



Tubular motors Type 15 W and 15 W NMA

e l e r o

Installation instructions (translation)







- For the safety of persons it is important to follow these installation instructions!
- These instructions are intended for the fitter, the electrician and the user.
- Please pass on the installation instructions accordingly.
- Keep the installation instructions in a safe place!

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1. Safety instructions

1.1 Structure of the safety instructions


These installation instructions include important safety and warning instructions for the proper handling of the drive.

	Signal word	Meaning	Result if disregarded
	WARNING!	Potentially dangerous situation	Death or serious bodily injury.
	CAUTION!	Potentially dangerous situation	Slight bodily injury
	STOP!	Possible damage to property	Damage of the drive or its surroundings
	NOTE!	Useful tips simplify the handling of the drive	

1.2 Exclusion of liability

Following the installation instructions is the basic requirement for the safe operation of drives for roller shutters, rolling doors and awnings and for the achievement of various product characteristics and performance features.

elero GmbH assumes no liability for personal injuries, property damages and financial losses that arise from non-observance of the installation instructions. Liability for material defects is excluded in such cases.

	STOP!
	<p>Observance of the installation instructions is the prerequisite for disturbance-free operation and fulfilment of any claims related to defects.</p> <ul style="list-style-type: none"> • Therefore, first read the assembly instructions before you use the device! • Ensure that the installation instructions are always available to the user in legible form. • The instructions are not applicable to persons (including children) with impaired physical, sensory or mental abilities or lack of experience and knowledge. • The operator must ensure that the basic safety instructions are observed and fulfilled. • Make sure that these assembly instructions are kept to hand and can be found near the system. • The operator must have completely read and understood the installation instructions. • The following safety and installation instructions solely refer to the drive and not the accessories, regulation and control equipment.

1. Safety instructions

1.3 Important safety instructions



WARNING!

**Observe the following safety instructions.
Failure to observe them can lead to bodily injuries!**

General

- The assembler must check that the ambient temperature range stated on the drive is suitable for the installation site.
- Never install or take into operation devices which are damaged.
- Never hammer the drive as this will damage the bearings and housings.
- Use original **elero** parts only.
- If the drive is opened without permission or used in an improper manner, or if it is incorrectly installed or operated, there is a risk of damage to persons and property.
- Please note that with this drive (Type 15 tubular motors) the smallest internal tube diameter corresponds with 94 mm.
- The label on the tubular motors may only be covered after the installation.
- The drive contains small parts which can be swallowed.

Installation

- All installation work must be carried out by an expert.
- This expert must be suitably qualified.
- The place of installation must be cordoned off due to the danger of falling objects.
- Before the drive is installed, all cables, ropes, chains etc. that are not required and all facilities that are not needed for operation with a power drive are to be removed.
- The regulations of the local energy supply company as well as the regulations for wet and damp rooms according to VDE 0100 must be followed when making the connections.
- During installation, during operation and when work is carried out on the system, the option to separate all three poles from the mains must always exist (Hirschmann plug and female Hirschmann plug or a two-pole switch with minimum 3 mm contact gap or all-pole main switch).
- The drive must be installed at a height of at least 2.50 m above the floor or any other access height.
- The mains connection cable for this drive may only be replaced by the same cable type as supplied by the drive manufacturer.
- When working on the system (servicing, cleaning windows etc.), always disconnect it from the mains supply.
- Mount the stationary control device within sight or mount the switch with off presetting of the driven part, and this away from moving parts and at a height of at least 1.5 m.
- The rated voltage, speed, torque and operating time must correspond to the characteristics of the driven part.
- Please note the data on the type plate.
- The drive must be installed so that it is accessible and cannot get wet.
- Do not install drives in surroundings which are at risk of explosion or in mobile appliances (e.g. in vehicles).
- Maintain a distance of at least 0.4 m between moving parts and fixed objects.
- Note any country-specific regulations when installing the device.
- The drive may only be used by persons who have read and understood the operating instructions.

