from information available and current at time of approval for printing.

Please consider that this manual may refer to controls and optional equipment that are not present on your particular machine.

It is important that you know your machine and its equipment and how to operate it properly, so

please read the operating instructions carefully and understand them before operating the machine.

Machine specifications can be modified at any time without any obligation to update this publications. It is recommended to read this manual thoroughly because incorrect operation may result in the warranty being void.

Reproduction of this manual is not permitted, unless written approval is obtained from factory.

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SAFETY RULES

SAFETY PRECAUTIONS TO BE OBSERVED

Read this manual and learn the operating characteristics and limitations of the machine before operating it.

The manufacturer declines all liability for injury to persons and damage to components due to not respecting the safety rules.

Report all malfunctions to a maintenance responsible. If there are any repairs to be done, do not operate the equipment. Normal service and maintenance, if performed as required, can prevent unexpected and unnecessary down time. This manual describes standard inspections, operation and servicing with the normal safety precautions required for normal servicing and operating conditions.

Operators and maintenance personnel must be safety conscious and alert to recognize potential operating or servicing safety hazards at all times. They should immediately take the necessary precautions to ensure safe operation and servicing of the machine.



Be aware of operating risks that may be created by weather changes. Follow the correct procedures in the event of heavy rain or electrical storm.

- Lower tower when not in use, or if high winds or electrical storms are expected in the area.
- Use protective clothing and safety equipment: gloves, safety boots, safety hard hat, goggles, ear protection, and dust masks when necessary.
- Know all side clearances and overhead obstructions for safe operation of the machine.
- ALWAYS** make sure area above the tower is open and clear of any kind of obstruction.
- Position and operate the lighting tower on a firm surface.
- The machine must be levelled and outriggers extended before raising tower.
- Keep area around the machine clear of people while raising and lowering the mast.
- NEVER** using the unit if it is in need of repair.
- Check that winch cables are in good condition and are centered on each pulley.
- DO NOT** use the unit if insulation on the electrical cord is cut or worn through.
- DO NOT** permit to untrained personnel to operate the machine.
- NEVER** operate a unit if you are tired, not concentrated or under the influence of drugs or alcohol.
- Keep children and animals away from the machine.

SAFETY RULES

ELECTRICAL HAZARD



Use jumper cables only. Improper use can result in severe damage and safety risk.

- NEVER** use the machine if insulation on electrical cord is cut or worn through.
- NEVER** operate lights without protective lens cover in place or with a lens cover that is cracked or damaged!

SERVICING



Only authorized and trained personnel is allowed to perform the machine maintenance.
Please read the operator's manual and maintenance manual before using or servicing the machine.

- HIGH VOLTAGE!** This equipment utilizes high voltage circuits. Always exercise extreme caution when trouble shooting or repairing any electrical circuit.
- Only a qualified electrician should troubleshoot or repair electrical problems occurring on the machine.
- Disconnect electrical power before removing protective covers on high voltage electrical closures.
- NEVER** allow water to accumulate at the base of the machine. If water is present, **DO NOT** service!
- DO NOT** service electrical components if your clothing or skin is wet.
- Never wash the unit with a high pressure hose or with any kind of power washer.
- Check and replace all missing and hard-to-read labels.
- Make sure slings, chains, hooks, ramps, jacks, and other types of lifting devices are attached securely and have enough weight-bearing capacity to lift or hold the equipment safely.

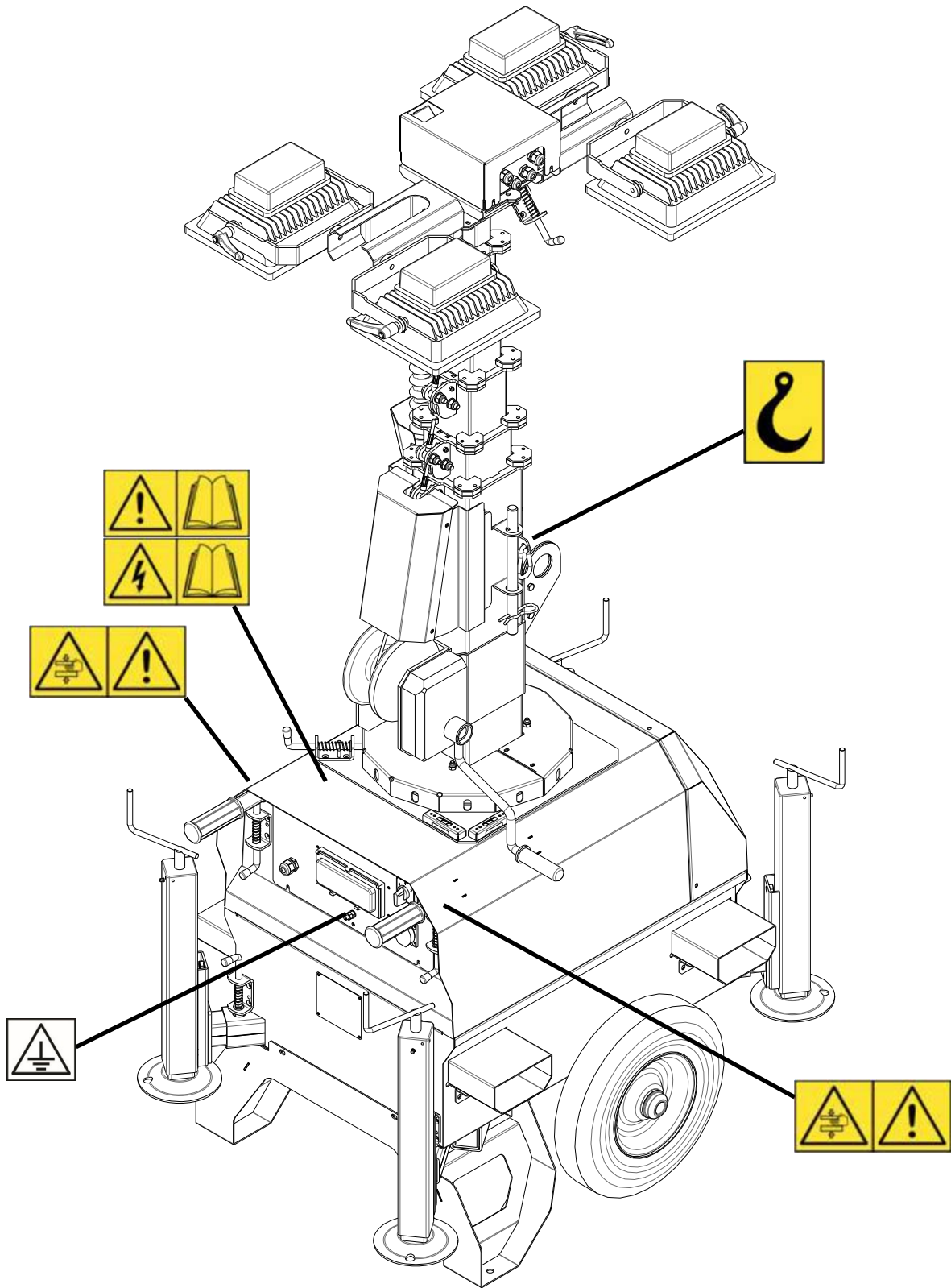
EARTHING



For operators' safety, the **grounding of the machine always needs to be done** paying attention on the section of the cable to be used (never to be less than 10 mm²). For the connection of the grounding cable, please always use the clip located on the control panel.

SAFETY RULES

SAFETY STICKERS GUIDE



SAFETY RULES

SAFETY STICKERS GUIDE

Safety stickers meanings



Attention! Read user's manual before operating the machine.



Attention, high voltage! Read user's manual before operating the machine.



Do not extinguish with water! Attention, don't touch the moving parts.



Attention! Danger of crushing.



Attention, battery on board. Contains corrosive liquids.



Attention! Diesel fuel on board. Stop the engine while refueling. Keep anything that could cause sparks, flame or fire at a safety distance from the machine.



Attention! Hot liquid under pressure during machine use and immediately after. Pay attention when opening.



Lifting point. Ensure lifting device has enough capacity to handle machine weight.



Earthing point. The grounding of the machine always needs to be done paying attention on the section of the cable to be used (never to be less than 10 mm²).

TECHNICAL SPECIFICATIONS

MACHINE IDENTIFICATION

1				
2				
Year of manufacture:		3	Type	4
5 CE	Lamps	V	14	
		W	13	
		Hz	12	
Power inlet	V	11		
	A	10		
	Hz	9		
Dimensions L x W x H		8		
Weight		7		
SERIAL N°		6		

Information regarding the machine model, code and year of production is on the unit serial number plate. Always quote the machine model and serial number when contacting your dealer, the factory and for any spare parts requests. All of our products comply with CE requirements. They are conform to directives and fulfill all the relevant safety requirements.

1. Manufacturer's logo
2. Manufacturer's address
3. Manufacture year
4. Machine model
5. CE Logo
6. Machine serial number
7. Dry weight
8. Machine dimensions
9. Power inlet frequency
10. Power inlet current
11. Power inlet voltage
12. Lamps frequency
13. Lamps power
14. Lamps voltage

TECHNICAL SPECIFICATIONS

TECHNICAL DATA

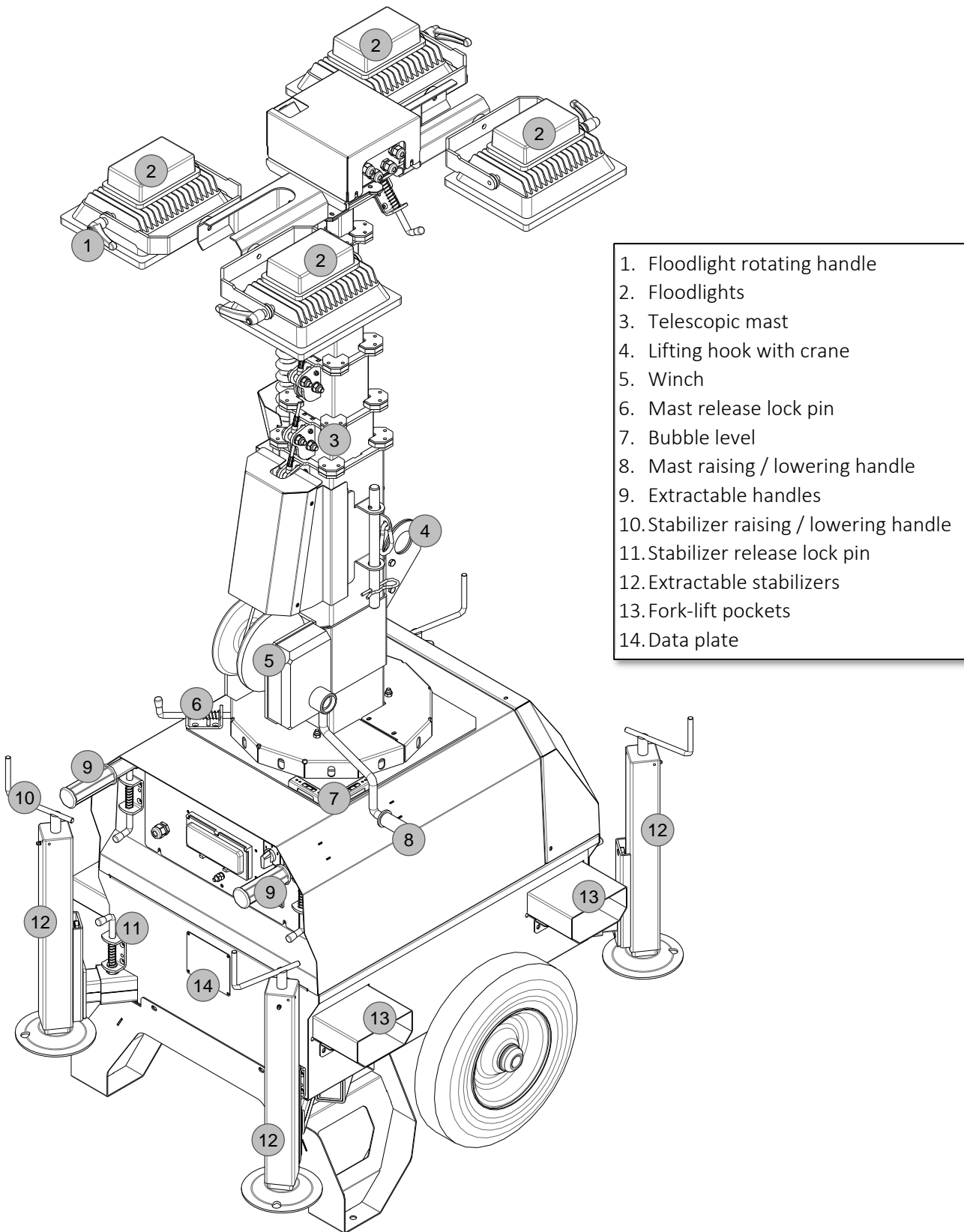
Floodlights	Power of each lamp	100W	200W
	Type	Led	
	Floodlight installed	4	
	Luminous flux	15650 lm	31300 lm
	IP Level	66	

Mast	Lifting Method	Manual
	Maximum Height	7 m
	Maximum Wind Speed (km/h)	110 km/h
	Rotation	340°

General informations	Input electrical plug	230V 16A SCHUKO
	Output electrical socket	230V 16A SCHUKO
	Maximum quantity of machines in a single chain	5
	Dimensions in transport (L x W x H)	1200 x 800 x 2340 mm
	Dimensions in operation (L x W x H)	1850 x 1450 x 7000 mm
	Dry weight	327 kg
	Trailer Type	Hand trolley

TECHNICAL SPECIFICATIONS

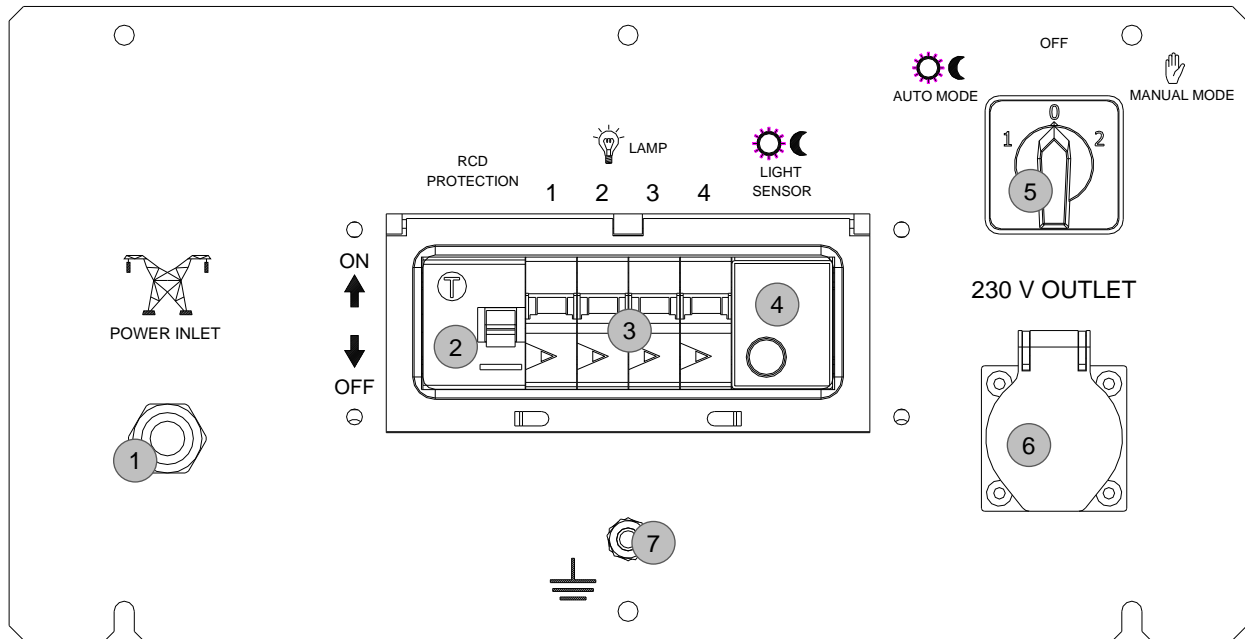
LIGHTING TOWER COMPONENTS



TECHNICAL SPECIFICATIONS

MACHINE CONTROLS

Control panel



- 1) 230V 16A Mains inlet
- 2) 13A RCD protection
- 3) Floodlights switches
- 4) Light sensor
- 5) Operation mode selector switch
- 6) 230V 16A Shuko Power outlet
- 7) Earthing terminal

LIGHTING TOWER POSITIONING

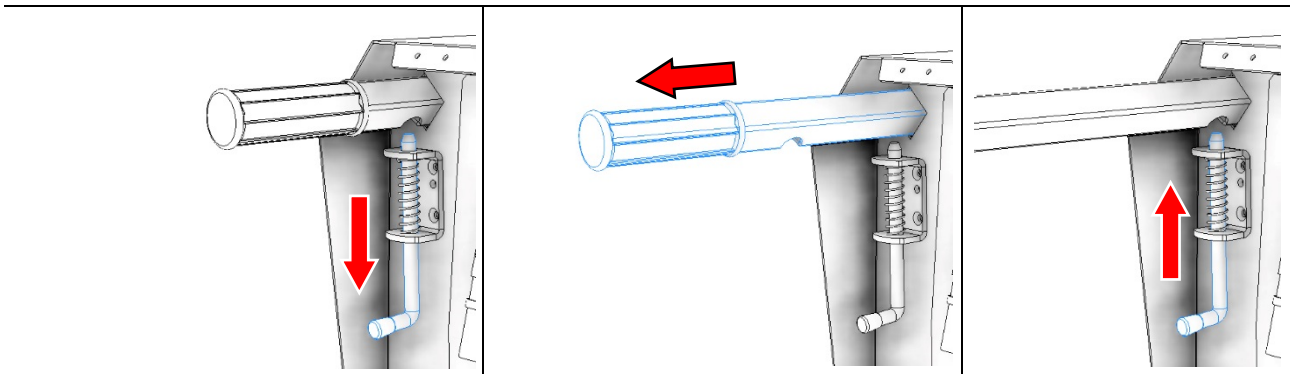
When choosing a location for the lighting tower, bear in mind the following:

- Assess site conditions carefully before positioning and operating the machine.
- The working area should be relatively level and solid. This will ensure smooth, trouble-free telescoping of the mast. (which may not telescope properly if the unit is not level.)
- **Do not position the tower in the vicinity of overhead cables or power lines!**
- **Never raise the mast or operate the tower without properly jacking the unit!**
- For maximum light coverage and illumination efficiency, locate the unit at ground level or in a spot higher than the area being illuminated by the lamps.
- **Do not move the tower with the mast raised!**

HANDLING AND TRANSPORT

HANDLING AND MANUAL TRANSPORTATION

- Hold the extendable handle with one hand and pull the locking pin to release it. Pull the handle outwards until it's fully extended and ensure that the locking pin locked it in place securely in the extended position.
- Move slowly and position the machine where needed.



