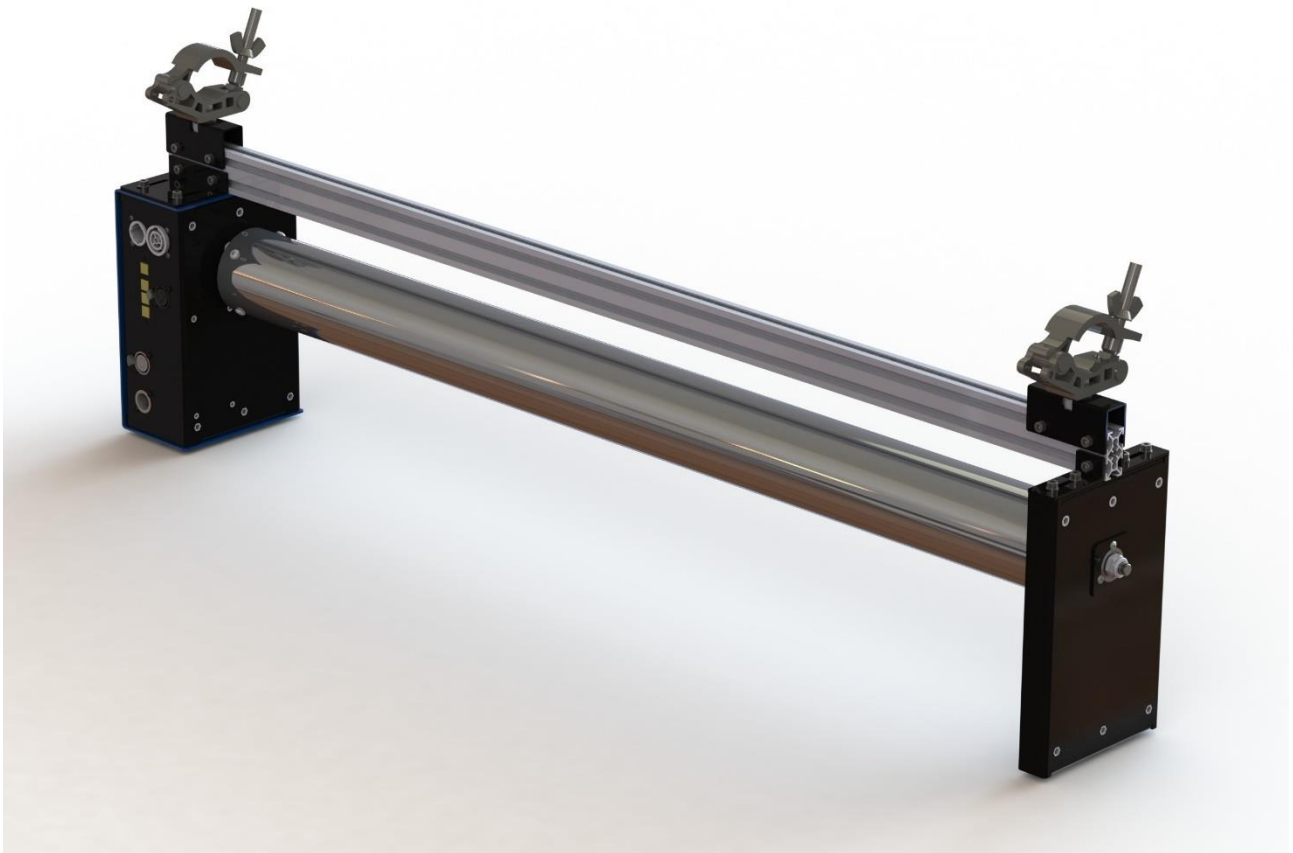




Mini Roll Down Series

Item No. 289.701 (Slow Motor) and No. 289.702 (Fast Motor)

User Manual



Safety Information



WARNING!

Read the safety precautions in this section before installing, powering, operating or servicing this product.

The following symbols are used to identify important safety information on the product and in this manual:



DANGER!
Safety hazard.
Risk of severe injury or death.



DANGER!
Hazardous voltage. Risk of lethal or severe electric shock.



WARNING!
Fire hazard.



WARNING!
Burn hazard. Hot surface. Do not touch.



WARNING! Refer to user manual.



This product is for professional use only. It is not for household use.