Operation

- Only use indoors (please observe the stated protection classes).
- If the tubular motor is used outdoors, then the connecting cable has to be laid properly in a shield tube and according to the stated protection class.
- Check the system (roller shutters, awnings and doors) regularly for wear or damage.
- In the case of automatic door systems: Check each month that the drive reverses when the door touches an obstacle with a height of 40 mm standing on the ground. Nobody may be within the range of movement of the door, since the door can start up unexpectedly.
- If one or more transmitters are used for controlling the system, its operating range must stay visible during operation.
- Keep people away from the system until it is at standstill.
- Keep children away from the (remote) control units.
- Ensure that there are no children or other persons within the door
- Observe the control documentation.

1. Safety instructions

1.4 Safety function

Doors which are fitted with an **elero** rolling door drive and operated with an **elero** control system, have to have the legally prescribed accessories for safe operation (e.g. opto-electric door-edge security systems, wind-up protection systems, light barriers, etc.).

These higher-level safety systems guarantee additional protection of people and property.

1.5 Transport

If the drive arrives in a damaged condition despite proper packaging, then it must not be commissioned. Immediately complain about the damage to the transport company.
Repair notes can be found on page 11.

In case of unauthorised removal of the necessary covers, improper use, incorrect installation or operation, there is a danger of severe injury to persons and substantial damage to property.

1.6 Target group

All installation, initial operation and troubleshooting work must be carried out by an electrician. (Please observe IEC 60364 and/or CENELEC HD 384 or DIN VDE 0100 and IEC 60664 or DIN VDE 0110 and national accident prevention regulations).

An electrician in the sense of these general safety instructions is a person acquainted with the assembly, installation and initial operation of the product with appropriate qualifications.

All work in the other areas, for example operation and disposal, must be carried out by suitably instructed persons.

1.7 Intended use

The tubular motors Type 15 W and Type 15 W NMA are intended exclusively for roller shutters, awnings and rolling doors.

Manual actuation is permitted only in the case of a power failure. Continuous operation or actuation with a drill etc. is forbidden.

Commissioning (i.e. beginning of intended operation) is only allowed if the valid EMC guidelines (2004/108/EU) are observed.

The technical data and the information on connection conditions can be found on the type plate and in this documentation and must be strictly adhered to.

1.8 Manufacturing note

The tubular motors are manufactured according to the following guidelines:

- **DIN EN 12453** (Industrial, commercial and garage doors and gates – Safety in use of power operated doors)
- **DIN EN 12604** (Doors - mechanical aspects)
- **DIN EN 60335-1** (Safety of electrical equipment)
- **DIN EN 60335-2-97** (Special requirements for roller shutters, awnings and similar installations)



All tubular motors are subject to 100% testing by **elero** before delivery.

1.9 Testing and maintenance

According to EN 12635 „Doors - Installation and use“ the door system has to be checked for safety by an expert before initial operation and after regular maintenance. The door manufacturer defines the frequency for maintenance and inspections. The execution of the testing has to be documented in a log book.

Important: The system may not be operated when repairs, maintenance or adjustments are being carried out!

1.10 Safety instructions for the electrical connection

 	CAUTION!
	<p>Observe the following safety instructions. Failure to observe them can lead to bodily injuries!</p> <p>Risk of injury due to electrocution!</p> <ul style="list-style-type: none">• The connections to the 230 V mains must be made by an electrician.• Use only original elero parts and original elero controllers.• Before accessing the connection terminals all mains circuits must be switched off.• The regulations of the local energy supply company as well as the regulations for wet and damp rooms according to VDE 0100 must be followed when making the connections.• Check the system regularly for wear or damage to connection cable, fixing devices and safety equipment.• When working on the system (servicing, cleaning), always separate it from the mains supply.