HANDLING AND TRANSPORT

HANDLING AND TRANSPORT WITH CRANE

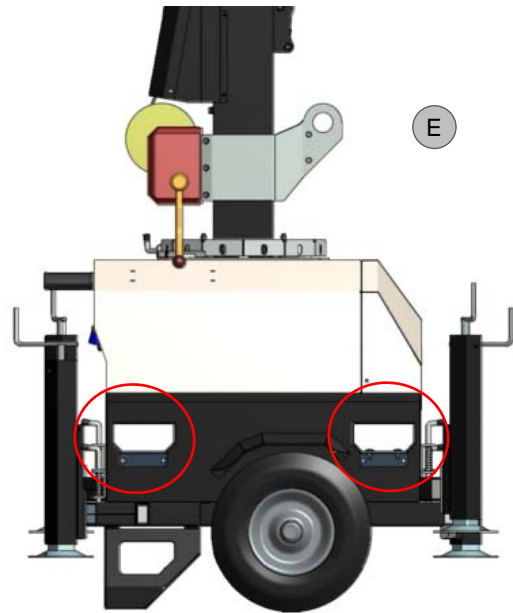
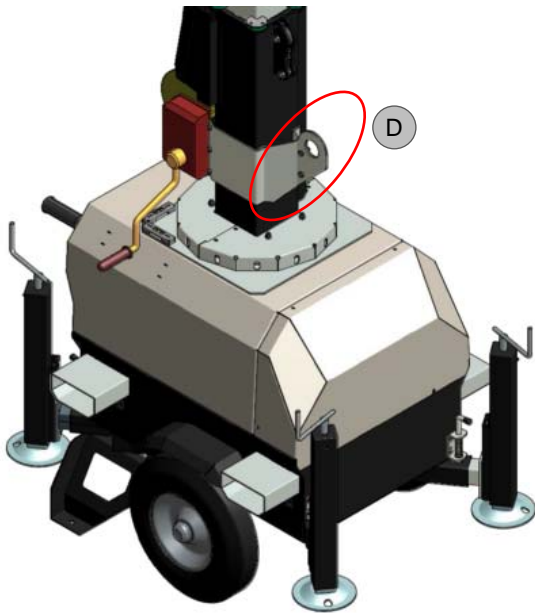


Handling by crane is allowed only if the machine is connected to the crane through the lifting eye. (C)

- Ensure that the lifting capacity of the crane and lifting devices is suited to the weight of the machine to move. The weight is specified in the provided documentation (user's manual) and on the data plate.
- Connect the cable/hook to the lifting eye (D) and tension the cable.
- Lift the machine for about 10 cm (4 in.).
- Move slowly and position the machine on the ground or on the vehicle.

HANDLING AND TRANSPORT WITH FORKLIFT

- Ensure that the lifting capacity of the forklift is suited to the weight of the machine to move. The weight is specified in the provided documentation (user's manual) and on the data plate.
- Insert the forks into the forklift pockets (E).
- Lift the machine for about 10 cm (4 in.).
- Move slowly and position the machine where needed.



LIGHTING TOWER USE

STABILIZING THE UNIT

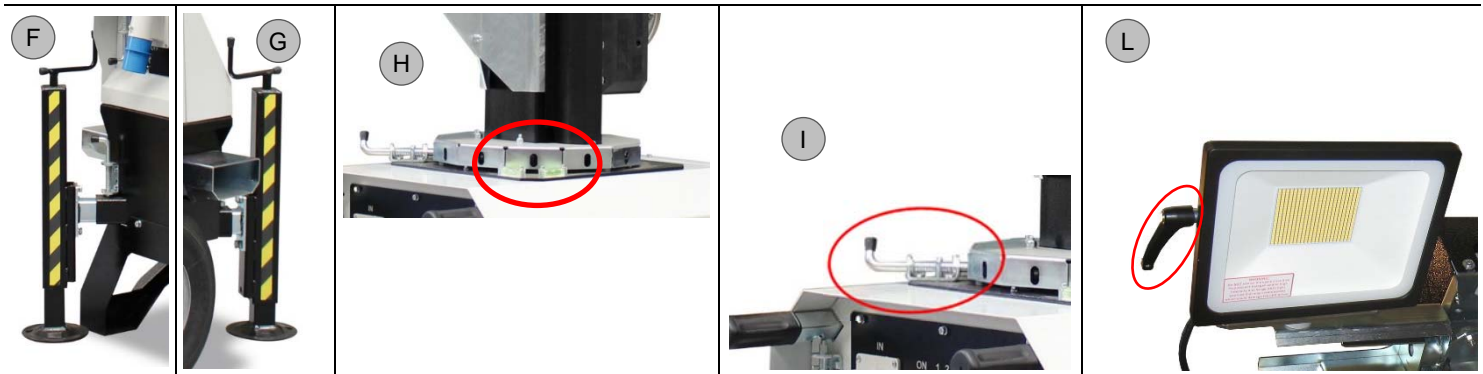
The stabilizers are extendable (F) and (G). Jack up the unit as follows.

- Hold the stabilizer with one hand and pull the locking pin to release it. Pull the stabilizer outwards until it's fully extended and ensure that the locking pin locked it in place securely in the extended position.
- Jack the unit up by rotating the handle on the top of each stabilizer clockwise.
- Please refer to the bubble levels (H) installed on top of the machine (near the mast) in order to have the machine perfectly leveled and stable before rising the tower.
- The wheels of the machine have to touch the ground at all times.

DIRECTING THE FLOODLIGHTS

The tower can be rotated up to **340** degrees in order to direct the light as required.

- Release the rotation locking pin (I) and turn the tower using the rotation handles on the mast in order to direct the lights as needed. Don't forget to lock the rotation afterwards.
- Additionally to the mast rotation, each of the LEDs can be adjusted on two axes and tilted back and forth. This way the lights can be directed either vertically or horizontally. In order to adjust the light on the vertical axes, the encircled pin (L) needs to be unlocked by pulling it and then turning the floodlight. For any adjustments, the mast must be lowered to allow access.

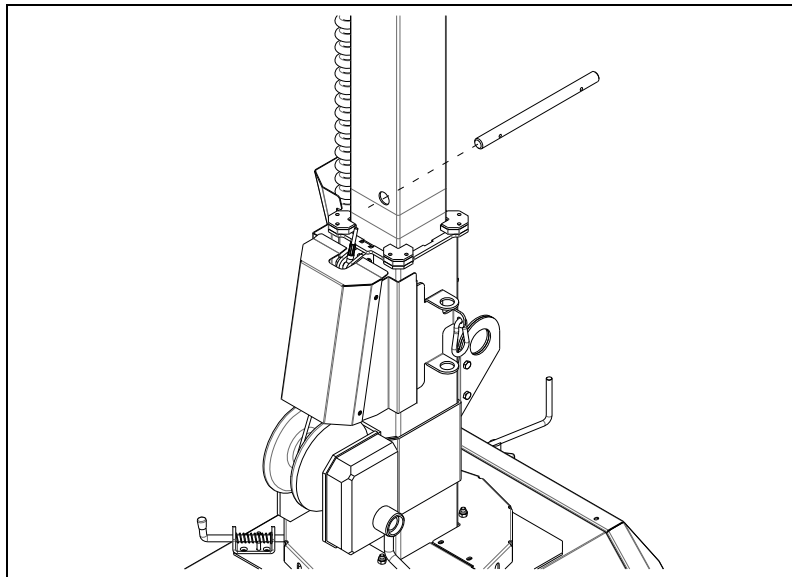


LIGHTING TOWER USE

PRELIMINARY CHECK

Before operating the unit, we suggest making the following routine checks for improved safety, better efficiency, longer product life and in order to avoid work disruptions.

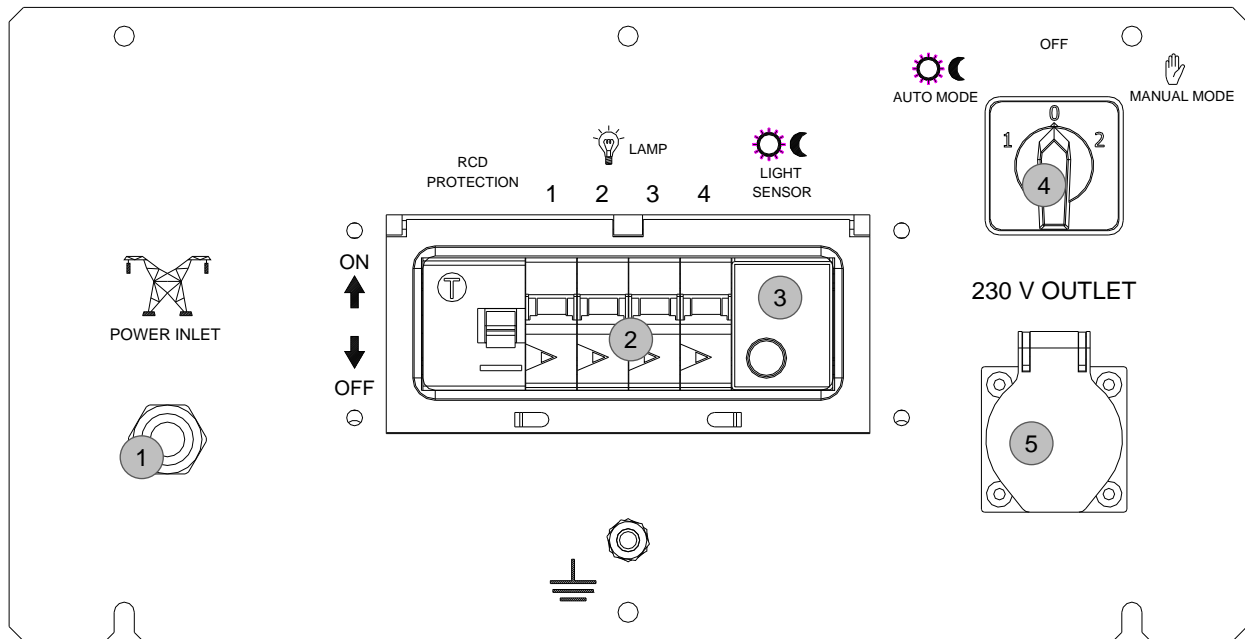
- Check that the machine is leveled correctly and stabilized firmly.
- Check that all the lamp lenses are clean and undamaged.
- After adjusting the lights, prepare to raise the tower by:
 - Inspecting the cable and replacing it, if damaged.
 - Checking mounting hardware for proper tightness and re-torquing if necessary.
 - Raise the mast and insert the safety pin supplied in the appropriate hole, see picture.
- Ensure that all the electrical cables are undamaged and correctly connected.
- Check that the main switch and the lamps switches are in the OFF position.
- Drive the earth picket into the ground (earth) following any risk assessment. (*)
- Check that the grounding cable is securely attached to the unit.
- Open the frontal door to access the control panel.



For operators' safety, the grounding of the machine always needs to be done paying attention on the section of the cable to be used (never to be less than 10 mm²). For the connection of the grounding cable, please always use the clip located on the control panel, on the right side of the machine. Always perform grounding operations in compliance with local/international regulations.

LIGHTING TOWER USE

MANUAL MODE



- Connect an electrical supply to the plug (1). Make sure that the power line is protected by an appropriate differential switch and main switches.
- Use the electrical outlet (5) to connect another unit.
- Turn the selector switch (4) in "Manual Mode".
- Switch on the lights using the switch (2).
- To turn off the lamps, turn the light switch (2) and the selector switch (4) to OFF.

LIGHT SENSOR MODE

- Connect an electrical supply to the plug (1). Make sure that the power line is protected by an appropriate differential switch and main switches.
- Use the electrical outlet (5) to connect another unit.
- Turn the selector switch (4) in "AUTO MODE".
- Set the light sensor (3) to a value between min. 25 and Max. 70.
- Switch on the lights using the switch (2).
- When the ambient brightness drops below the preset level (expressed in Lux), the LED lights turn on automatically.
- When the ambient brightness rises below the preset level (expressed in Lux), the LED lights turn off automatically.

ROUTINE MAINTENANCE

Poorly maintained equipment can become a safety hazard. In order, for the equipment, to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.

Any kind of maintenance work on the lighting tower must be carried out by Authorized and trained personnel. It should be done in a safe working environment and with the machine well stabilized. The engine must be turned off and let cool down sufficiently before starting to work on it.

- While performing maintenance work, please use suitable tools and clothes.
- DO NOT modify any component if not authorized.

The repairs cannot be considered among the routine maintenance activities. E.g. the replacement of parts that are subject to occasional damage and the replacement of electric and mechanic components that wear with use. This kind of work is not –in fact– covered by warranty.

DISPOSAL AND DECOMMISSIONING

This machine is made of parts that, if not disposed of correctly, can damage the environment and create ecological hazards. The following parts and materials need to be brought to authorized waste treatment sites:

- Metallic structure;
- Cables.

These components have to be disposed of accordingly to local laws and dispositions. Have qualified personnel disassemble the machine and dispose of parts.

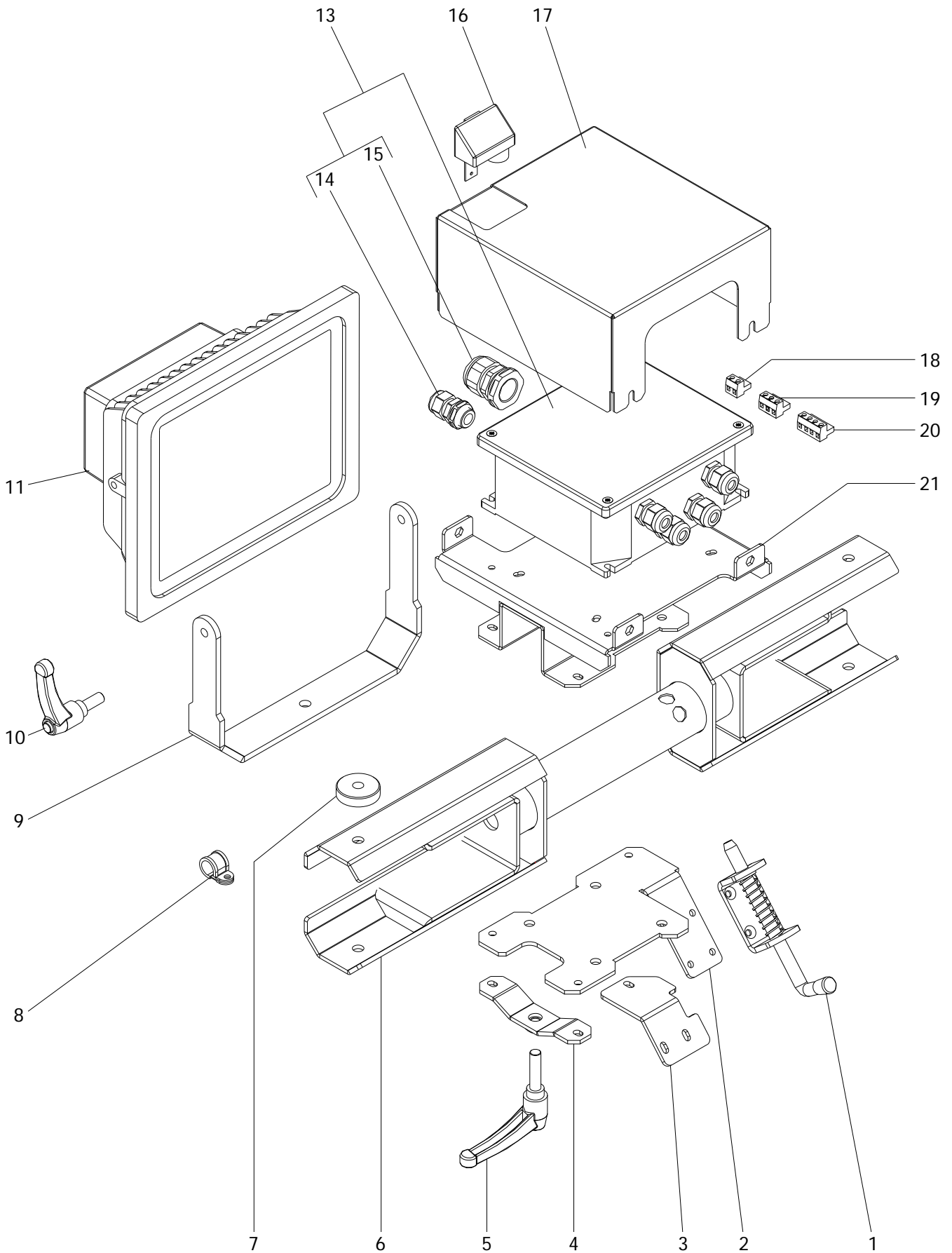
The machine owner is responsible for dismantling and disposal of the machine and its components at the end of its working life.

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LUX C12



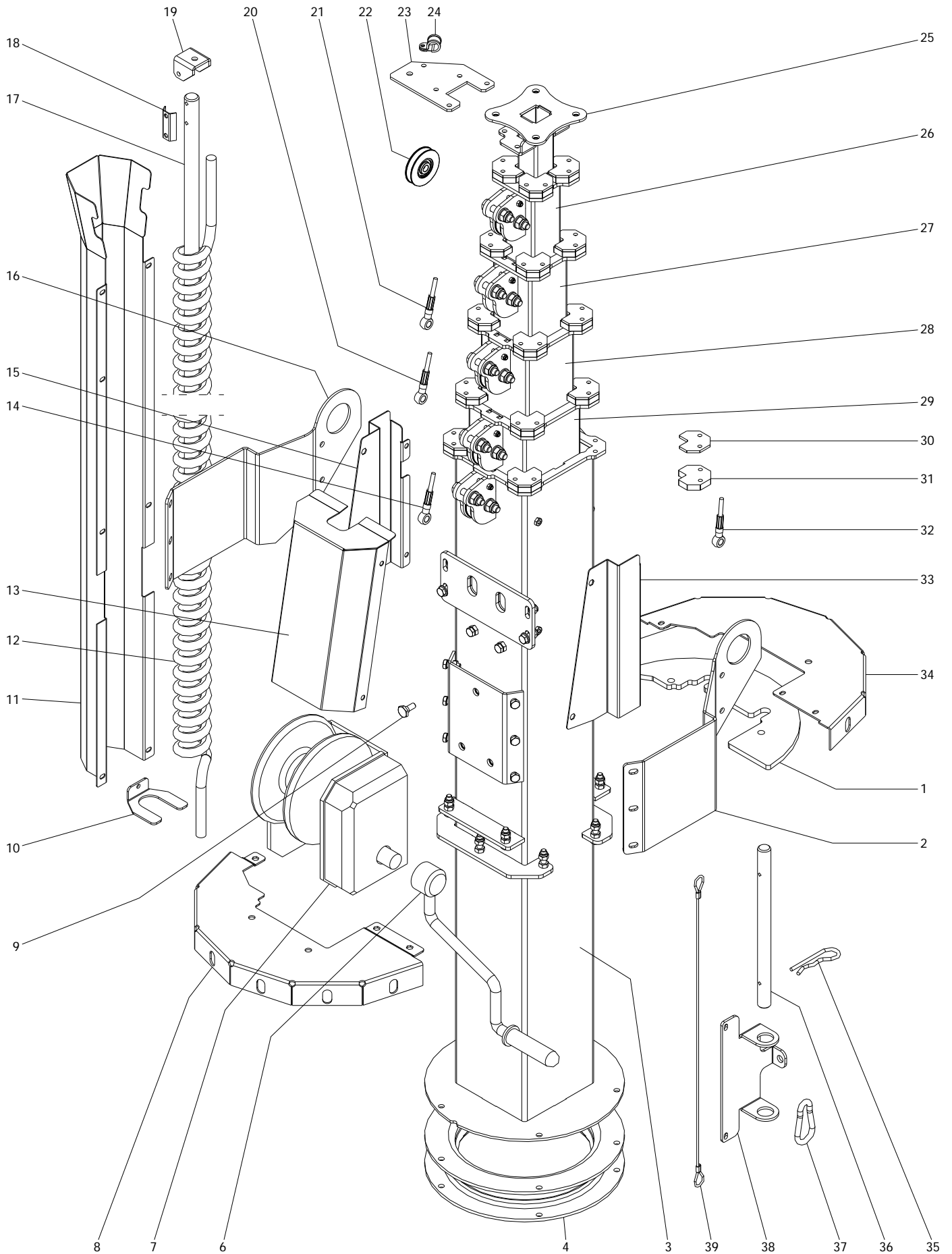
SPARE PARTS



SPARE PARTS

N.	CODE	DESCRIPTION
1	AC000_M000_086	CLOSING LOCK PIN
2	PFM07_C000_040ZN	ROTATION PLATE
3	PFM07_C000_043ZN	PLATE
4	PFM07_C000_018	HANDLE SUPPORT PLATE
5	AC000_M000_076	HANDLE M10x40
6	PFM07_C000_039ZN	CENTRAL FRAME
7	AS000_M023_025	SPACER
8	AC000_M038_007	RUBBERIZED HOSE CLAMP
9	LED04_C000_129ZN	BRACKET FOR LED FLOODLIGHT (100W)
	LED04_C000_143ZN	BRACKET FOR LED FLOODLIGHT (200W)
10	AC000_M000_036	FLOODLIGHT HANDLE
11	-----	LED 100W FLOODLIGHT
13	AS000_E006_035	JUNCTION BOX
14	AC000_E018_008	CABLE GLAND PG11
15	AC000_E018_002	CABLE GLAND PG21
16	AC000_E006_017	LIGHT SENSOR
17	PFM07_C000_042	JUNCTION BOX COVER
18	AC000_E006_002	2 POLES CLAMP
19	AC000_E006_003	3 POLES CLAMP
20	AC000_E006_004	5 POLES CLAMP
21	PFM07_C000_041ZN	SUPPORT FOR FLOODLIGHT FRAME ROTATION