This product presents risks for severe injury or death due to fire hazards, electric shock, and falls.



Read this manual before installing, powering or servicing the Mini Roll Down; follow the safety precautions listed below and observe all warnings in this manual and printed on the Mini Roll Down. If you have questions about how to operate the Mini Roll Down safely, please contact your Wahlberg Motion Design supplier or Wahlberg Motion Design.



PROTECTION FROM ELECTRIC SHOCK

- Disconnect the Mini Roll Down from AC power before removing or installing any cover or part and not when in use.
- Always ground (earth) the Mini Roll Down electrically.
- Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault (earth-fault) protection.
- Before using the Mini Roll Down, check that all power distribution equipment and cables are in perfect condition and rated for the current requirements of all connected devices.
- Power input throughput cables must be rated 20 A minimum, have three conductors 1.5 mm² (AWG16) minimum conductor size and an outer cable diameter of 6-16 mm (0.24-0.47 inch). Cables must be heat-resistant to 90°C (194°F) minimum. In the EU the cables must be <HAR> approved or equivalent and in the USA minimum hard usage type (SJT or equivalent).
- Use only Neutrik powerCON TRUE1 NAC3FX-W cable connectors to connect to power input sockets. Use only Neutrik powerCON TRUE1 NAC3FX-W cable connectors to connect to power throughput sockets.
- Assembly power supply cables following the instructions in this manual only (see page 10).
- Isolate the Mini Roll Down from power immediately if any seal, cover, cable, or other component is damaged, defective, deformed, wet, or showing signs of overheating. Do not reapply power until repairs have been completed.
- Do not expose the Mini Roll Down to rain or moisture.
- Refer any service operation not described in this manual to a qualified technician.

PROTECTION FROM BURNS AND FIRE

- Do not operate the Mini Roll Down if the ambient temperature (Ta) exceeds 40° C (104° F).
- The exterior of the Mini Roll Down becomes warm during use. Avoid contact by persons and materials. Allow the Mini Roll Down to cool for at least 10 minutes before handling.
- Do not modify the Mini Roll Down in any way not described in this manual.
- Install only genuine Wahlberg parts.

PROTECTION FROM INJURY

- Fasten the Mini Roll Down securely to a fixed surface, rig, or structure when in use. The Mini Roll Down is not portable when installed.
- Ensure that any supporting structure and/or hardware can hold at least 10 times the weight of all the devices they support, and that the installation respects all locally applicable regulations.
- If suspending from a rigging structure, fasten the Mini Roll Down using the two supplied Manfrotto slim couplers according to the manual, see page 9.
- Always install the Mini Roll Down as described in this manual. If the Mini Roll Down is installed in a location where it may cause injury or damage if it falls, install as described on page 9.
- If possible, allow enough clearance beneath the Mini Roll Down so it cannot cause any danger to personnel beneath it. Else, adjust the lower limit accordingly following the instructions in this manual.
- Check that all external cobbles and rigging hardware are securely fastened.
- Block access below the work area and from a stable platform whenever installing, servicing or moving the Mini Roll Down.
- Do not operate the Mini Roll Down with missing or damaged covers, or shields.
- Do not use the Mini Roll Down over the head of people.
- Do not use the Mini Roll Down to lift people or animals.
- Only use the Mini Roll Down to lift static loads.



Disposing of this product

Wahlberg Motion Design products are supplied in compliance with Directive 2012/19/EU of the European Parliament and of the Council of the European Union on WEEE (Waste Electrical and Electronic Equipment), including amendments where applicable.

Help preserve the environment! Ensure that this product is recycled at the end of its life. Your supplier can give details of local arrangements for the disposal of Wahlberg Motion Design products.