2. Scope of supply

3. Installation

2. Scope of supply

Drive version	Type 15/...W	Type 15/...W NMA
Circlip 60 x 2 DIN 471	•	•
Key 7 x 8 x 22 DIN 6885	•	•
Hex socket countersunk screw M8 x 16 DIN 7991	•	•
Drilling template T 15	•	•
Installation instructions	•	•
Drive adapter set for winding shaft – optional	•	•
Optional crank handle	–	•

3.1 Safety instructions for installation

	WARNING!
	<p>Observe the following safety instructions. Failure to observe them can lead to bodily injuries!</p> <ul style="list-style-type: none"> • Rated torque, speed, voltage, operating time, stop torque, protection class and degree of protection must be adapted to the requirements of the driven part. • It must be ensured that an entrapment between the driven part and the surrounding fixed parts due to the movement of the driven part is prevented. • Before installing the drive, check whether the driven part is in good mechanical condition. • The drive must be installed at a height of at least 2.50 m above the floor or any other access height. • Mount the stationary control device within sight or mount the switch with off pre-setting of the driven part, and this away from moving parts and at a height of at least 1.5 m. • The operating range of the system must always be visible during operation. • After installation, check that the security system and manual mode are working properly. • In the case of awnings, a horizontal distance of at least 0.4 m must be maintained between the completely unrolled driven part and any fixed object.

3.2 Technical data

Type		15/12	15/15	15/18	15/23	15/30
Rated voltage	V AC	230				
Rated frequency	Hz	50				
Rated current	A	3.4	3.5	3.7	3.9	5.4
Rated power consumption	W	700	740	780	810	1250
Rated torque	Nm	120	150	180	230	300
Protection class	IP	44				
Rated operating time S2	min.	6	6	6	4	4
Door cycles per hour***	f ₁ h ⁻¹	6				
Permissible temperature range**	°C	-10°C to +40°C				
Rated speed	rpm	12				
Limit switch range	revolutions	36				
Smallest tube inside Ø	mm	94				
TÜV design tested		•	•	•	•	•
Drive weight	approx. kg	13				14

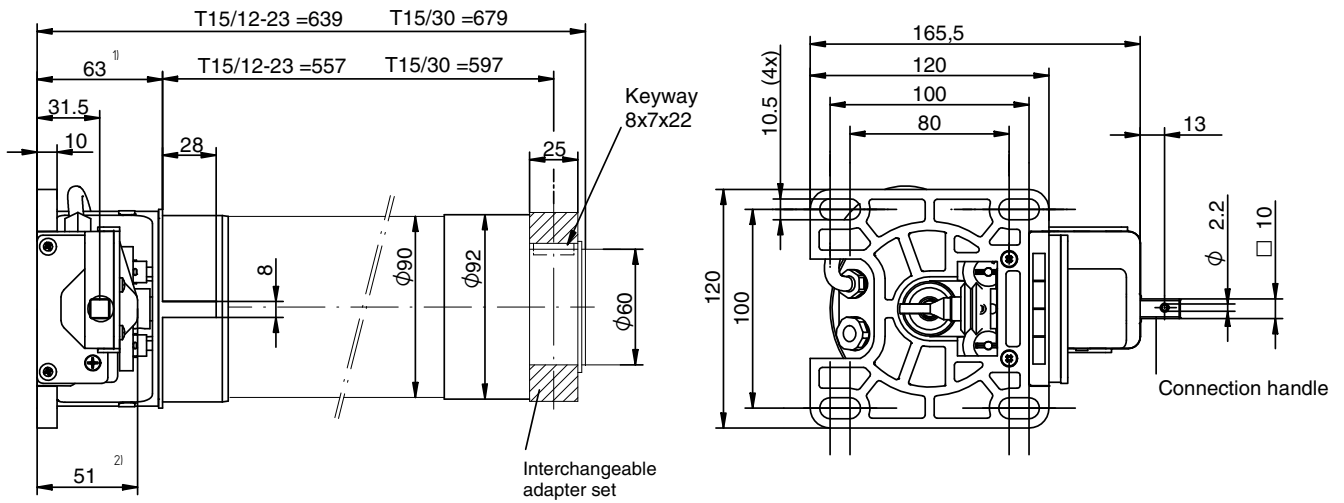
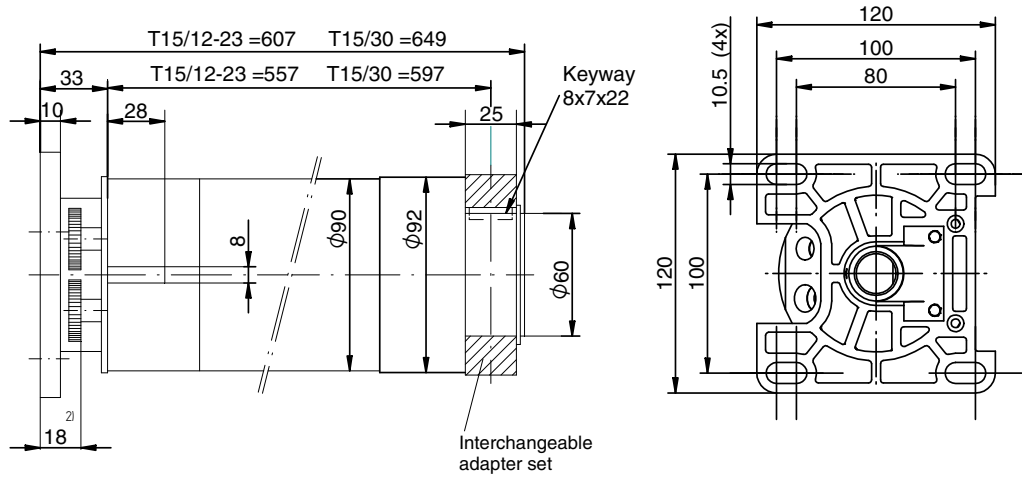
** The rated torques of the drives are guaranteed from -20 °C to 60 °C.