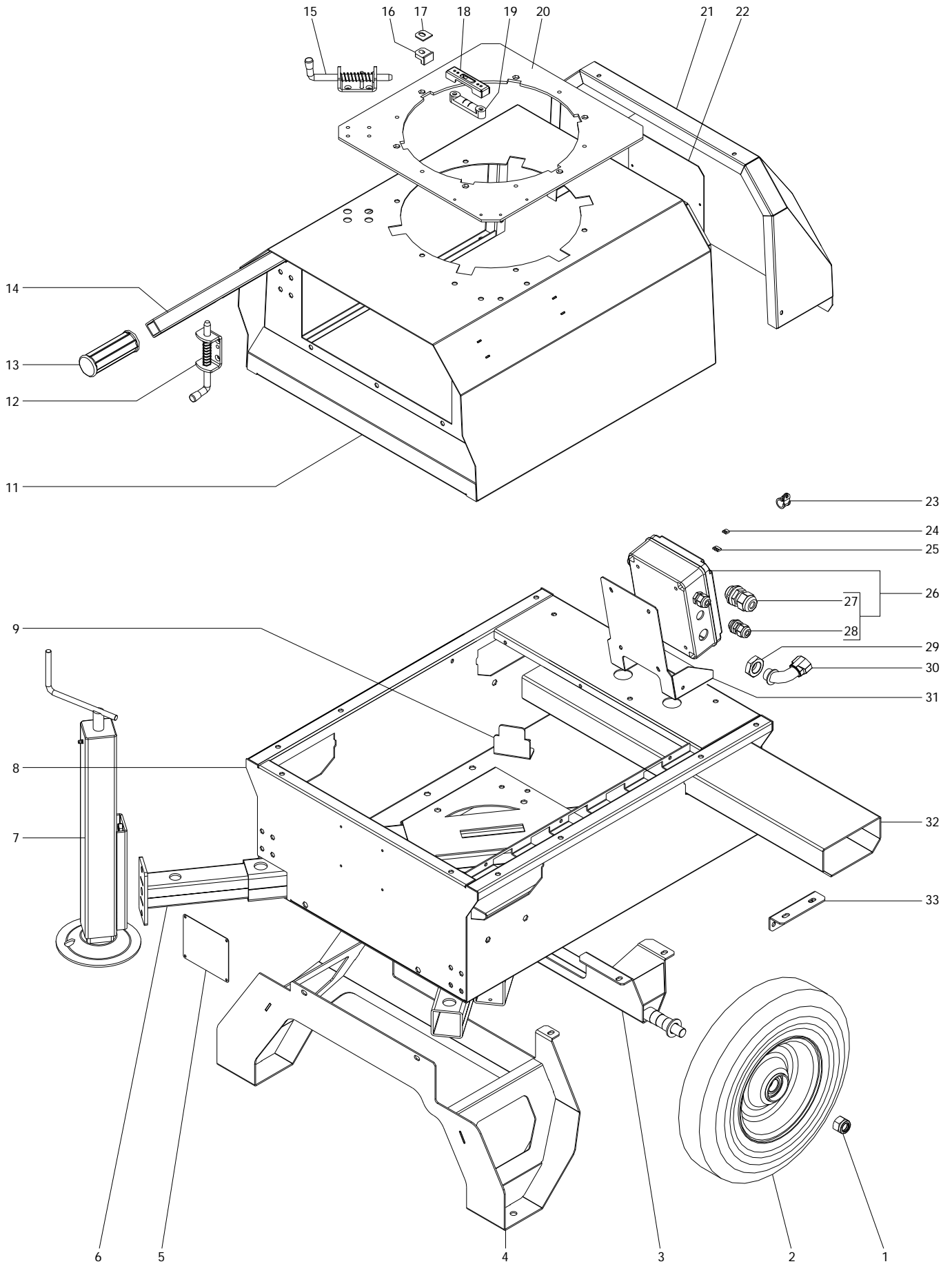
SPARE PARTS



SPARE PARTS

N.	CODE	DESCRIPTION
1	PFM08_C031_061	ROTATION FLANGE
2	PFM07_C000_022ZN	LIFTING EYE ASSEMBLY, RIGHT PART
3	PFM07_C031_075ZN	1° SECTION MAST
4	PFM07_C031_070	MAST SUPPORT
6	AC000_M000_084_01	WINCH HANDLE
7	AC000_M000_084	WINCH BODY
8	PFM08_C031_062ZN	MAST ROTATION POSITIONING DEVICE, LEFT
9	AS000_M000_029	SCREW
10	PFM08_C000_047	COILED CABLE BOTTOM PLATE
11	PFM07_C000_037	COILED CABLE PROTECTION
12	AC000_E006_016	COILED CABLE
13	PFM08_C000_018	FRONT COVER
14	AC000_M021_019	STEEL ROPE – L 1170 mm
15	PFM08_C000_020	LEFT COVER PLATE
16	PFM07_C000_021ZN	LIFTING EYE ASSEMBLY, LEFT PART
17	PFM07_C000_014	CENTERING ROD (OPTION)
18	PFM07_C000_019	CENTERING ROD CLAMP PLATE (OPTION)
19	PFI08_C031_017	CENTERING ROD SUPPORT PLATE (OPTION)
20	AC000_M021_018	STEEL ROPE – L 1210 mm
21	AC000_M021_015	STEEL ROPE – L 1200 mm
22A	AC000_M021_002	PULLEY D. 60
22B	AC000_M021_001	PULLEY D. 58
22C	AC000_M021_003	PULLEY D. 62
22D	AC000_M021_008	PULLEY D. 63
23	PFM07_C000_013	CENTERING ROD SUPPORT PLATE
24	AC000_M038_007	RUBBERIZED HOSE CLAMP
25	PFM07_C000_006ZN	6° SECTION MAST
26	PFM07_C000_035ZN	5° SECTION MAST
27	PFM07_C000_034ZN	4° SECTION MAST
28	PFM07_C000_033ZN	3° SECTION MAST
29	PFM07_C031_076ZN	2° SECTION MAST
30	PFI08_C031_012ZN	RUNNER REINFORCEMENT
31	AS000_M000_005	ANGULAR RUNNER
32	AC000_M021_009	STEEL ROPE – L 4300 mm
33	PFM08_C000_019	RIGHT COVER PLATE
34	PFM08_C031_063ZN	MAST ROTATION POSITIONING DEVICE, RIGHT
35	AC000_M000_079	FORELOCK
36	PFI08_C031_074	SAFETY PIN
37	AC000_M000_143	CARABINER
38	PFM07_C031_080	SAFETY PIN SUPPORT
39	AS000_M036_085	RETENTION ROPE

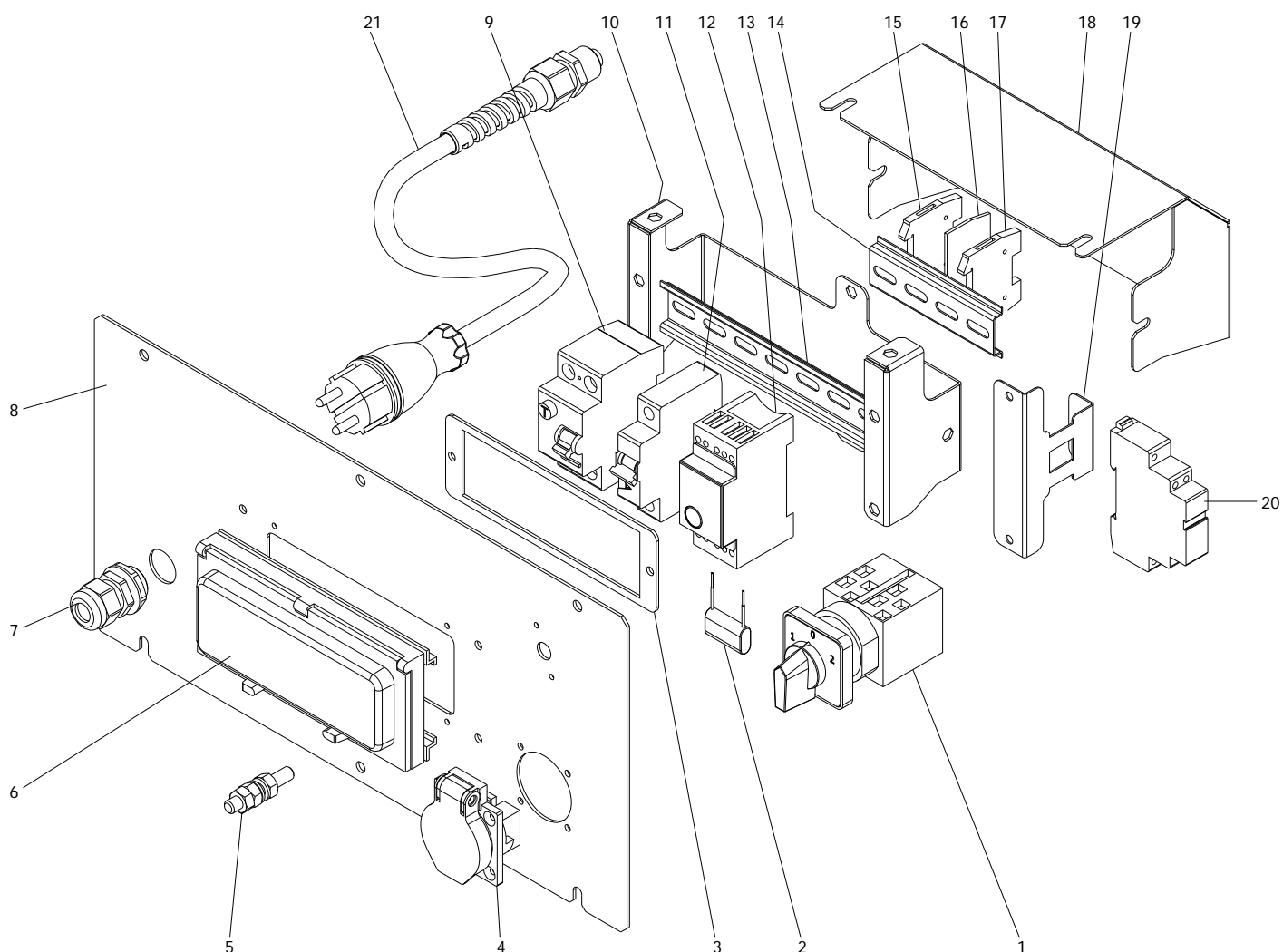
SPARE PARTS



SPARE PARTS

N.	CODE	DESCRIPTION
1	AC000_M038_044	NUT
2	AC000_M000_038	WHEEL
3	LUX C12_C003_033	WHEELS AXLE
4	LUX C12_C000_034	SUPPORT FRAME
5	LUX C12_S010_051B	DATA PLATE
6	LUX C12_C000_031ZN	STABILIZER BEAM
7	AS000_M000_048ZN	STABILIZER
8	LUX C12_C004_030	BASE FRAME
9	LUX C12_C000_036	ANTIROTATION HOLDER
11	LUX C12_C007_035	CANOPY
12	AC000_M000_086	LOCK WITH PIN
13	AC000_P037_003	RUBBER HANDLE
14	LUX C12_AS000_010ZN	HANDLE BEAM
15	AC000_M000_003	LOCK WITH PIN
16	PFI08_C031_013	ROTATIONAL AND DRAG RUNNER
17	PFI08_C031_014ZN	ROTATIONAL AND DRAG RUNNER PLATE
18	PFI08_C031_029	BUBBLE LEVEL PROTECTION COVER
19	AC000_M016_002	BUBBLE LEVEL
20	LUX C12_C000_006ZN	TOP ROTATION CENTERING PLATE
21	LUX C12_C007_056	BACK BODY COVER
22	LUX C12_C007_057	GREEN PLATE
23	AC000_M038_007	RUBBERIZED HOSE CLAMP
24	AC000_E006_002	CLAMP
25	AC000_E006_003	CLAMP
26	AS000_E006_034	JUNCTION BOX
27	AC000_E018_002	CABLE GLAND PG21
28	AC000_E018_008	CABLE GLAND PG11
29	AC000_E018_014	NUT PG16
30	AC000_E018_017	CURVED CONNECTOR
31	LUX C12_C006_050	JUNCTION BOX SUPPORT
32	LUX C12_C000_014ZN	FORKLIFT POCKET
33	LUX C12_C000_017	FORKLIFT POCKET ANGULAR SUPPORT

SPARE PARTS



N.	CODE	DESCRIPTION
1	AC000_E006_041	SELECTOR
2	AC000_E000_070	CAPACITOR
3	LUX C12_C006_044	CIRCUIT BREAKERS FRAME
4	AC000_E011_016	OUTLET SHUKO SOCKET 16A - 230V
5	AC000_M038_035	EARTHING CLIP
6	AC000_E000_008	CIRCUIT BREAKER PROTECTION
7	AC000_E018_007	WIRE HOLDER
8	LUX C12_S010_059B	FRONT PLATE
9	AC000_E012_028	13A RCD
10	LUX C12_C006_076	CIRCUIT BREAKERS SUPPORT
11	AC000_E012_027	LAMP SWITCH
12	AC000_E016_004	LIGHT SENSOR
13	AC000_M038_038	DIN BAR L 175
14	AC000_M038_049	DIN BAR L 100
15	AC000_E006_021	TERMINAL BOARD ELEMENT
16	AC000_E006_024	TERMINAL BOARD COVER
17	AC000_E006_022	FINAL ELEMENT FOR TERMINAL BOARD
18	LUX C12_C006_077	INTERIOR COVER PLATE
19	LUX C12_C006_065	CONTACTOR SWITCH SUPPORT
20	AC000_E006_070	CONTACTOR SWITCH
21	AC000_E011_018	CABLE WITH SCHUKO PLUG

ELECTRICAL DIAGRAM

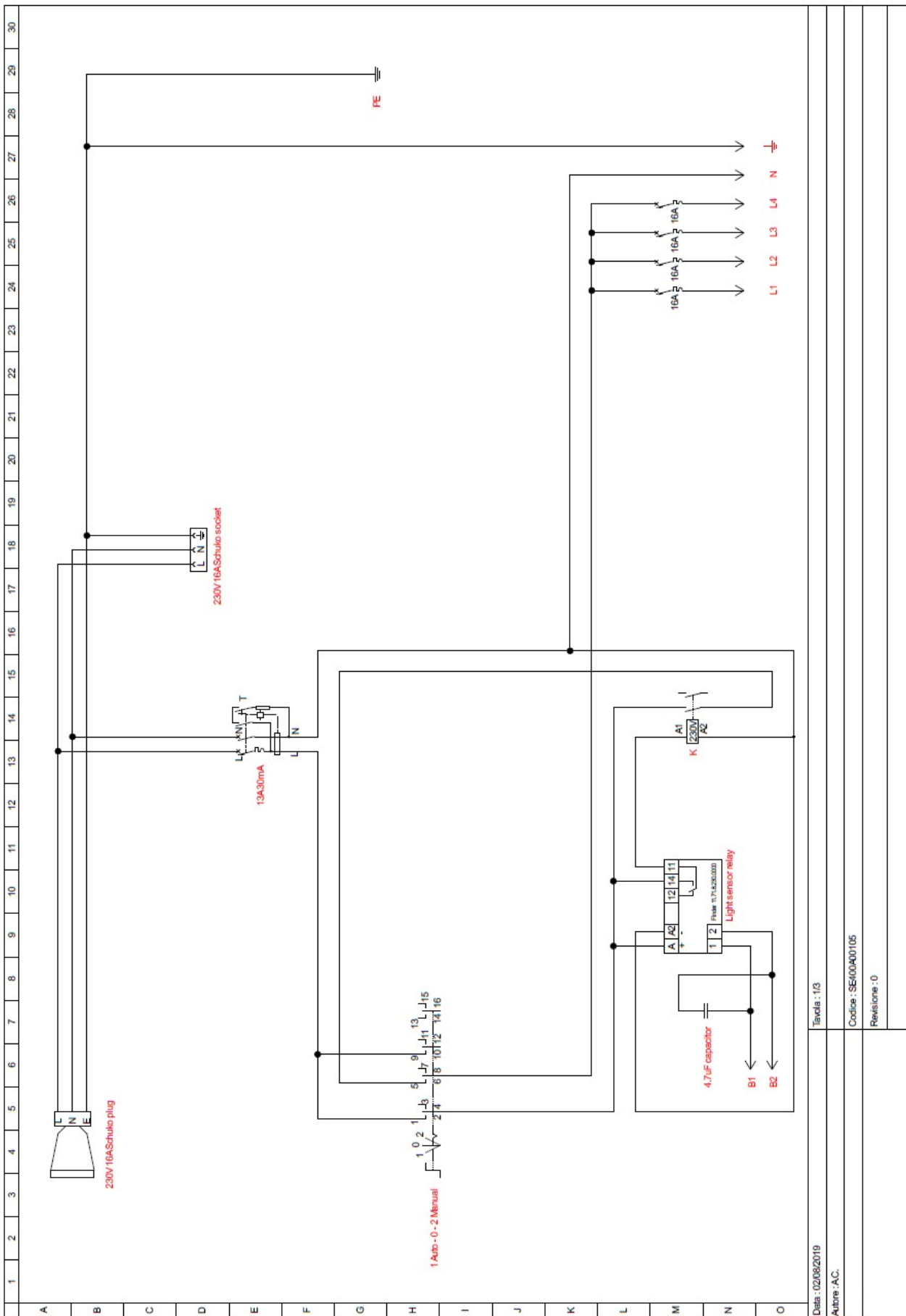


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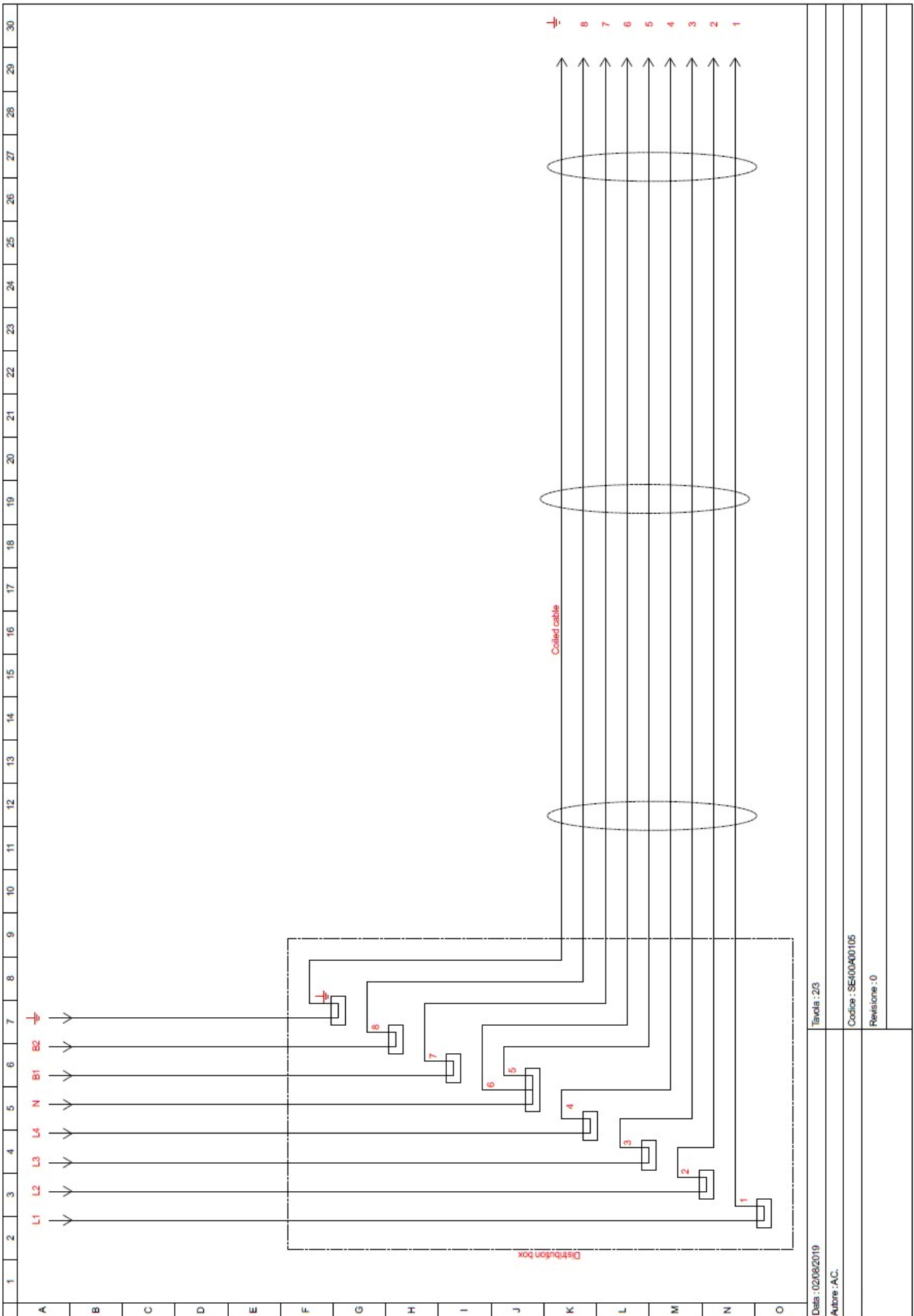
Data : 02/08/2019

Autore : A.C.

Codice : SEI00A00105

Revisione : 0

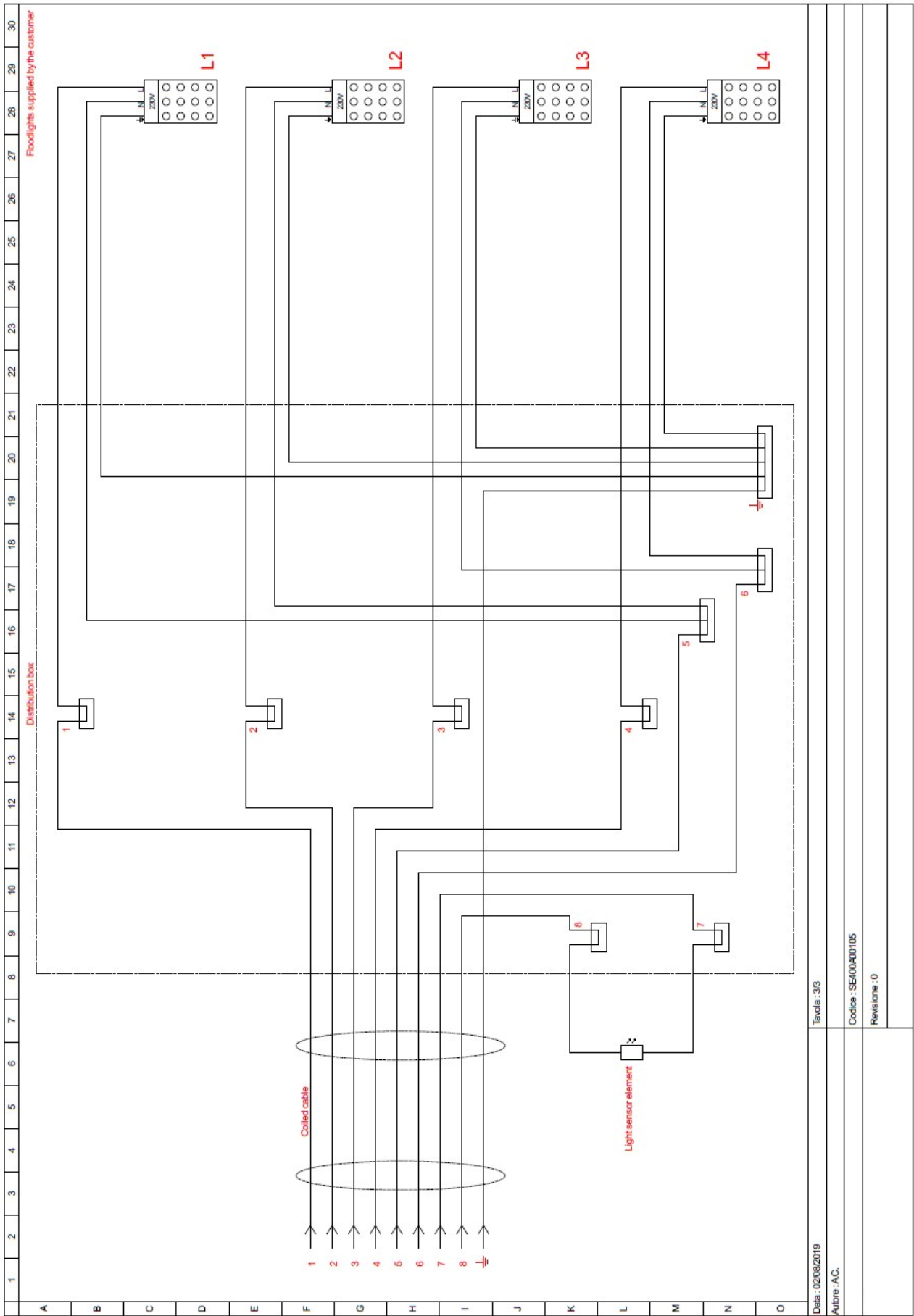
ELECTRICAL DIAGRAM



Date : 02/08/2019
 Auteur : A.C.
 Rev : 0

Tercia : 2/3
 Codice : SEI00A00105
 Revisione : 0

ELECTRICAL DIAGRAM



Data : 02/08/2019

Auteur : A.C.

Tavola : 3/3

Codice : SEI00A00105

Revisione : 0

The warranty period Starts on the delivery date to the first purchaser. **The machine is covered by warranty for 1 year from the above mentioned date. Only genuine parts should be used to carry out repairs.** Failure to use only genuine parts may invalidate the manufacturer's warranty. The company reserves the right to request the warranty replaced parts back for analysis.

All engine warranty issues must be directed to the engine manufacturer, or the manufacturer's approved engine dealer.

The company will not be held responsible if:

- the machine has been used to perform tasks that it has not been designed for;
- the machine has undergone modifications not approved by the company;
- conditions of use have been abnormal;
- normal maintenance, compliant to requirements as set out by the manufacturer, have not been adhered to.

No payment or expenses refund should be pretended from the manufacturer for normal maintenance or servicing nor any materials used to carry out routine servicing. The warranty is intended to cover diagnosis, repair or replacement of the defective part, and actuating the repair, should a problem arise during the warranty period. These operations will be performed free of charge.

TIMER 1339613

ASTRONOMISK, 1-KANAL

BRUKSANVISNING

MALMBERGS

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Telefon: 019-58 77 00 Telefax: 019-57 11 77 info@malmbergs.com www.malmbergs.com

BESKRIVNING

Digitalt astronomiskt kopplingsur för automations och styrsystem. Tillslag/frånslag av apparaten styrs av soluppgång och solnedgång. Vid beräkning av tidpunkter för soluppgång och solnedgång används uppgifter om geografiska koordinater för den plats där uret är installerat, aktuellt datum och tidsskillnad från universell tid. Systemet beräknar skymningens slut, dvs. den fas där mitten av solskivan ligger på 6° vinkel under horisonten – solskivan syns inte men himlen är upplyst av spritt solljus. Systemet har dessutom en funktion för programmerat nattavbrott och möjlighet att förskjuta beräknad tidpunkt för soluppgång/solnedgång inom tidsområde ± 120 minuter. Kapslingen är anpassad för montering på TH35-skena och eventuell plombering av apparaten. Kopplingsuret är försett med batteribackup på 5 år för programmen och 3 år för klockan.

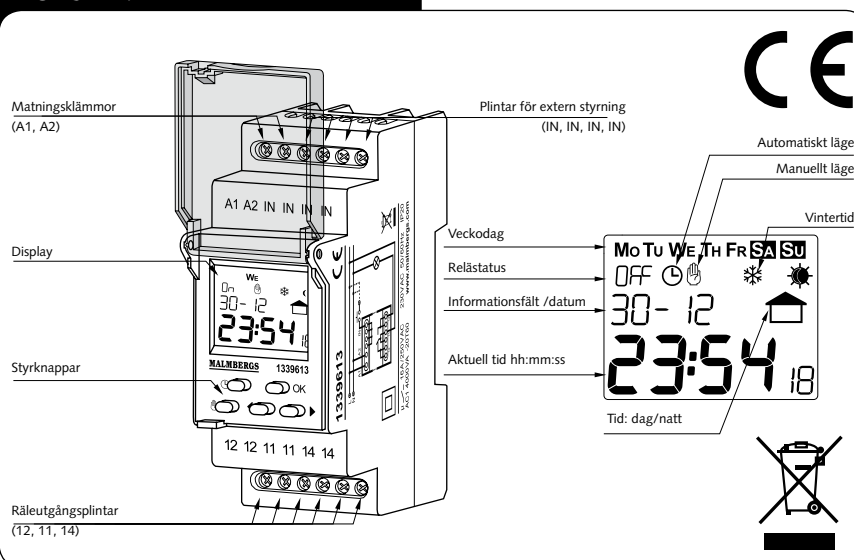
EGENSKAPER

- Astronomiskt ur
- Tidsförskjutning
- Nattfrånkoppling
- Extern styringång
- Kapsling 2 moduler med täcklock
- LCD-display med bakgrundsbelysning
- Montering på TH 35-skena

TEKNISKA DATA

1339613	
Matningsklämmor:	A1, A2
Märkspänning:	230 V AC (-15 ÷ +10%)
Märkfrekvens:	50/60 Hz
Egenförbrukning:	2 W / 14 VA
Antal kanaler:	1
Program:	astronomiskt
Driftlägen:	manuellt, automatiskt
Tidsomställning sommartid/vintertid:	automatisk, manuell
LCD-bakgrundsbelysningens färg:	Gul
Extern ingång:	ja
Noggrannhet:	max ±1 s / 24 h vid 25 °C
Backuptid uret:	3 år
Backuptid program:	5 år
Plintar för extern styrning:	IN, IN, IN, IN
Plintar för reläkontakter:	11, 12, 14
Brytförmåga, reläkontakter:	1NO/NC – 16 A / 250 V AC1 4000 VA
Antal anslutningsplintar:	12
Anslutningskabelarea:	0,2 ÷ 2,50 mm ²
Drifttemperatur:	-20 ÷ +60 °C
Driftposition:	valfri
Monteringstyp:	TH 35-skena (enligt PN-EN 60715)
Kapslingsklass:	IP20 (PN-EN 60529)
Skyddsklass:	II
Överspänningskategori:	II
Föreningegrad:	2
Dimensioner:	2 moduler (35 mm) 90x35x66 mm
Vikt:	0,17 kg
Överensstämmelse med följande standarder:	PN-EN 60730-1; PN-EN 60730-2-7; PN-EN 61000-4-2,3,4,5,6,11

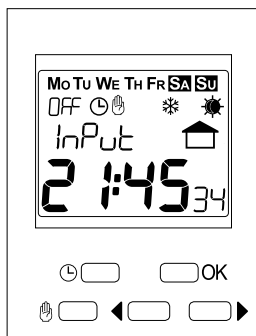
UTSEENDE



OBS

Anordningen ska anslutas till elfasnet enligt gällande standarder. Anslutningssätt finns angivet i denna bruksanvisning. Installation, anslutning och justering ska utföras av validerade elektriker som tagit del av bruksanvisningen och känner till anordningens funktioner. Demontering av kapsling medför att garantin upphör att gälla samt medför risk för elektrisk stöt. Före installationen ska man se till att anslutningsledningarna är spänningslösa. För installationer ska man använda stjärnjejsel med diameter upp till 3,5 mm. Rätt fungerande påverkas av transportsätt, förvaring och användning av anordningen. Installation av anordningen rekommenderas inte i följande fall: beståndsdelar saknas, anordningen är skadad eller deformerad. Vid felaktig funktion ska man kontakta tillverkaren.

BESKRIVNING



Beskrivning av element och meddelanden som visas

Mo Tu We Th Fr **Sa Su** veckodagar

On OFF relästatus

☉ automatiskt läge

☾ manuell läge

* vintertid

☀ sommartid

▶ extern ingång

dAY dag

YEAR år

USER användarinställning

PAUSE inställning av nattfrånkoppling

dELAY inställning av tidsjustering

t₁ m E inställning av aktuell tid och tidsomställning mellan sommartid/vintertid

dATE inställning av aktuellt datum

Coord inställning av geografiskt läge

InPut inställning av extern ingång

Sr ISE / S SET tidpunkt för soluppgång/solnedgång

Lat It / Lon G latitud, longitud

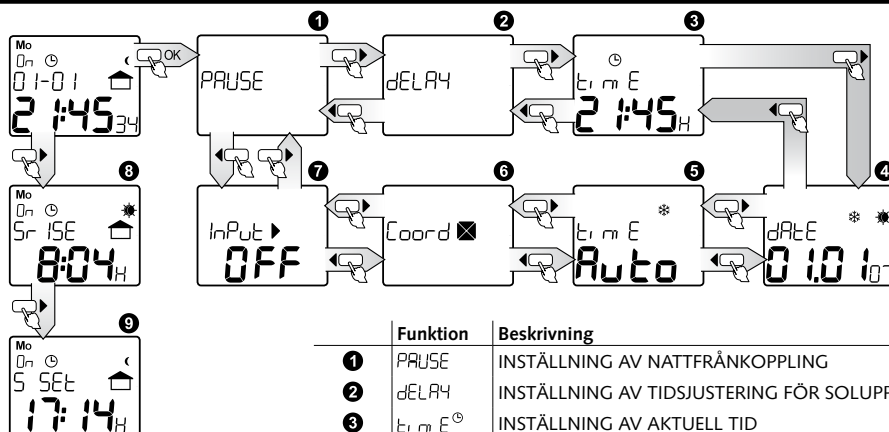
Auto automatisk

On OFF på / av

Beskrivning av knappar

☉	<ul style="list-style-type: none"> i huvudfönstret – gå till automatiskt läge eller ändra relästatus om uret redan är i automatiskt läge; i andra fönster – gå till en högre nivå utan att spara inmatade data;
☾	<ul style="list-style-type: none"> i huvudfönstret – gå till manuell läge eller ändra relästatus om uret redan är i manuell läge; i andra fönster – gå till en högre nivå utan att spara inmatade data;
OK	<ul style="list-style-type: none"> i huvudfönster – gå till huvudmenyn; i andra fönster – gå till en undermeny eller bekräfta inställt värde;
◀▶	<ul style="list-style-type: none"> växla mellan fönster/menyalternativ eller öka/minska inställt värde; höger pilknapp i huvudfönstret – visning av tidpunkten för soluppgång och solnedgång.

HUVUDMENY



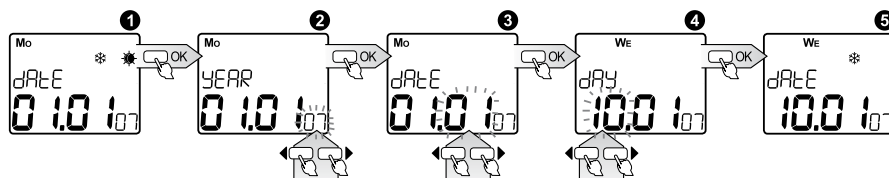
Gå till meny i huvudfönstret genom att välja OK; gå igenom menyn med pilknapparna ◀▶. Du kan gå tillbaka till huvudfönstret genom att trycka på knappen ☉ eller ☾.

I huvudfönstret kan du också visa den beräknade tidpunkten för soluppgång och solnedgång genom att trycka på pilknappen ▶.

Du går tillbaka automatiskt efter 10 sekunder.

	Funktion	Beskrivning
1	PAUSE	INSTÄLLNING AV NATTFRÅNKOPPLING
2	dELAY	INSTÄLLNING AV TIDSJUSTERING FÖR SOLUPPGÅNG OCH SOLNEDGÅNG
3	t ₁ m E ☉	INSTÄLLNING AV AKTUELL TID
4	dATE **	INSTÄLLNING AV AKTUELLT DATUM
5	t ₁ m E *	INSTÄLLNING AV SOMMARTID/VINTERTID
6	Coord ☒	INSTÄLLNING AV GEOGRAFISKT LÄGE OCH TIDSZON
7	InPut ▶	INSTÄLLNING AV EXTERN INGÅNG
8	Sr ISE	BERÄKNAD TIDPUNKT FÖR SOLUPPGÅNG
9	S SET	BERÄKNAD TIDPUNKT FÖR SOLNEDGÅNG

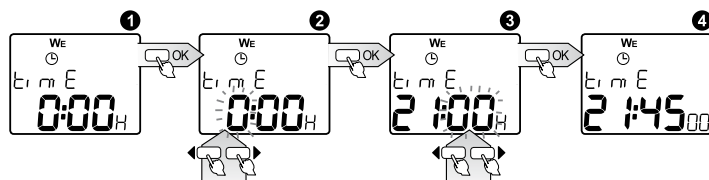
INSTÄLLNING AV DATUM



- dATE ** - inställning av aktuellt datum; starta genom att trycka på OK;
- ÅR - välj år med pilknapparna ◀▶, bekräfta valet med OK; inställningsvärde mellan 2000÷2099;
- MÅNAD - välj månad med pilknapparna ◀▶, bekräfta valet med OK;
- DAG - välj dag med pilknapparna ◀▶, bekräfta valet med OK; systemet är skyddat mot inmatning av felaktigt antal dagar i månaden (beräknar skottår) och beräknar veckodag automatiskt baserat på det inställda datumet;
- Genom att bekräfta går du till fönstret för datuminställning där den aktuella sommar/vintertiden ställs in - om alternativet Auto är inställt.