*** One door cycle consists of: 5 rotations OPEN - 30 s pause - CLOSE.

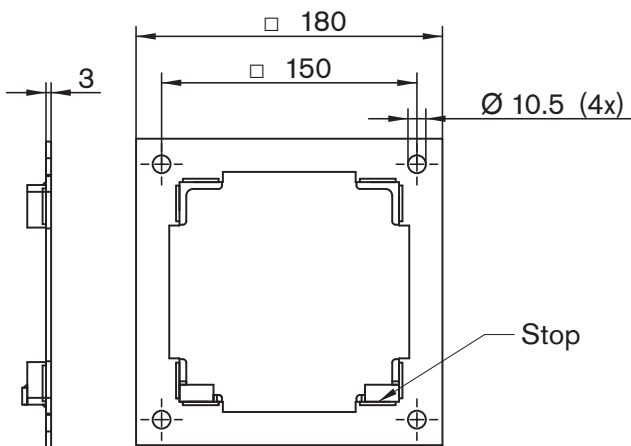
Other rated voltages on request.

3. Installation

3.3 Mounting dimensions



- 1) lateral space requirements for roller shutters etc.
- 2) lateral minimum space requirements when overlapping the limit switch



3. Installation

Lifting capacity chart

3.4 Lifting capacity chart (kg) for one-piece roller shutters and rolling doors

Type	Rated torque	Shaft ∅	Nom. bar thickness	Rolling door / roller shutter height up to						
				2.0 m	2.5 m	3.0 m	3.5 m	4.0 m	4.5 m	5.0 m
	Nm	mm	mm	kg	kg	kg	kg	kg	kg	
15/12	120	100	14	182	175	168	160	155	149	143
		100	19	167	160	150	143	138	132	126
		100	23	157	151	140	132	127	122	116
		133	14	146	146	142	139	136	133	129
		133	19	143	138	133	130	125	121	117
		133	23	139	131	126	123	117	113	109
15/15	150	100	14	227	218	210	200	193	186	179
		100	19	209	200	188	179	172	165	158
		100	23	196	188	174	165	159	152	145
		133	14	182	182	178	174	171	166	161
		133	19	179	172	166	162	156	151	146
		133	23	173	164	158	154	146	141	137
15/18	180	100	14	272	262	251	240	232	223	215
		100	19	251	241	226	214	207	198	190
		100	23	236	226	209	198	191	183	223
		133	14	219	219	213	208	205	199	194
		133	19	215	206	199	194	188	181	176
		133	23	208	196	189	185	176	169	164
15/23	230	100	14	384	335	321	306	296	285	275
		100	19	320	307	288	274	264	253	242
		100	23	301	289	267	253	244	234	223
		133	14	279	279	273	266	261	254	247
		133	19	274	264	255	248	240	231	224
		133	23	265	251	242	236	224	216	203
15/30	300	100	14	454	436	419	400	386	372	358
		100	19	418	401	376	357	344	330	316
		100	23	393	377	349	330	318	305	291
		133	14	364	364	356	347	341	331	323
		133	19	358	344	332	324	313	301	293
		133	23	346	327	315	308	293	281	273

The stated figures refer to the complete roller shutter / rolling door in kg.
 15% friction is taken into account. The friction can be higher due to additional door seals, wind loads etc. Carry out necessary corrections.
 Please refer to the chart "Permissible load for shafts"

These values are guide values.