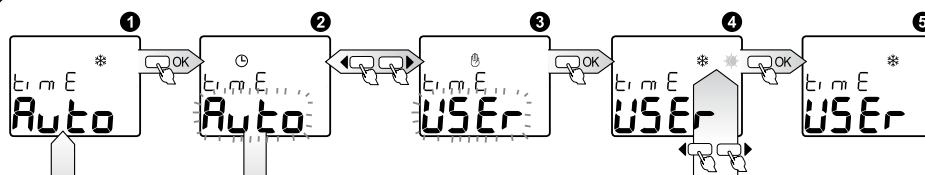
Du kan vid varje tidpunkt gå ut ur varje undermenyfönster utan att spara inställningarna genom att trycka på ☉ eller ☾.

TIDSINSTÄLLNING



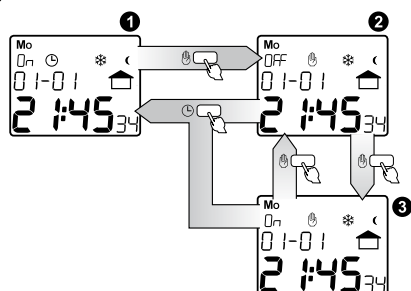
- 1 $t_i m E$ - inställning av aktuell tid; starta genom att trycka på OK;
 - 2 TIMME - välj timme med pilknapparna $\leftarrow \rightarrow$. Timmen kan ställas in i formatet 1-24 H eller 1-12 fm (AM) och 1-12 em (PM), bekräfta valet med OK;
 - 3 MINUTER - välj önskat minuttvärde med pilknapparna $\leftarrow \rightarrow$, bekräfta valet med OK;
 - 4 När du bekräftar minuttvärdet, återställs samtidigt sekundvärdet och du går till fönstret för tidsinställning.
- Du kan vid varje tidpunkt gå ut ur varje undermenyfönster utan att spara inställningarna genom att trycka på \odot eller \ominus .

INSTÄLLNING AV SOMMARTID/VINTERTID



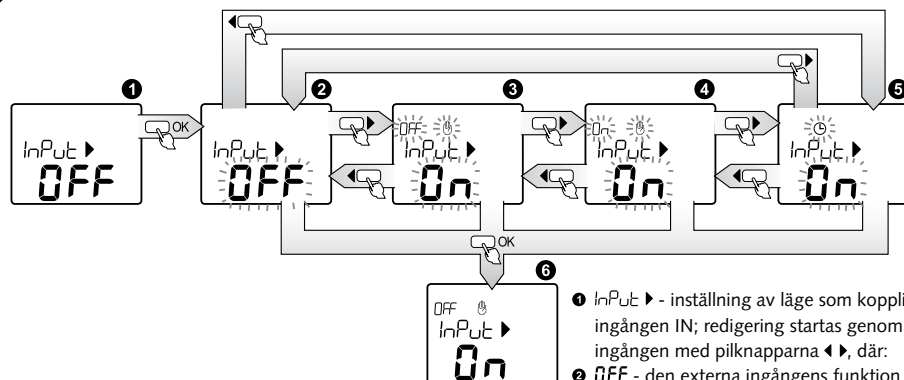
- 1 $t_i m E^*$ - val av ett av två lägen där växling mellan vinter- och sommartid ska ske: **Auto** - växling till sommartid sker automatiskt på den sista söndagen i mars kl. 2.00 och växling till vintertid på den sista söndagen i oktober kl. 3.00, **USER** - användaren väljer egna datum för vinter/sommartid; starta genom att trycka på OK;
- 2 3 LÄGESINSTÄLLNING - välj **Auto** eller **USER** med pilknapparna $\leftarrow \rightarrow$, bekräfta valet med OK; när du väljer **Auto** ställer uret automatiskt in sommartid eller vintertid beroende på det inställda datumet; när du väljer **USER** går du till nästa fönster;
- 3 Välj vinter- eller sommartid med pilknapparna $\leftarrow \rightarrow$, där * är vintertid och * är sommartid, om värdena har ändrats justerar systemet den aktuella tiden genom att lägga till eller dra ifrån en timme, bekräfta valet med OK;
- 5 När du valt, går systemet till fönstret för växling mellan sommar/vintertid.

VÄXLING MELLAN DRIFTLÄGEN (AUTOMATISKT, MANUELLT)



- 1 VÄXLING TILL MANUELLT LÄGE - om systemet är i huvudfönstret och fungerar i automatiskt läge går det till manuellt läge och relästatus ändras samtidigt när du trycker på knappen \ominus ;
- 2 Vid varje efterföljande tryckning på \ominus går reläet till motsatt läge utan att ändra driftläge;
- 3 VÄXLING TILL AUTOMATISKT LÄGE - om systemet är i huvudfönstret och fungerar i manuellt läge går det till automatiskt läge och relästatus uppdateras samtidigt när du trycker på knappen \odot .

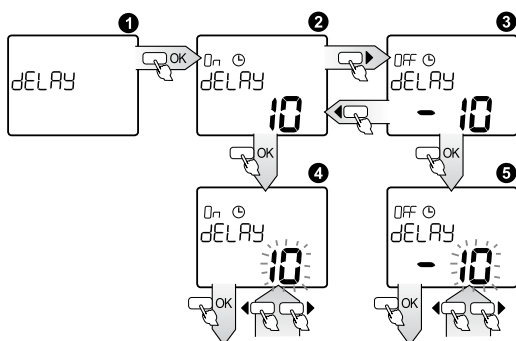
INSTÄLLNING AV EXTERN INGÅNG



- 1 **Input** - inställning av läge som kopplingsuret ska stå i efter aktivering av den externa ingången IN; redigering startas genom att trycka på OK; välj läge för den externa ingången med pilknapparna $\leftarrow \rightarrow$, där:
- 2 **OFF** - den externa ingångens funktion är inaktiverad;
- 3 \ominus **OFF** - manuellt läge med kontinuerlig frånkoppling av reläet;
- 4 \odot **ON** - manuellt läge med kontinuerlig tillkoppling av reläet;
- 5 \odot - automatiskt läge, systemet slår på/av reläet enligt de inställda programmen;
- 6 Bekräfta valet av önskat läge med OK; detta gör att du går till inställningsfönstret för den externa ingången.

Du kan vid varje tidpunkt gå ut ur varje undermenyfönster utan att spara inställningarna genom att trycka på \odot eller \ominus .

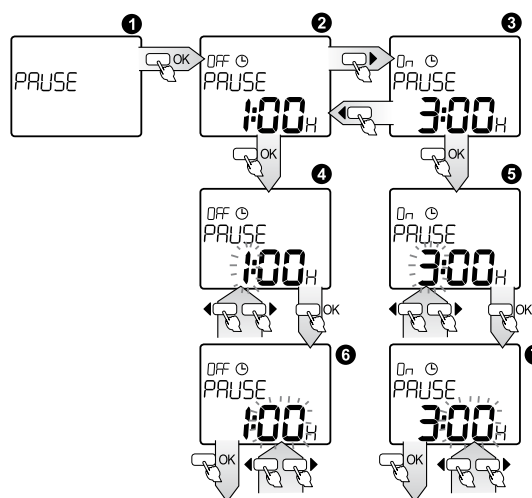
INSTÄLLNING AV TIDSJUSTERING



- ❶ dELAY - inställning av tidsjustering; inställningarna visas när du trycker på OK; välj den tid som ska ändras med pilknapparna ◀ ▶, där;
- ❷ Korrigering av tidpunkten för skymning; tryck på OK för att gå till redigering;
- ❸ Korrigering av tidpunkten för gryning; tryck på OK för att gå till redigering;
- ❹ ❺ Korrigera tidpunkten inom (-120 ÷ 120 minuter) med pilknapparna ◀ ▶, välj önskat värde och bekräfta valet med OK.

Du kan vid varje tidpunkt gå ut ur varje undermenyfönster utan att spara inställningarna genom att trycka på ☉ eller ⌚.

INSTÄLLNING AV NATTFRÅNKOPPLING

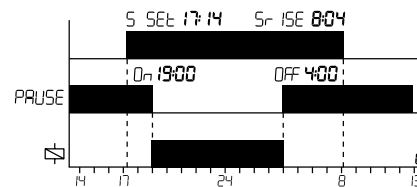
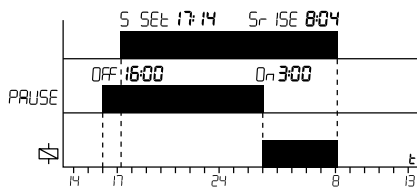
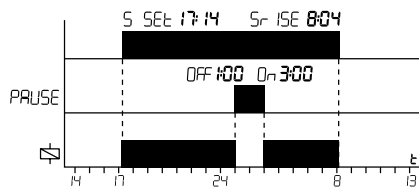


- ❶ PAUSE - inställning av nattfrånkopplingens längd; inställningarna visas när du trycker på OK; välj den tid som ska ändras med pilknapparna ◀ ▶, där;
- ❷ Starttid; tryck på OK för att redigera;
- ❸ Sluttid; tryck på OK för att redigera;
- ❹ ❺ Välj önskad timme med pilknapparna ◀ ▶, bekräfta valet med OK;
- ❻ ❼ Välj önskad minut med pilknapparna ◀ ▶, bekräfta valet med OK;

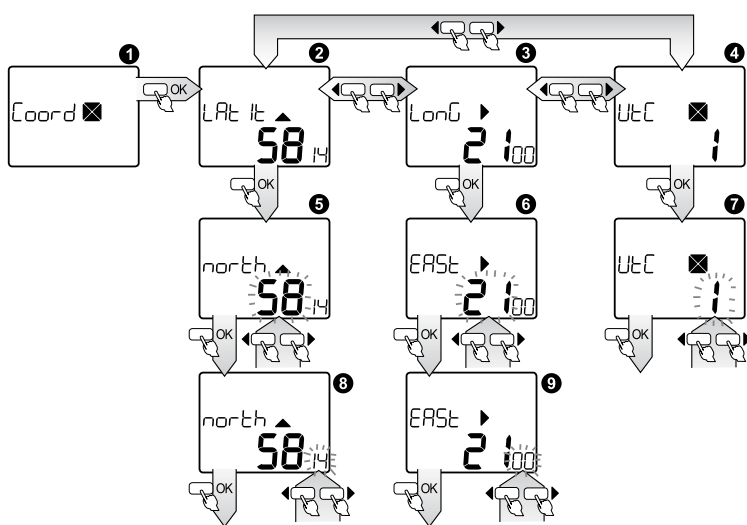
OBSERVERA!

Uret kommer att fungera utan nattavbrott om starttiden är densamma som sluttiden.

Du kan vid varje tidpunkt gå ut ur varje undermenyfönster utan att spara inställningarna genom att trycka på ☉ eller ⌚.



INSTÄLLNING AV GEOGRAFISKT LÄGE



- ❶ Coord ☒ - inställning av longitud och latitud samt tidszon; inställningarna visas och kan redigeras när du trycker på OK; välj det värde som ska ändras med pilknapparna ◀ ▶, där;
- ❷ Lat It - latitud;
- ❸ Lon G - longitud;
- ❹ UTC - tidszon mot UTC;

För fönstret ❷ (latitud); tryck på OK för att gå till redigering:

- ❺ Välj breddgrader (inom 90 South ÷ 90 North) med pilknapparna ◀ ▶; bekräfta valet med OK;
- ❻ Välj breddminuter med pilknapparna ◀ ▶ (om du valt latitud 90 i steg ❺, hoppa över detta steg).

För fönstret ❸ (longitud); tryck på OK för att gå till redigering:

- ❽ Välj längdgrader (inom 180 West ÷ 180 East) med pilknapparna ◀ ▶; bekräfta valet med OK.
- ❾ Välj längdminuter med pilknapparna ◀ ▶ (om du valt longitud 180 i steg ❽, hoppa över detta steg).

För fönstret ❹ (tidszon); tryck på OK för att gå till redigering:

- ❼ Välj tidszonförskjutning i timmar (inom -12 ÷ 12) med pilknapparna ◀ ▶; bekräfta valet med OK.

UTC = 1 för Sverige, Norge och Danmark, 2 för Finland
Du kan vid varje tidpunkt gå ut ur varje undermenyfönster utan att spara inställningarna genom att trycka på ☉ eller ⌚.

Se tabell över koordinater på nästa sida.

DE STÖRRE STÄDERNAS GEOGRAFISKA LÄGEN

Stad	Latitud °N	Longitud °E
Sverige		
Arjeplog	66,03	17,53
Borlänge	60,29	15,25
Göteborg	57,43	12,01
Idre	61,52	12,43
Jönköping	57,46	14,10
Kalmar	56,40	16,20
Karlstad	59,23	13,28
Kirun	67,52	20,13
Kumla	59,07	15,08
Luleå	65,35	22,10
Malmö	55,37	13,03
Stockholm	59,19	18,04
Sundsvall	62,23	17,19
Sälen	61,9	13,16
Umeå	63,50	20,16
Visby	57,38	18,18
Östersund	63,11	14,38

Norge		
Alta	69,58	23,16
Bergen	60,24	05,19
Bodø	67,17	14,24
Kristianstad	58,09	07,59
Mo i Rana	66,19	14,08
Narvik	68,26	17,26
Oslo	59,55	10,45
Røros	62,35	11,23
Stavanger	58,58	05,44
Trondheim	63,26	10,24

Stad	Latitud °N	Longitud °E
Danmark		
Aalborg	57,03	09,55
Aarhus	56,10	10,11
Esbjerg	55,29	08,28
Fredrikshavn	57,28	10,31
Holstebro	56,22	08,37
Kolding	55,31	09,28
København	55,41	12,34
Nykøbing	54,47	11,52
Odense	55,24	10,24
Rønne	55,06	14,42
Sønderborg	54,55	09,47

Finland		
Helsinki	60,11	24,56
Jyväskylä	62,15	25,45
Kajaani	64,14	27,44
Kuopio	62,53	27,41
Oulu	65,01	25,28
Rovaniemi	66,30	25,44
Tampere	61,30	23,46
Tornio	65,51	24,09
Turku	60,27	22,16
Vaasa	63,06	21,37

Åland		
Mariehamn	60,06	19,56

Om dina koordinater inte finns med ovan så kan du enkelt hitta dem på exempelvis <http://maps.google.com/>

Sök fram din adress, högerklicka på adressen och välj "Vad finns här?"

I övre vänstra hörnet visas nu adressen med koordinater:

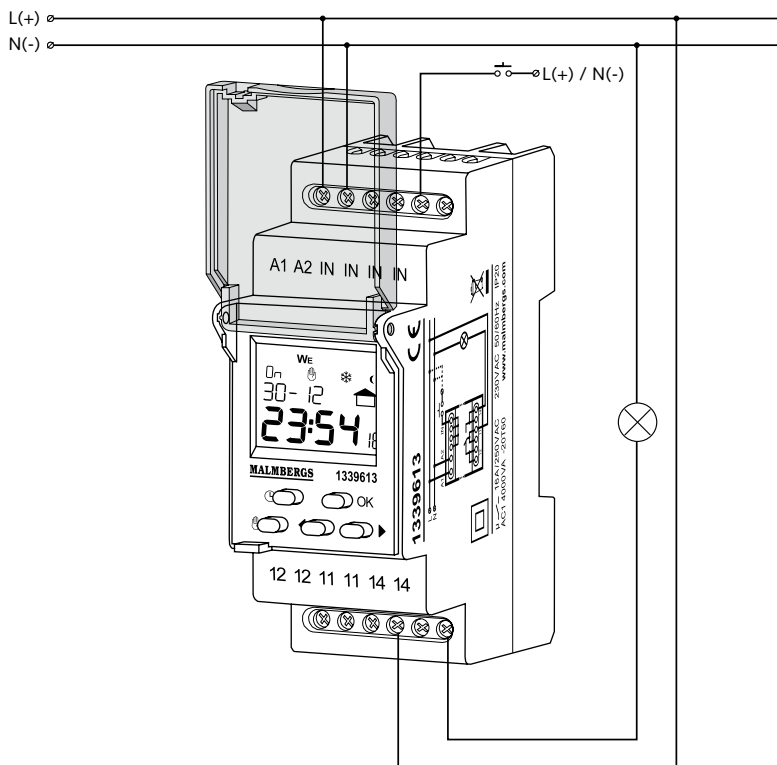


För ovan exempel så anges Lat 59.11 och Long 15.13 som koordinater vid inställning av kopplingsuret.

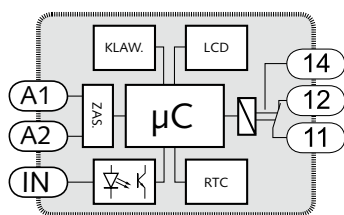
MONTERING

1. Koppla bort matningskretsen med en säkring, överströmbrytare eller isoleringsbrytare som ansluts till respektive krets.
2. Kontrollera med ett lämpligt verktyg att matningsledningar är spänningslösa.
3. Montera anordningen 1339613 på skena TH 35.
4. Anslut ledningar till klämmor enligt kopplingschema.
5. Aktivera spänningsskrets.

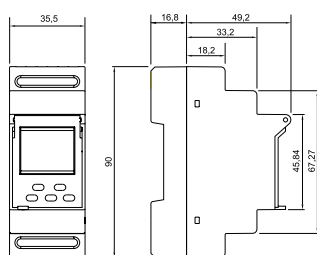
ANSLUTNING



INRE SCHEMA



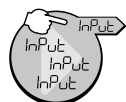
MÅTT PÅ KAPSLING



FÖRDELAR

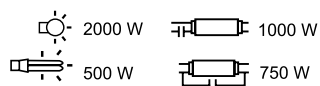


Intelligent kalender – systemet har en inbyggd kalender som automatiskt beräknar skottår, förhindrar inmatning av ett datum som inte finns till samt automatiskt beräknar veckodag baserat på datumet och ställer om uret när sommar/vintertiden börjar.

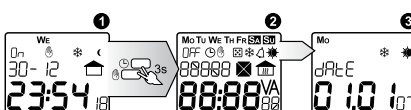


Universell extern ingång – systemet har en extern ingång som användaren kan använda för att tvinga fram ändring av urets driftläge t.ex. med en fjärrströmbrytare.

BELASTNING



HUVUDÅTERSTÄLLNING



- 1 Tryck på knapparna (M och S) samtidigt i huvudfönstret och håll dem nedtryckta i 3 sekunder för att återställa uret (tid, datum, funktionernas aktivitet m.m.);
- 2 Alla fält i displayen tänds;
- 3 Efter en stund övergår uret till inställning av datum och tid.

OBSERVERA: För att återställa fabriksinställningarna ska du också hålla OK-knappen nedtryckt.

ASTRONOMINEN YKSIKANAVAINEN KYTKENTÄKELLO 1339613

KÄYTTÖOHJE

MALMBERGS

Malmberg Elektro Oy, Juhanilantie 1, 01740 Vantaa, SUOMI

Puh: 09-855 34 30 Fax: 09-855 34 340 malmbergs@malmberg-elektro.fi www.malmbergs.com

OMINAISUUDET

Digitaalinen kytkentäkello 1339613 on automaattisesti säätävä kellokytkin. Päälle- ja poiskytkentä on ohjelmoitu vuodenajan mukaan tapahtuvan auringonlaskun- ja nousun perusteella. Tieto perustuu maantieteellisiin koordinaatteihin, laitteen aika-asetuksiin, päivämäärään ja kesä/talviaikaan, näiden perusteella määritellään tarkka auringon nousu- ja laskuaika. Päälle- ja poiskytkentä tapahtuu kun auringon keskikohta on kuusi astetta horisontin alapuolella jolloin auringonvalo valaisee vielä taivaanrantaa. Kello on myös mahdollista ohjelmoida sammuttamaan kuorma yöllä määrääjäksi tai säätää syttymis- /sammumisaikaa +/- 120 min. oletuksesta. Kellokytkin voidaan asentaa 35 mm DIN-kiskoon ja tarvittaessa sinetöidä. Sisäinen muisti säilyttää pariston avulla muistiin tallennetut asetukset vaikka kellokytkintä ei olisi kytketty sähköverkkoon.

OMINAISUUDET

- Ohjauksen riippuvuus astronomisesta syklistä,
- tilantarve kaksi moduulia, suojakansi,
- mahdollisuus nollaohjaukseen,
- taustavalaistu LCD-näyttö.

TEKNISET TIEDOT

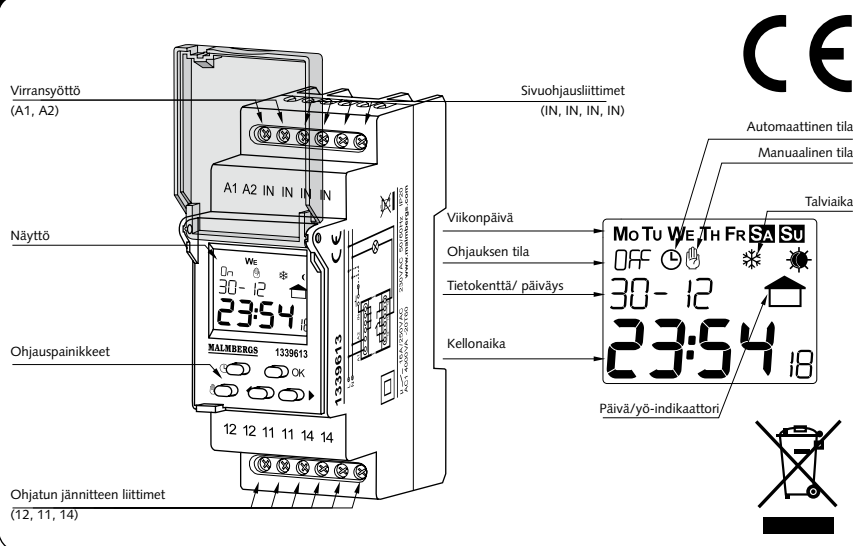
1339613	
Virransyöttöliittimet:	A1, A2
Nimelliskäyttöjännite:	230 V AC (-15 ÷ +10%)
Nimellistaaajuus:	50/60 Hz
Virrankulutus:	2 W / 14 VA
Kanavia:	1
Ohjelma:	astronominen
Toimintatilat:	manuaalitt, automaattisk
Kesä- /talviaika:	automaattinen, manuaalinen
LCD-bakgrundsbelysningens färg:	keltainen
Sivuhjaus:	kyllä
Kellon tarkkuus:	max. ±1 s / 24 h @ 25 °C
Kellon varakäyntiaika:	3 vuotta
Ohjelmoinnin varakäyntiaika:	5 vuotta
Sivuhjaimen liittimet:	IN, IN, IN, IN
Ohjatun jännitteen liittimet:	11, 12, 14
Kytkentäkärjet:	1NO/NC – 16 A / 250 V AC1 4000 VA
Liittimiä:	12
Kytkentäpinta-ala:	0,2 ÷ 2,50 mm ²
Käyttölämpötila:	-20 ÷ +60 °C
Asennussuunta:	kaikki
Kiskokiinnitys:	35 mm DIN-kisko (PN-EN 60715)
Suojausluokka:	IP20 (PN-EN 60529)
Kotelointiluokka:	II
Ylijänniteluokka:	II
Ympäristöhaittaluokka:	2
Mitat:	kaksi moduulia (35 mm) 90x35x66 mm
Paino:	0,17 kg
Noudatettavat standardit:	PN-EN 60730-1; PN-EN 60730-2-7; PN-EN 61000-4-2,3,4,5,6,11

KUVAUS

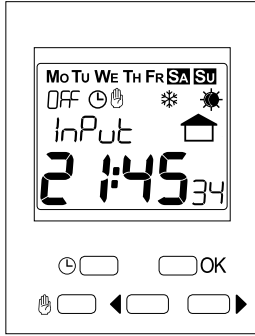


HUOM

Tämä laite on suunniteltu yksivaiheiseen asennukseen ja tulee asentaa maan voimassaolevia säädöksiä noudattaen. Laite tulee asentaa ja ohjelmoida tämän käyttöohjeen mukaisesti. Asennus, kytkentä ja ohjelmointi tulee suorittaa pätevyityneen sähköasentajan toimesta noudattaen tätä käyttöohjetta ja laitteen toimintoja. Laitteen avaaminen aiheuttaa takuun raukeamisen ja voi aiheuttaa sähköiskun. Ennen asennusta, varmista piirin jännitteettömyys. Asennuksessa tarvitaan 3,5 mm ristipäinen ruuvitaltta. Vääränlainen säilyttäminen, kuljettaminen ja käyttö voivat vaikuttaa laitteen toimintaan. Laitetta ei saa asentaa jos siitä puuttuu osia tai se on vaurioitunut. Jos laite toimii epäasianmukaisesti, ole yhteydessä valmistajaan.



NÄYTÖN SYMBOLIT



Näytön merkien selitykset

Mo Tu We Th Fr **Sa Su** viikonpäivä

On OFF ohjauksen tila

☉ automaattinen toiminta

☼ manuaalinen toiminta

* talviaika

☀ kesäaika

▶ ulkoinen ohjaus

DAY päivä

YEAR vuosi

USER käyttäjä

PAUSE pulssilähdön asetus

dELAY ajankorjausasetus

t, m, E kellonajan sekä kesä-/talviajan asetus

dRtE päiväyksen asetus

Coord maantieteellisen sijainnin setus

InPut ulkoisen ohjauksen asetus

Sr ISE / S SET auringonnousun- /laskun ajan asetus

LRE It / LonD leveys- /pituusaste

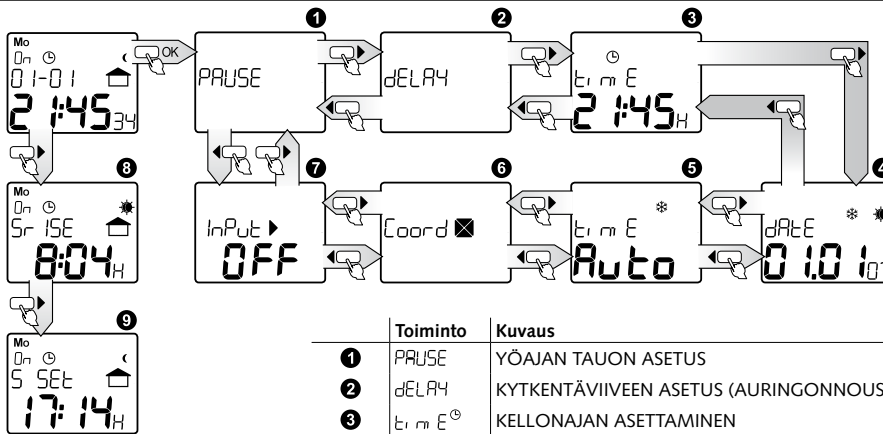
Auto automaattinen toiminta

On OFF päällä/pois

Painikkeiden kuvaus

- | | |
|----|--|
| ☉ | • Kotiruuudussa - siirry automaattitilaan tai vaihda toimintatila jos kello on jo automaattitilassa; |
| ☼ | • Muissa valikoissa - peruuta yksi taso ilman tallentamista; |
| ☼ | • Kotiruuudussa - siirry manuaalitilaan tai vaihda toimintatila jos kello on jo manuaalitilassa; |
| ☼ | • Muissa valikoissa - peruuta yksi taso ilman tallentamista; |
| OK | • Kotiruuudussa - siirry päävalikkoon; |
| OK | • Muissa valikoissa - siirry edellisien valikkoon tai vahvistä syötetty asetus; |
| ◀▶ | • Siirtyminen valikoissa/ valinnoissa/ parametrien arvojen muuttaminen |
| ◀▶ | • Nuoli oikealle kotiruuudussa - näyttää auringon nousu- ja laskuajan. |

PÄÄVALIKKO



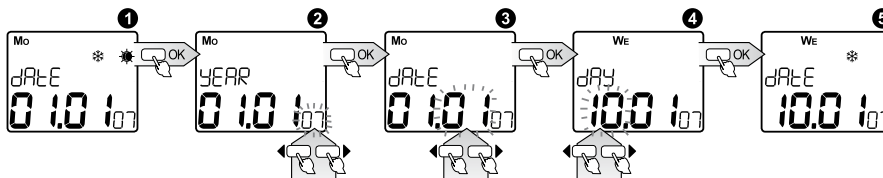
Valikkoon siirrytään kotiruuudusta painamalla OK; valikossa liikutaan nuolilla ◀▶. Palaa kotiruuutuun painamalla ☉ tai ☼.

Voit siirtyä auringonlaskun- ja nousun ilmaisevaan valikkoon suoraan kotiruuudusta painamalla nuolta ▶.

Näyttö palaa tällöin alkutilaan 10 sekunnin kuluttua.

	Toiminto	Kuvaus
1	PAUSE	YÖAJAN TAUON ASETUS
2	dELAY	KYTKENTÄVIVIEEN ASETUS (AURINGONNOUSU- /LASKU)
3	t, m, E ☉	KELLONAJAN ASETTAMINEN
4	dRtE * * *	PÄIVÄYKSEN ASETTAMINEN
5	t, m, E * *	AIKA-ASETUS (KESÄ- /TALVIAIKA)
6	Coord ☐	MAANTIEEELLINEN SIAINTI JA AIKAVYÖHYKKEEN ASETTAMINEN
7	InPut ▶	SIVUOHJAUKSEN ASETUKSET
8	Sr ISE	LASKENNALLINEN AURINGONNOUSUN AIKA
9	S SET	LASKENNALLINEN AURINGONLASKUN AIKA

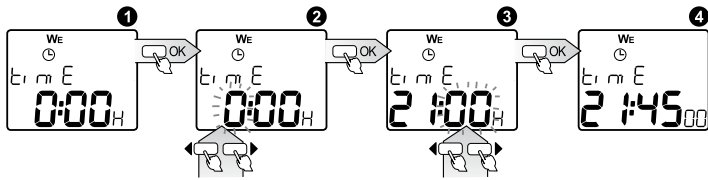
PÄIVÄYKSEN ASETUS



- dRtE * * * - Kellonajan asetus; valitse painamalla OK;
- YEAR - valitse oikea vuosi nuolilla ◀▶, ja vahvistä painamalla OK, vuosi voidaan valita välillä 2000-2099;
- MONTH - valitse oikea kuukausi nuolilla ◀▶, ja vahvistä painamalla OK;
- DAY - valitse päivä nuolilla ◀▶, ja vahvistä painamalla OK; järjestelmä ei anna syöttää virheellisiä päivämääräparametreja (muistiin on tallennettu karkausvuodet, myös oikea viikonpäivä lasketaan päivämäärän perusteella automaattisesti);
- Päivämäärän vahvistamisen jälkeen siirrytään automaattisesti kesä- /talviajan vahvistamiseen jos vaihtoehto Auto on valittuna.

Jokaisesta valikosta voidaan siirtyä edelliseen ilman tietojen tallentamista painamalla painiketta ☉ tai ☼.

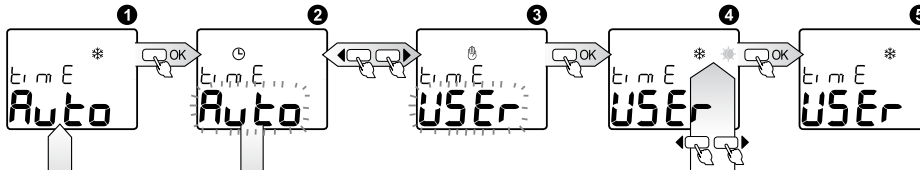
AJAN ASETUS



- 1 \ominus - aseta oikea kellonaika; siirry valintaan painamalla OK;
- 2 HOUR - valitse näyttötapa nuolilla $\leftarrow \rightarrow$. näkyviin voidaan asettaa 24 tai 12 h kello; vahvista valinta painamalla OK;
- 3 MINUTES - aseta oikeat minuutit nuolilla $\leftarrow \rightarrow$, vahvista painamalla OK;
- 4 Minuuttien asettaminen ja vahvistaminen nollaa juoksevat sekunnit ja palauttaa näytön ajanasetusvalikkoon.

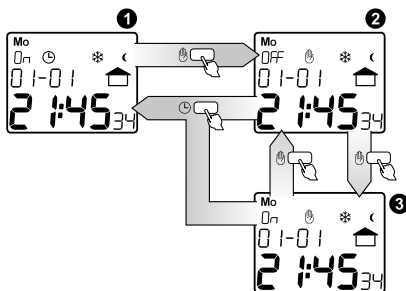
Jokaisesta valikosta voidaan siirtyä edelliseen ilman tietojen tallentamista painamalla \ominus tai \oplus .

TALVI/KESÄAIKA



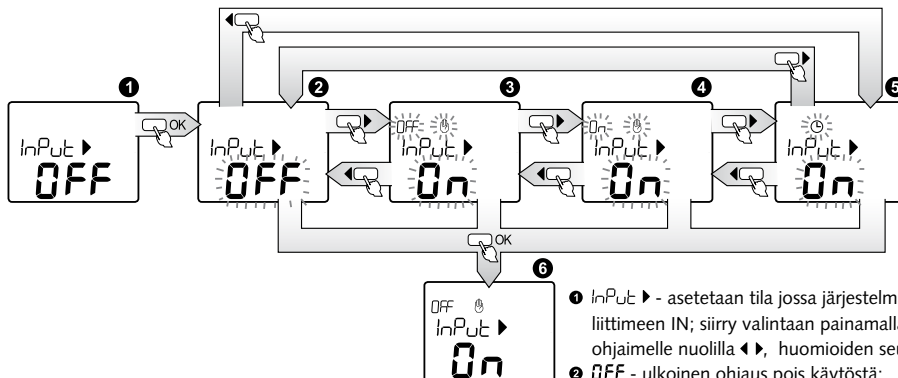
- 1 \oplus - valitse kesä- tai talviaika. **Auto** - valinta asettaa automaattisen ajansiirron, kesäaika alkaa maaliskuun viimeisenä sunnuntaina kello 2.00 ja päättyy lokakuun viimeisenä sunnuntaina kello 3, **User** - käyttäjä valitsee kesä- tai talviajan manuaalisesti, vahvistus painamalla OK;
- 2 3 tilan asettaminen - valitse tila **Auto** tai **User** nuolilla $\leftarrow \rightarrow$, vahvista painamalla OK; jos valittu tila on **Auto** kello siirtyy automaattisesti kesä- ja talviajan välillä, riippuen muistiin asetetusta päivämäärästä; jos valitaan tila **User**, siirrytään seuraavaan valikkoon;
- 4 Valitse kesä- ja talviajan välillä nuolilla $\leftarrow \rightarrow$, * tarkoittaa talviaikaa ja * kesäaikaa. Jos valinta muuttuu, järjestelmä muuttaa asetettua kellonaikaa tunnilla. Vahvista valinta painamalla OK.
- 5 Valinnan jälkeen palataan edelliseen valikkoon.

TOIMINTATAVAN MUUTTAMINEN (AUTO/MANUAALI)



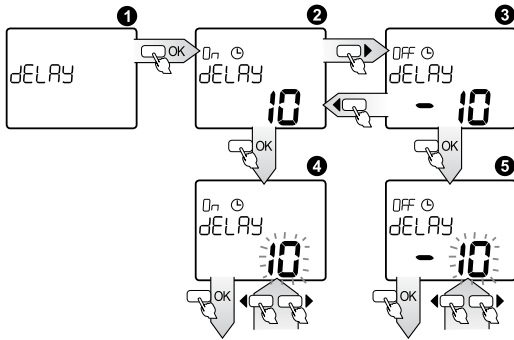
- 1 MANUAALIKÄYTÖN VALITSEMINEN - kun järjestelmä on kotiruuudussa ja automaattitila on valittuna, painikkeen \oplus painaminen vaihtaa toimintatilan manuaalikäytölle ja keskeyttää ohjelmoidun toiminnan;
- 2 3 Tämänjälkeiset painikkeen \oplus painamiset aloittavat/lopettavat valitsevan toiminnan toimintatilan kuitenkin muuttumatta.
- 2 3 AUTOMAATTIKÄYTÖN VALITSEMINEN - kun järjestelmä on kotiruuudussa ja manuaalitila on valittuna, painikkeen \ominus painaminen vaihtaa toimintatilan automaattikäytölle ja jatkaa laitteeseen ohjelmoidun toiminnan mukaisesti.

ULKOISEN OHJAIMEN ASETUS



- 1 InPut \rightarrow - asetetaan tila jossa järjestelmä toimii saadessaan käskyn ulkoiselta ohjaimelta liittimeen IN; siirry valintaan painamalla OK, valitse haluttu toiminta ulkoiselle ohjaimelle nuolilla $\leftarrow \rightarrow$, huomioiden seuraavat:
 - 2 OFF - ulkoinen ohjaus pois käytöstä;
 - 3 \oplus OFF - manuaalinen käyttö, toiminnan pysyvä sammuttaminen;
 - 4 \ominus ON - manuaalinen käyttö, toiminnan pysyvä käynnistäminen;
 - 5 \ominus - automaattinen toiminta, järjestelmä kytkee toiminnan päälle tai pois riippuen asetetusta ohjelmoinnista;
 - 6 Vahvista valinta painamalla OK halutussa kohdassa; vahvistaminen aiheuttaa siirtymisen ulkoisen ohjaimen päävalikkoon.
- Jokaisesta valikosta voidaan siirtyä edelliseen ilman tietojen tallentamista painamalla painiketta \ominus tai \oplus .

AJANKORJAUS



1 DELAY - Ajankorjauksen asetus; näet asetukset painettuasi OK; Ajan valitsemiseksi liiku nuolilla ◀ ▶, huomio seuraavat asiat:

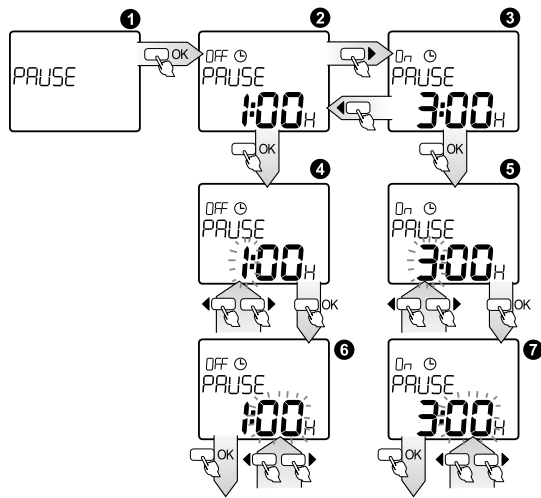
2 Auringonnousun ajankorjaus; paina OK liikkuaksesi seuraavaan:

3 Auringonlaskun ajankorjaus; paina OK liikkuaksesi seuraavaan:

4 5 Säädä aika-asetus välillä 120 ÷ 120 minuuttia, valitse haluttu aika nuolilla ◀ ▶, vahvista painamalla OK.