3. Installation Connection Limit switch setting



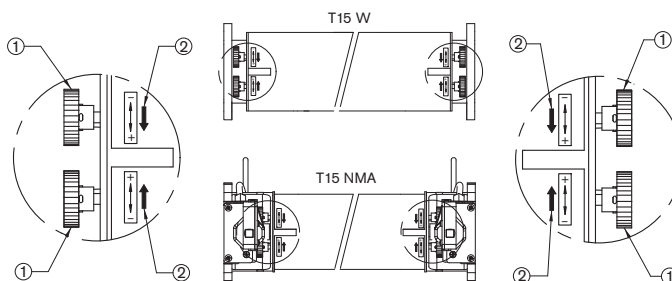
STOP!

- It is not permitted to connect any further drives or consumers in parallel due to capacitor feedback voltage.
- Only connect a locked venetian blind switch or momentary contact switch or only mechanically or electrically locked switching devices.
- The drive must first be disconnected for at least 300 ms before changing the direction. Only use suitable **elero** control units. For example, the 'DoorControl' or 'SafeControl' for doors.
- The drives are designed for short-time operation. The coil temperature limiter switches off once the time is exceeded.
- Disconnect the drive and the coil temperature limiter switches on again automatically after cooling down.
- The limit switches only function if the drive is built into the winding shaft and the shaft is secured against axial movement.

3.6 Connection example

Limit switch setting

The operating limit switches are set at the factory to 8 revolutions of the shaft. If more than 8 revolutions of the shaft are necessary, proceed as described under "Use of the entire limit switch range".



- ① Limit switch adjusting screw
- ② Direction of rotation of the shaft

Identify the limit switch adjusting screws from the direction of travel arrows. Turn limit switch adjusting screw as follows:

- minus (-)** = shorter travel
- plus (+)** = longer travel

Setting of the "Up" direction

Allow the drive to run in the "Down" direction, attach the roller shutter to the shaft and run the drive in the "Up" direction. At the same time, turn the adjusting wheel "Up" in - (minus) direction until the drive stops. Maintain pressure on the "Up" button on the installation cable and turn the adjusting wheel "Up" in '+' (plus) direction until the desired limit position is reached. If the limit position is not reached, lower the roller shutter and repeat the procedure as described above.

Setting of the "Down" direction

Switch on the drive in the "Down" direction and turn the adjusting wheel "Down" in '-' (minus) direction until the drive stops. Maintain pressure on the "Down" button on the installation cable and turn the adjusting wheel "Down" in '+' (plus) direction until the desired limit position is reached.

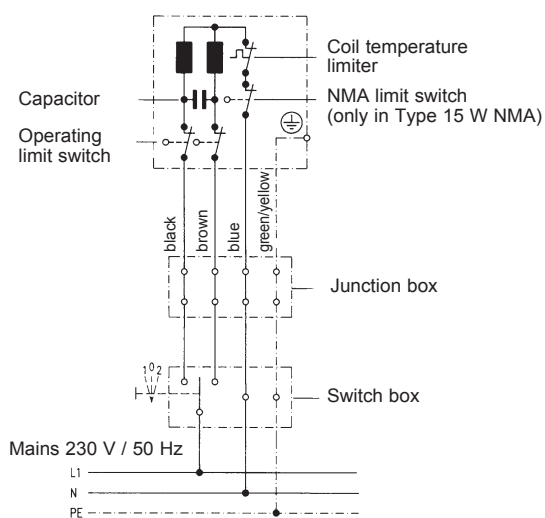
Use of the entire limit switch range

If more than 8 revolutions of the shaft are necessary, the motor must be switched on in "Down" direction until the drive switches off. Maintain pressure on the "Down" button and turn the adjusting wheel "Down" in '+' (plus) direction until the drive has made approx. 2 revolutions.

Functional testing of the end positions

Allow the drive to run to the 'up' and 'down' end positions again and check the end positions. Carry out a fine adjustment if necessary.

3.5 Connection example



Notice:

- The drive has safe operating limit switches; hence, no additional emergency limiting device is required.
- Connection is via an interlocked push button or with an **elero** door control.

3. Installation Installation and mounting



STOP!

- The fitter has to check the solidity of the masonry etc. before installing the system.
- The fixing plates of the Type 15 tubular motors are not oscillating and must be attached at right angles without tension to the fixing area.
- It is imperative to use the wall bracket plate item no. 23 100.0001 in case of unevenness.

Installation in the winding shaft (round tube)

1. Cut a notch into the tube on the motor side.



Tube Ø (mm)	a (mm)	b (mm)
98 x 2	8.5	28
100 x 3	8.5	28
102 x 2	14.5	31
108 x 3.6	14.5	31

Tube Ø (mm)	a (mm)	b (mm)
133 x XX	8.5	28
159 x XX	12.5	26
168.3 x XX	12.5	26

- Place the drilling template around the tube according to the table of dimensions on page 6 and adhere it. Subsequently mark with a punch.
- Drill using a 8.5 mm Ø drill bit, then make the recess for the countersink screw head.
- Push the drive with matching drive adapter and limit switch crown into the tube, as well as the limit switch crown cam into the slot.



Do not knock or let the drive fall into the tube.

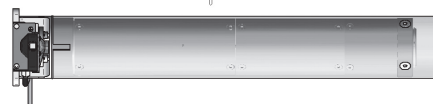


5. Screw the drive adapter to the tube (four M8 countersunk screws).

6. Mount the shaft; secure the motor and the idler/counterpart support or the safety brake and the tube against axial shifting.

7. Connect the drive with the installation cable matching the core colours and allow the drive to run in the "Down" direction until the limit switch switches off. The installation cable is only suitable for installation work. See "Limit switch setting".

8. Attach the roller shutter to the shaft.



STOP!

Do not drill in the area of the tubular motor!

Installation in profile tubes

Push the drive with matching drive adapter and limit switch crown into the profile tube. See points 6 to 8 of "Installation in round tubes" for further instructions.

4. Manual operation



CAUTION!

**Observe the following safety instructions.
Failure to observe them can lead to bodily injuries!**

- Switch off the circuit breaker (main switch) before manual operation.
- The manual operation is only needed for operating the door, awning, roller shutter etc. in an emergency, e.g. in the case of power failure.
- Operation of NHK/NMA drives with a drill etc. is forbidden.
- Keep the crank handle in the immediate vicinity of the door so that it is easily accessible at all times.
- No more travel commands must be present or given.
- Manual operation may only be done with the motor stopped and switched off.
- Manual operation may only be done from a safe position.
- Keep people away during manual operation.
- Do not move the system beyond its end positions during manual operation.
- Make sure that the crankshaft always turns freely during manual operation.

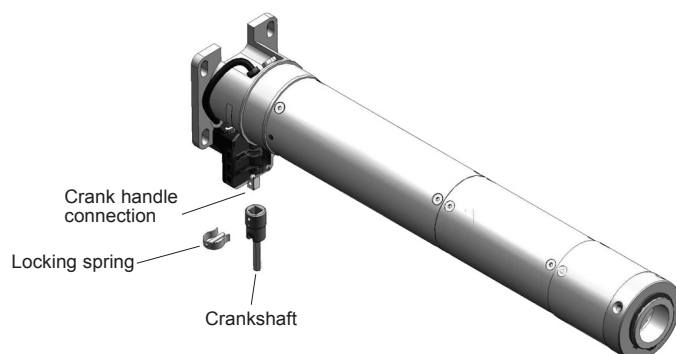


STOP!