Jokaisesta valikosta voidaan siirtyä edelliseen ilman tietojen tallentamista painamalla painiketta ☉ tai ☽.

TAUKOTILAN ASETUS



1 PAUSE - taukotilan keston asetus; näet asetukset painettuasi OK; Ajan valitsemiseksi liiku nuolilla ◀ ▶, huomio seuraavat asiat:

2 Tauon alkamisaika; paina OK liikkuaksesi seuraavaan:

3 Tauon päättymisaika; paina OK liikkuaksesi seuraavaan:

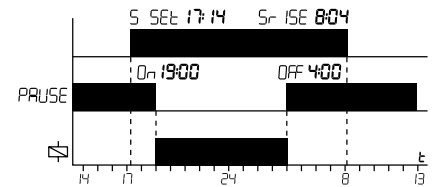
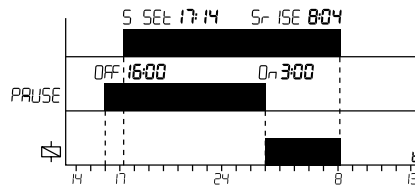
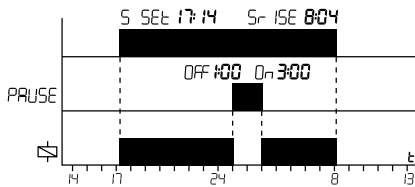
4 5 Valitse haluttu tunti nuolilla ◀ ▶, vahvista painamalla OK;

6 7 Valitse haluttu minuutti nuolilla ◀ ▶, vahvista painamalla OK;

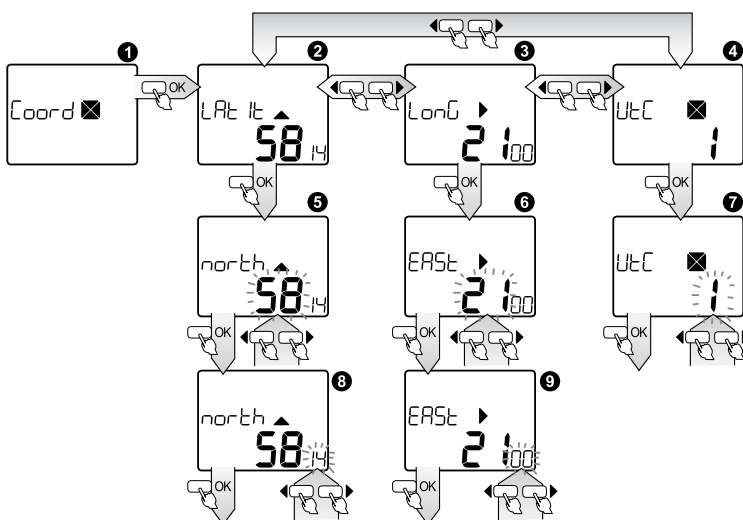
HUOMIO!

Kello ei siirry tauolle jos tauon alkamis- ja päättymisaika ovat samat.

Jokaisesta valikosta voidaan siirtyä edelliseen ilman tietojen tallentamista painamalla painiketta ☉ tai ☽.



MAANTIETEELLISEN SIJAINNIN ASETUS



1 Coord ☒ -pituus- ja leveysasteen sekä aikavyöhykkeen asetus; näet asetukset painettuasi OK, valitse oikeat parametrit nuolilla ◀ ▶, huomioi seuraavat asiat:

2 Lat - leveysaste;

3 Lon - pituusaste;

4 UTC - UTC-järjestelmän mukainen aikavyöhyke.

Ikkunassa 2; paina OK liikkuaksesi seuraavaan;

5 Valitse leveysasteen parametrit (asteluku) nuolilla ◀ ▶ alueella 90 Eteläistä - 90 Pohjoista; vahvista painamalla OK;

6 Aseta leveysasteen minuutit nuolilla ◀ ▶ (jos vaiheessa 5 90 astetta on ylitetty, tämä kohta jää pois).

Ikkunassa 3; paina OK liikkuaksesi seuraavaan;

6 Valitse pituusasteen parametrit (asteluku) nuolilla ◀ ▶ (alueella 180 Läntistä - 180 Itäistä); vahvista painamalla OK;

9 Aseta pituusasteen minuutit nuolilla ◀ ▶ (jos vaiheessa 6 90 astetta on ylitetty, tämä kohta jää pois).

Valikossa 4 (aikavyöhyke UTC); paina OK liikkuaksesi seuraavaan:

7 Valitse oikea aikavyöhyke nuolilla ◀ ▶ (alueella 12 ÷ 12); vahvista painamalla OK.

Jokaisesta valikosta voidaan siirtyä edelliseen ilman tietojen tallentamista painamalla painiketta ☉ tai ☽.

SUURIMPIEN KAUPUNKIEN MAANTIETEELLINEN SIJAINTI

Kaupunki	Leveysaste °N	Pituusaste °E
Sweden		
Arjeplog	66,03	17,53
Borlänge	60,29	15,25
Göteborg	57,43	12,01
Idre	61,52	12,43
Jönköping	57,46	14,10
Kalmar	56,40	16,20
Karlstad	59,23	13,28
Kirun	67,52	20,13
Kumla	59,07	15,08
Luleå	65,35	22,10
Malmö	55,37	13,03
Stockholm	59,19	18,04
Sundsvall	62,23	17,19
Sälen	61,9	13,16
Umeå	63,50	20,16
Visby	57,38	18,18
Östersund	63,11	14,38
Norway		
Alta	69,58	23,16
Bergen	60,24	05,19
Bodø	67,17	14,24
Kristianstad	58,09	07,59
Mo i Rana	66,19	14,08
Narvik	68,26	17,26
Oslo	59,55	10,45
Røros	62,35	11,23
Stavanger	58,58	05,44
Trondheim	63,26	10,24

Kaupunki	Leveysaste °N	Pituusaste °E
Denmark		
Aalborg	57,03	09,55
Aarhus	56,10	10,11
Esbjerg	55,29	08,28
Fredrikshavn	57,28	10,31
Holstebro	56,22	08,37
Kolding	55,31	09,28
København	55,41	12,34
Nykøbing	54,47	11,52
Odense	55,24	10,24
Rønne	55,06	14,42
Sønderborg	54,55	09,47

Kaupunki	Leveysaste °N	Pituusaste °E
Finland		
Helsinki	60,11	24,56
Jyväskylä	62,15	25,45
Kajaani	64,14	27,44
Kuopio	62,53	27,41
Oulu	65,01	25,28
Rovaniemi	66,30	25,44
Tampere	61,30	23,46
Tornio	65,51	24,09
Turku	60,27	22,16
Vaasa	63,06	21,37

Kaupunki	Leveysaste °N	Pituusaste °E
Åland		
Mariehamn	60,06	19,56

Jos sijaintisi ei löydy ylläolevasta taulukosta, löydät sen helposti internetin karttapalveluista, esim. <http://maps.google.com/>

Hae palvelusta asennusosoite ja valitse "What's here?"

Vasemmassa yläreunassa näet hakemasi paikan koordinaattitiedot.

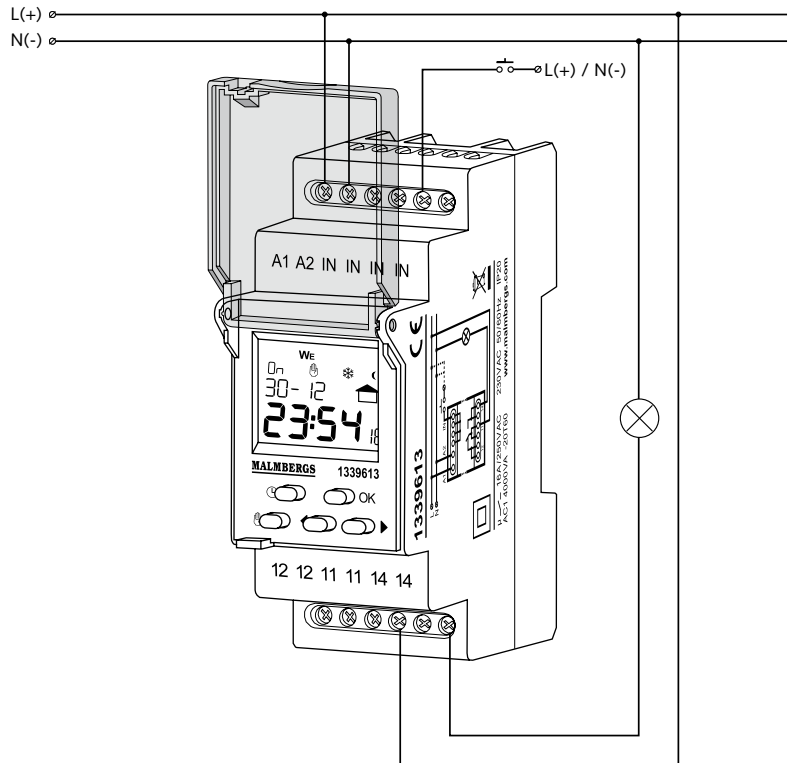


Ylläolevassa esimerkissä käytetään koordinaatteja Lat 59.11 ja Long 15.13 sijaintitietojen syöttämisessä.

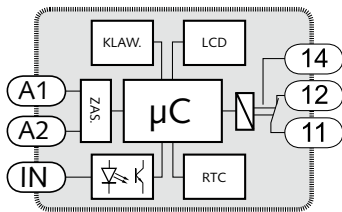
ASENTAMINEN

1. Kytke jännite pois piiristä johon laite asennetaan.
2. Varmista jännitteettömyys asianmukaisella työvälineellä.
3. Asenna kellokytkin 1339613 koteloon jossa on 35 mm DIN-kisko.
4. Kytke johtimet liittimiin kytkentäkaavion mukaisesti.

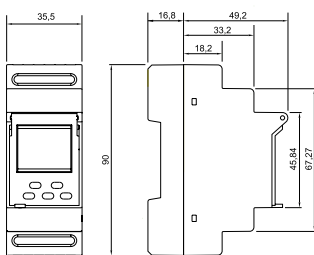
KYTKENTÄKAAVIO



KYTKENTÄKAAVIO



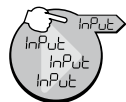
MITAT



HYÖTYJÄ

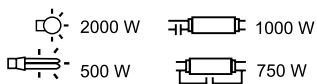


Älykäs kalenteri – järjestelmässä on sisäänrakennettu kalenteri joka huomioi automaattisesti karkausvuodet, estää virheellisten päiväysten asettamisen, asettaa oikean viikonpäivän päivämäärän perusteella sekä vaihtaa automaattisesti kesä- ja talviajan välillä.

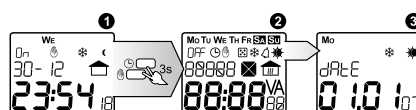


Ulkoisen ohjauksen mahdollisuus – järjestelmässä on mahdollisuus ulkoiselle ohjaukselle jonka avulla kytkentää voidaan pakko-ohjata esim erillisellä ulkoisella painikkeella.

KUORMITUS



RESETOINTI



- 1 Muistin tyhjentämiseksi (aika, päiväys, ohjelmointi, annetut toiminnot ym.) tulee painikkeita ☹ ja ☺ painettuna yhtäaikaisesti kolmen sekunnin ajan;
- 2 Kaikki näyttökentät tulevat näkyviin;
- 3 Hetken kuluttua näyttöön ilmestyy oletusaika ja muisti on nollattu.

Huomioitavaa: Tehdasasetusten palauttamiseksi suosittelemme painamaan samalla myös painiketta OK.

ASTRONOMICAL ONE-CHANNEL TIME PROGRAMMER 1339613

INSTRUCTION MANUAL

MALMBERGS

Malmbergs Elektriska AB, PO Box 144, SE-692 23 Kumla, SWEDEN

Phone: +46 (0)19 58 77 00 Fax: +46 (0)19 57 11 77 info@malmbergs.com www.malmbergs.com

DESCRIPTION

Digital steering clocks 1339613 are intended for realization of time functions in the systems of automatics and steering. Switching on/off the appliance is connected with sunrise and sunset (dawn and dusk). The information about geographic coordinates, the place of the clock's installation, current date and a shift in relation to the universal time – all these factors are used in order to calculate the time of sunrise and sunset. The system calculates the end of civil dusk, that is the phase, during which the centre of the sun's face is located on the 6 degrees angular below the horizon- the Sun's face is not noticeable but sky is lit with dispersed sunlight. The system additionally has a function of a programmed night break and an ability of shifting the calculated time of sunrise and sunset within a range of +/- 120 min. The construction of a casing makes it possible to install the system on a rail TH 35 and possible sealing the appliance with lead. The construction of the system guarantees supporting of all the settings with battery energy when the electric power supply is off.

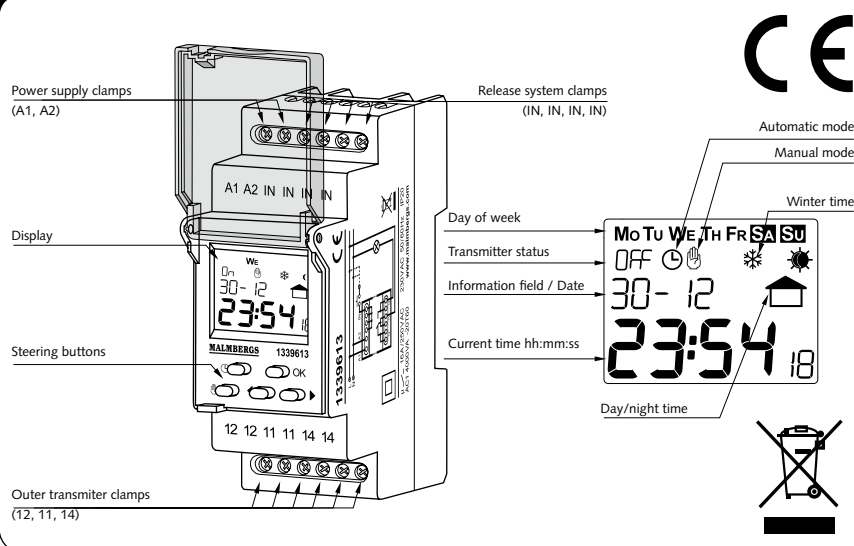
FEATURES

- Steering dependant on a current hour in an astronomical cycle,
- two-module casing with a protective flap valve,
- steering input IN,
- lighting the LCD display.

TECHNICAL DATA

1339613	
Power supply clamps:	A1, A2
Rated voltage:	230 V AC (-15 ÷ +10%)
Rated frequency:	50/60 Hz
Rated power consumption:	2 W / 14 VA
Number of channels:	1
Programme:	astronomical
Mode of work:	manual, automatic
Change of season summer/ winter:	automatic, manual
Colour of LCD panel lighting:	amber
Input:	yes
Accuracy of time measurement:	max. ±1 s / 24 h at temp. 25 °C
Time of clock maintenance:	3 years
Time of programme maintenance:	5 years
Clamps of release system:	IN, IN, IN, IN
Clamps of receiver power supply:	11, 12, 14
Parameters of transmitter contacts:	1NO/NC – 16 A / 250 V AC1 4000 VA
Number of terminating clamps:	12
Intersection of terminating conductors:	0,2 ÷ 2,50 mm ²
Temperature of work:	-20 ÷ +60 °C
Position of work:	any
Fixing of casing:	TH 35 rail (PN-EN 60715)
Level of protection of casing:	IP20 (PN-EN 60529)
Protectivity class:	II
Overvoltage category:	II
Level of pollution:	2
Measurements:	two-module (35 mm) 90x35x66 mm
Weight:	0,17 kg
Compatibility with norms:	PN-EN 60730-1; PN-EN 60730-2-7; PN-EN 61000-4-2,3,4,5,6,11

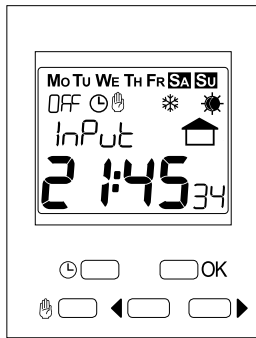
APPEARANCE



CAUTION

The device is designed for single-phase installation and must be installed in accordance with standards valid in a particular country. The device should be connected according to the details included in this operating manual. Installation, connection and control should be carried out by a qualified electrician staff, who act in accordance with the service manual and the device functions. Disassembling of the device is equal with a loss of guarantee and can cause electric shock. Before installation make sure the connection cables are not under voltage. The cruciform head screwdriver 3,5 mm should be used to install the device. Improper transport, storage, and use of the device influence its wrong functioning. It is not advisable to install the device in the following cases: if any device part is missing or the device is damaged or deformed. In case of improper functioning of the device contact the producer.

DESCRIPTION



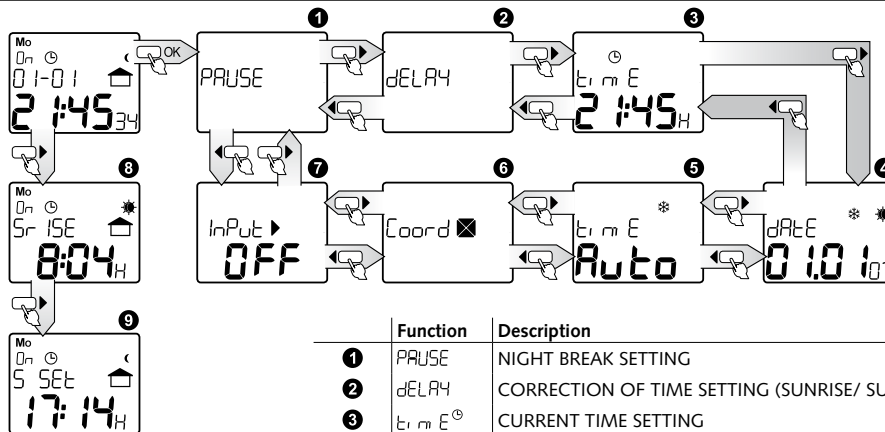
Description of elements and messages displayed

Mo Tu We Th Fr Sa Su	days of week	PAUSE	impulse mode setting
On OFF	transmitter's status	dELAY	time correction setting
☺	automatic mode	t.i.m.E	current time setting and summer/winter time shift
☹	manual mode	dAtE	current date setting
❄	winter time	CoorD	geographical position setting
☀	summer time	InPut	external input setting
▶	external input	SrISE / S SET	sunrise time / sunset time
DAY	day	Lat It / LonG	latitude/ longitude
YEAR	year	Auto	automatic
USER	user	On OFF	on/off

Buttons descriptions

☺	<ul style="list-style-type: none"> In the main window - entry to manual mode or change of transmitter status if the clock is already in the manual mode; In other windows- one level up exit without saving the introduced data;
☹	<ul style="list-style-type: none"> In the main window - entry to manual mode or change of transmitter status if the clock is already in the manual mode; In other windows- one level up exit without saving the introduced data;
OK	<ul style="list-style-type: none"> In the main window - entry to main menu; In other windows - entry to sub- menu or confirmation of the parameter being set;
◀▶	<ul style="list-style-type: none"> Shifting windows /menu options or increasing/ decreasing of the parameter being set; Right cursor in the main window- displaying a time of sunrise and sunset.