- Mount the crank handle at a height of no more than 1.8 m.
- The crank handle must be mounted so that it is suitable for use at any time.
- Manual operation can only be done from a safe standing place and with the drive switched off.
- The crank handle connection must not be subjected to impacts.
- The crankshaft must turn freely.
- In rolling systems, the crankshaft must not be subjected to lateral or longitudinal forces and must turn freely.

4.1 Assembly of the crank handle

- Connect the crankshaft to the crank handle connection.
- Secure it axially using the locking spring.





4.2 Using the crank handle

- The circuit breaker (mains switch) must be switched off before manual operation.
- Do not move the system beyond its end positions during manual operation.
- Open or close the shutter.
The NMA limit switch switches off.
- After manual operation, turn the crank handle approx. $\frac{1}{4}$ of a turn back; the NMA limit switch switches on again. The door can be operated electrically again.

5. Service

5. Service

 	CAUTION!
	<p>Observe the following safety instructions. Failure to observe them can lead to bodily injuries!</p> <p>Risk of injury due to electrocution!</p> <ul style="list-style-type: none"> • Switch off the drive for cleaning and maintenance.

5.1 Troubleshooting

Fault	Cause	Remedy
Drive does not run	No voltage	Check the mains connection
Mains connection is OK. – Drive does not run.	Coil temperature limiter has switched off.	Disconnect; the coil temperature limiter switches on again automatically after cooling down.
Mains connection is OK. – Drive does not run.	NMA limit switch has switched off.	Turn the crank handle approx. ¼ of a turn back; the NMA limit switch is thus switched on again.
Drive does not run in the specified direction.	Incorrect connection.	Swap over the black and brown wires.
End positions are incorrect.	The system has been moved beyond the end position by NMA.	Readjust the limit switches.
End positions are incorrect.	Winding shaft axially shifted and limit switch crown does not rotate with it.	Repair the system and secure against axial shifting.
Shutter runs diagonally.	Fixings or slats are damaged.	Repair the system.
Shutter does not run smoothly.	Shutter is scraping against an object. Guide rail damaged.	Repair the system.

5.2 Notes on repair

Please contact us if you are unable to eliminate a problem:

Please supply the following information when consulting our service team:

- Item number
- Item description
- Application site of the drive
- Name of the connected controller
- Type of fault
- Accompanying conditions
- Own presumption
- Previously occurring unusual events

Repair address

elero GmbH
Antriebstechnik
Linsenhofer Straße 65
D-72660 Beuren

Tel. (07025) 13-01
Fax (07025) 13-212

www.elero.com

Please visit us on the Internet if you require a contact outside Germany.

5.3 Disposal

- Connect the crankshaft to the crank handle connection.
- Secure it axially using the locking spring.

6. EC Declaration of Incorporation

EG-KONFORMITÄTSERKLÄRUNG

Wir erklären hiermit, dass das/die nachfolgend genannte/n Produkt/e der Maschinenrichtlinie 2006/42/EG entspricht/entsprechen.

Produktbezeichnung: **Rohrantrieb**

- Type 15/... W
- Type 15/... W NHK
- Type 15/... W NMA

Beschreibung: Rohrantrieb zum Betreiben von Rollläden, Rolltore und Rollgitter

Die Übereinstimmung der/s bezeichneten Produkte/s mit den wesentlichen Schutzanforderungen wird durch Einhaltung folgender Richtlinien und Normen berücksichtigt:

- EMV-Richtlinie 2004/108/EG
 - DIN EN 61000-3-2 (VDE 0838-2):2006
 - DIN EN 61000-3-3 (VDE 0838-3): 1995 +A1:2001 +A2:2005
 - DIN EN 55014-1 (VDE 0875-14-1):2006
 - DIN EN 55014-2 (VDE 0875-14-2): 1997 +A1:2001
- Niederspannungsrichtlinie 2006/95/EG
 - DIN EN 60335-1 (VDE 0700-1):2007
 - DIN EN 60335-2-97 (VDE 0700 -97):2007
- RoHS-Richtlinie 2002/95/EG
- DIN EN 12453:2001
- DIN EN 12604:2000
- DIN EN 14202:2004
- DIN EN 13561:2004

Beuren, 14.10.2011



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