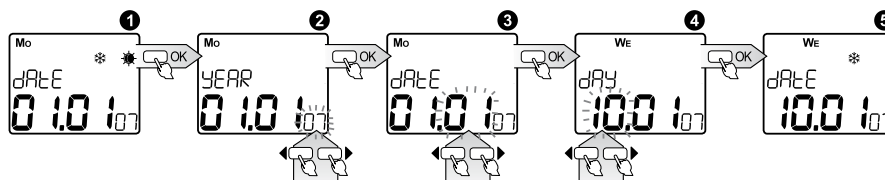
MAIN MENU



Enter the menu from the main window by choosing OK; move inside menu using cursors ◀▶. Return to the main window is possible after pressing button ☺ or ☹. You can enter the windows of displaying calculated sunrise/sunset time from the main window by using cursor ▶. Automatic return after 10 s.

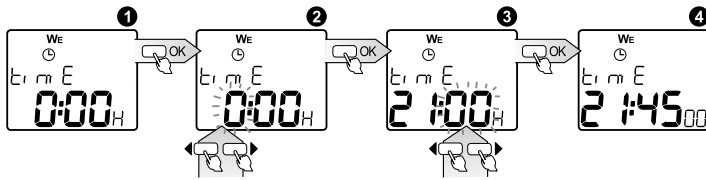
	Function	Description
1	PAUSE	NIGHT BREAK SETTING
2	dELAY	CORRECTION OF TIME SETTING (SUNRISE/ SUNSET TIME)
3	t.i.m.E ☺	CURRENT TIME SETTING
4	dAtE**	CURRENT DATE SETTING
5	t.i.m.E*	TIME SETTING (SUMMER/WINTER SEASON)
6	CoorD ☒	GEOGRAPHICAL POSITION AND TIME ZONE SETTING
7	InPut ▶	EXTERNAL INPUT SETTING
8	SrISE	CALCULATED SUNRISE TIME
9	S SET	CALCULATED SUNSET TIME

DATE SETTING



- dAtE** - Current date setting; entry after pressing OK;
 - YEAR - choose adequate year with cursors ◀▶ confirm with OK, range of years: 2000÷2099;
 - MONTH - choose month with cursors ◀▶ confirm with OK;
 - DAY - choose day with cursors ◀▶, confirm with OK; the system has a protection against introducing incorrect parameter of a day for a given month (it takes into account leap years and it automatically calculates the day of the week on the basis of an arranged date);
 - Confirmation causes movement to a date setting window and set-up of current summer/ winter time - if the option **Auto** is arranged.
- It is possible to exit every sub- menu window in any moment without saving settings by pressing the button ☺ or ☹.

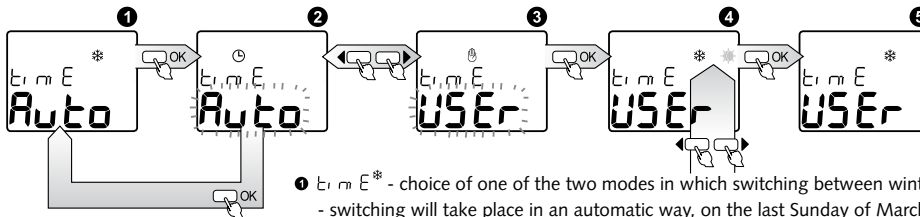
TIME SETTING



- 1 Time - setting the current clock time; entry after pressing OK;
- 2 HOUR - choose adequate hour with cursor $\leftarrow \rightarrow$ which you can set in 1-24 or 1-12 (AM) and 1-12 (PM) format; confirm with OK;
- 3 MINUTES - choose adequate parameter of minutes with cursors $\leftarrow \rightarrow$ confirm with OK;
- 4 Confirmation of the parameter of minutes causes simultaneous nullification of the parameter of seconds and movement to the window of time setting.

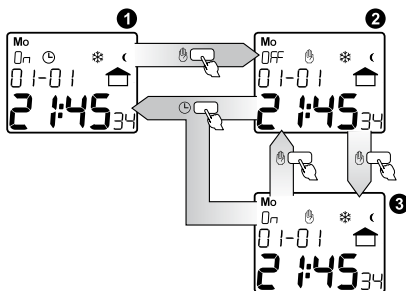
It is possible to exit every sub- menu window in any moment without saving settings by pressing the button \odot or \ominus .

WINTER / SUMMER TIME SETTING



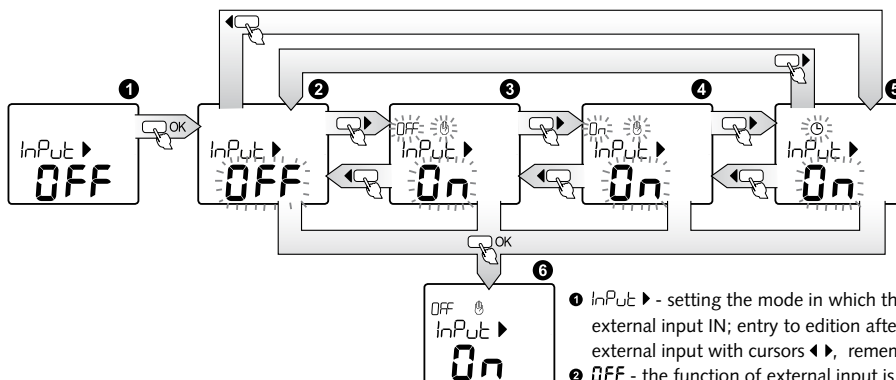
- 1 Time - choice of one of the two modes in which switching between winter and summer season time will occur. **Auto** - switching will take place in an automatic way, on the last Sunday of March, at 2.00 (for summer time) and on the last Sunday of October, at 3.00 (for winter time), **USER** - a user chooses between winter/ summer time, entry after pressing OK;
- 2 setting the mode - choose mode **Auto** or **USER** with cursors $\leftarrow \rightarrow$, confirm with OK; after choosing the mode **Auto**, the clock automatically sets the time as winter or summer one, depending on the arranged date; after choosing the mode **USER** you go to another window;
- 3 Choose time for winter/ summer one with cursors $\leftarrow \rightarrow$ where * is winter time and * is summer time, if change of marker has happened the system will change the current time by adding or subtracting 1 hour, confirm the operation with OK;
- 4 After choosing the system moves to winter/ summer time shift window.

CHANGE OF MODE OF WORK (AUTOMATIC, MANUAL)



- 1 CHANGE OF MODE INTO MANUAL - if the system is situated in the main window and it is in the automatic mode, pressing the button \ominus will cause a shift of the system from the manual mode with simultaneous change of transmitter status;
- 2 Tämänjälkeiset painikkeet \ominus will cause switching transmitter to the opposite status without change of work mode;
- 3 CHANGE OF MODE INTO AUTOMATIC - if the system is placed in the main menu and it is in the manual mode, pressing button \odot will cause automatic shift to the automatic mode, with simultaneous updating transmitter status.

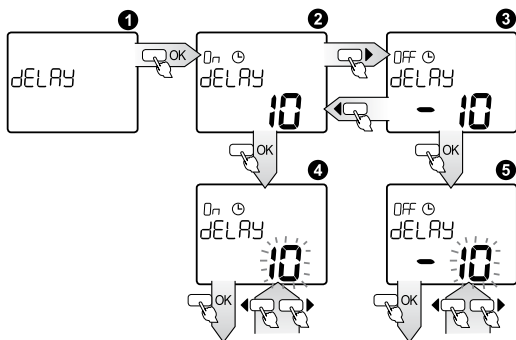
EXTERNAL INPUT SETTING



- 1 InPut - setting the mode in which the system should operate after releasing the external input IN; entry to edition after pressing OK, choose adequate mode for external input with cursors $\leftarrow \rightarrow$, remember at the same time that:
- 2 OFF - the function of external input is switched off;
- 3 OFF - manual mode with permanent switching the transmitter off;
- 4 On - manual mode with permanent switching the transmitter on;
- 5 \odot - automatic mode, the system switches the transmitter on/off according to the arranged programmes;
- 6 Confirm with OK the choice of a given mode; confirmation will cause a movement to the settings window of the external input.

It is possible to exit every sub- menu window in any moment without saving settings by pressing the button \odot or \ominus .

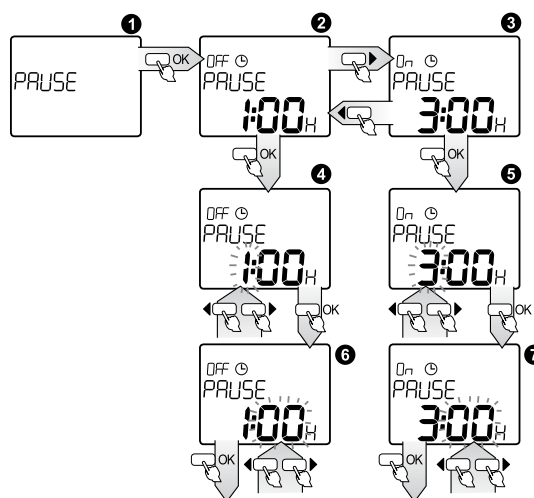
TIME CORRECTION SETTING



- 1 dELAY - setting the time correction; entry to review of settings after pressing OK; Choose time which you should change with cursors ◀ ▶, remember at the same time that:
- 2 Correction of dusk time; press OK, in order to move to edition:
- 3 Correction of dawn time; press OK, in order to move to edition:
- 4 5 Correct the time within a range of $-120 \div 120$ min., choose an adequate parameter with cursors ◀ ▶, confirm the choice with OK.

It is possible to exit every sub- menu window in any moment without saving settings by pressing the button ☉ or ☌.

NIGHT BREAK SETTING

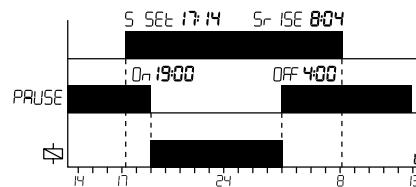
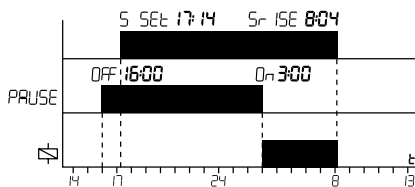
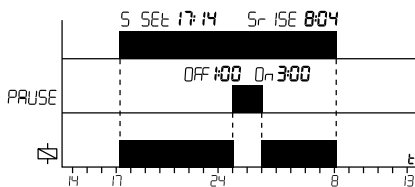


- 1 PAUSE - setting the duration time of a night break; entry to reviewing the settings after pressing OK; Choose time which you should change with cursors ◀ ▶, remember at the same time that:
- 2 Time of commencement of a night break; press OK in order to move to edition;
- 3 Time of ending of a night break; press OK in order to move to edition;
- 4 5 Choose adequate hour with cursors ◀ ▶, confirm the choice with OK;
- 6 7 Choose adequate minute with cursors ◀ ▶, confirm the choice with OK;

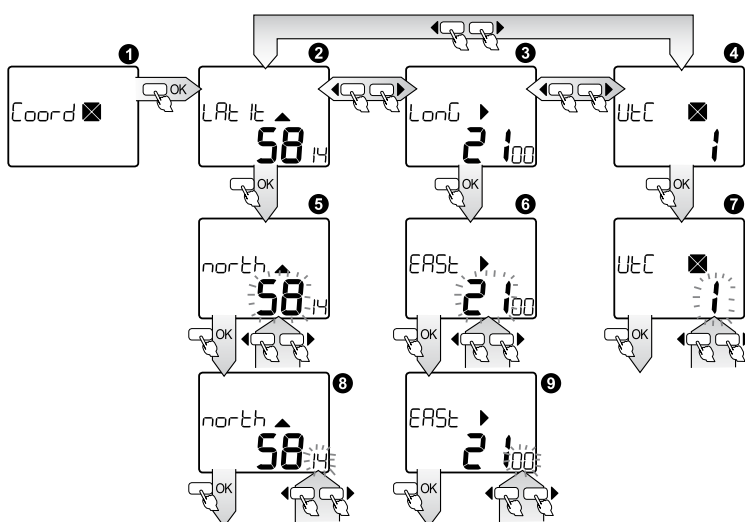
ATTENTION!

The clock will work without a night break, if the times of night break beginning and ending are the same.

It is possible to exit every sub- menu window in any moment without saving settings by pressing the button ☉ or ☌.



GEOGRAPHICAL POSITION SETTING



- 1 Coord ☒ -setting longitude, latitude and a time zone; entry to reviewing and edition of settings after pressing OK, choose parameters which should be changed with cursors ◀ ▶ remember at the same time that:
- 2 Lat It - latitude;
- 3 Lon G - longitude;
- 4 UTC - time zone in relation to UTC time;

For window 2 (latitude); press OK, so as to move to edition:
 5 Choose latitude parameters (degrees) with cursors ◀ ▶ (within range 90 South ÷ 90 North); confirm with OK;
 6 Choose latitude minutes with cursors ◀ ▶ (if in the step 5 90 latitude was chosen, this step is omitted).

For window 3 (longitude); press OK, in order to move to edition:

- 8 Choose longitude degrees with cursors ◀ ▶ (within range 180 West ÷ 180 East); confirm the choice with OK.
- 9 Choose longitude minutes with cursors ◀ ▶ (if in the step 8 longitude was chosen, this step is omitted).

For window 4 (time zone); press OK, so as to move to edition:
 7 Choose hour shift of time zone with cursors ◀ ▶ (within a range $-12 \div 12$); confirm your choice with OK.

It is possible to exit every sub- menu window in any moment without saving settings by pressing the button ☉ or ☌.

GEOGRAPHICAL POSITION OF GREATER TOWNS AND CITIES

City	Latitud °N	Longitud °E
Sweden		
Arjeplog	66.03	17.53
Borlänge	60.29	15.25
Göteborg	57.43	12.01
Idre	61.52	12.43
Jönköping	57.46	14.10
Kalmar	56.40	16.20
Karlstad	59.23	13.28
Kirun	67.52	20.13
Kumla	59.08	15.08
Luleå	65.35	22.10
Malmö	55.37	13.03
Stockholm	59.19	18.04
Sundsvall	62.23	17.19
Sälen	61.9	13.16
Umeå	63.50	20.16
Visby	57.38	18.18
Östersund	63.11	14.38

City	Latitud °N	Longitud °E
Norway		
Alta	69.58	23.16
Bergen	60.24	05.19
Bodø	67.17	14.24
Kristianstad	58.09	07.59
Mo i Rana	66.19	14.08
Narvik	68.26	17.26
Oslo	59.55	10.45
Røros	62.35	11.23
Stavanger	58.58	05.44
Trondheim	63.26	10.24

City	Latitud °N	Longitud °E
Denmark		
Aalborg	57.03	09.55
Aarhus	56.10	10.11
Esbjerg	55.29	08.28
Fredrikshavn	57.28	10.31
Holstebro	56.22	08.37
Kolding	55.31	09.28
København	55.41	12.34
Nykøbing	54.47	11.52
Odense	55.24	10.24
Rønne	55.06	14.42
Sønderborg	54.55	09.47

City	Latitud °N	Longitud °E
Finland		
Helsinki	60.11	24.56
Jyväskylä	62.15	25.45
Kajaani	64.14	27.44
Kuopio	62.53	27.41
Oulu	65.01	25.28
Rovaniemi	66.30	25.44
Tampere	61.30	23.46
Tornio	65.51	24.09
Turku	60.27	22.16
Vaasa	63.06	21.37

City	Latitud °N	Longitud °E
Åland		
Mariehamn	60.06	19.56

If your location can't be found in above table, you can easily find it at for example <http://maps.google.com/>

Search you address, right-click on the location and choose "What's here?"

In top left corner the coordinates are shown below the adress:

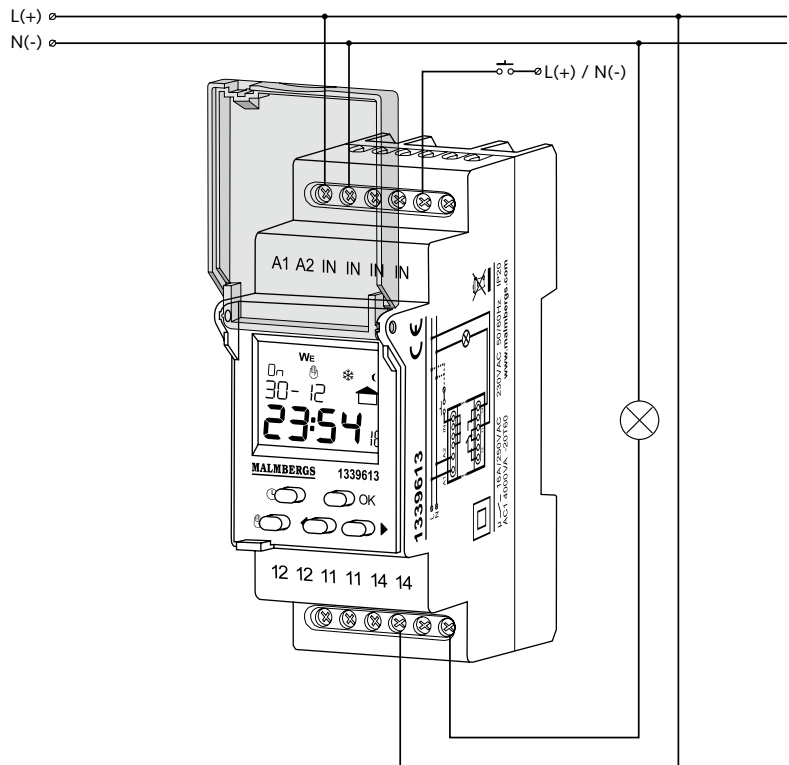


For above sample, use coordinates Lat 59.11 and Long 15.13 when configuring your digital timer.

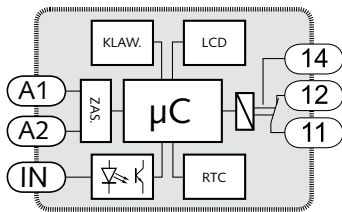
ASSEMBLY

1. Disconnect power supply circuit with a fuse, electrical energy redundant switch or insulation switch (all of them connected to adequate circuit).
2. Check non-voltage status on power supply conductors, with an appropriate tool.
3. Assemble the appliance 1339613 in the switching station on the TH 35 rail.
4. Connect conductors under clamps according to the connection scheme.

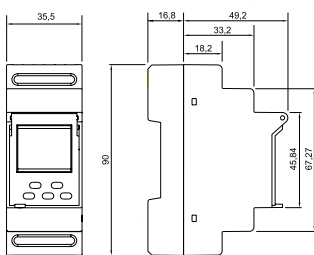
CONNECTION



INTERNAL SCHEME



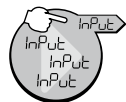
CASING MEASUREMENTS



ADVANTAGES

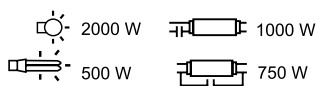


Intelligent calendar – the system has an in-built calendar, which automatically takes into account leap years, it makes introducing non-existent date impossible, and also calculates a day of a week on the grounds of a date and it takes into account the change of time into winter/summer one.

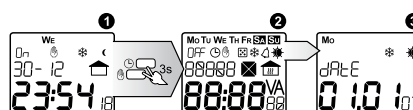


Universal external input – the system has an external input, with the help of which a user can enforce change of clock work mode without the necessity of interfering in a switchboard but using e. g. remote controller button.

LOAD CAPACITY



MAIN RESET



- 1 In order to cancel the clock system (time, date, activity of given functions etc.) you should hold buttons (Ⓞ) and (Ⓟ) simultaneously in the main menu for 3 sec;
- 2 All the display fields will light up;
- 3 After a while, the clock will automatically set date and time.

Attention: In order to restore factory settings, you should additionally hold button OK.