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Technical specifications

Model:	Mini Roll Down Series
Item no.:	289
Dimensions: (L×W×H)	Tube length max. 4m (13.1 ft) × 150 × 295 mm. (5.9 × 11.6 in.) without Manfrotto clamps
Power supply:	100-240 V AC 50-60 Hz.
Power consumption:	Max. 150 Watt
Power inlet:	Neutrik powerCON TRUE1 NAC3PX (F/M)
DMX control signal:	DMX 512 1990 + DMX512A / 6 channels used.
DMX connection:	5 pole XLR, male & female

Slow Motor (289.701)

Lifting capacity (Load):	7.0 kg. (15.4 lb)
Lifting speed:	2.5-26 cm/sec. (1.0-10.2 in/sec.)
Motor:	24 V DC, 54 W

Fast Motor (289.702)

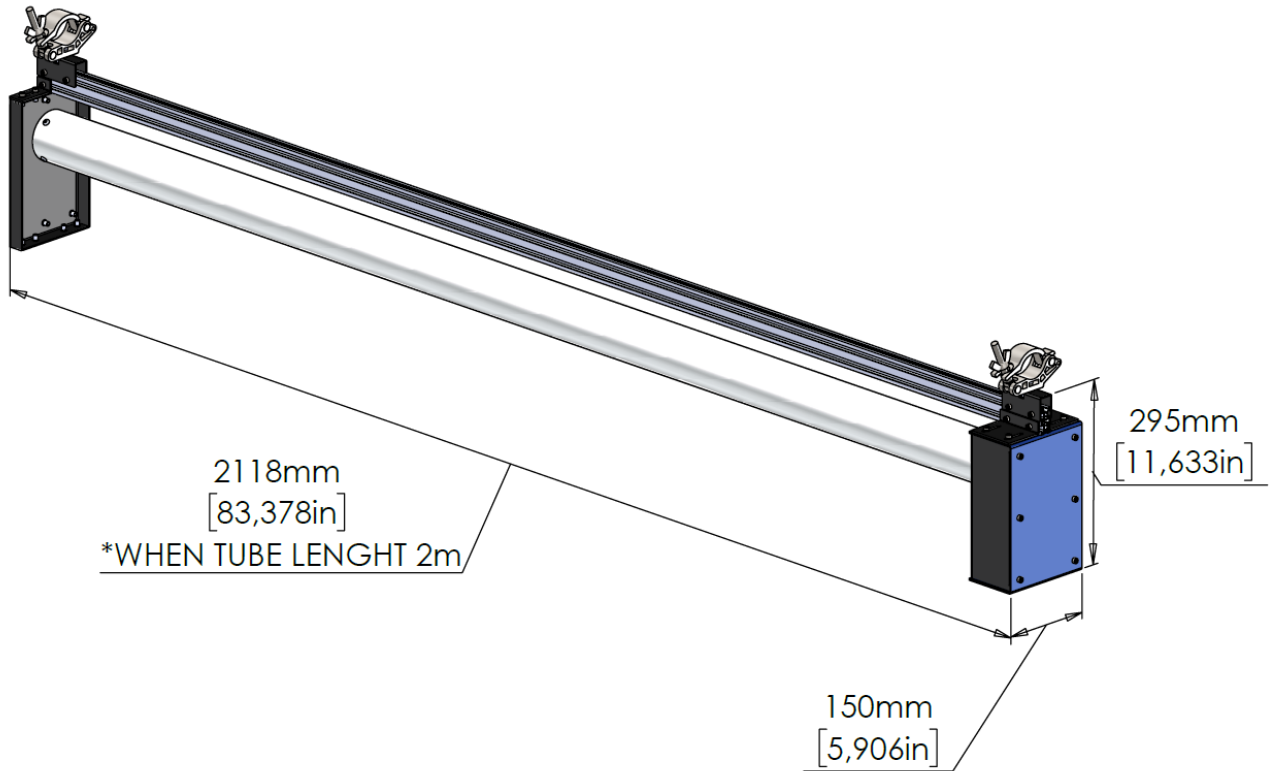
Lifting capacity (Load):	3.0 kg. (6.6 lb)
Lifting speed:	5-61 cm/sec. (2.0-24.0 in/sec.)
Motor:	24 V DC, 92 W

Noise emission:	≈55 dB
Ambient temperature:	5-40°C (41-104°F)
Weight (1 m tube):	7.5 kg (16.5 lb), tube 1.3kg/m (0.87 lb/ft.)
Mounting clamp:	2x Slim eye coupler 50 mm (2 in)
Duty-cycle:	50% when running more than 30min.

Drawing

Mini Roll Down Series (289)

More detailed drawings can be found in Appendix 1 on page 21



Introduction

Thank you for selecting the Mini Roll Down, a DMX controlled roll down system from Wahlberg Motion Design. Before using the Wahlberg Mini Roll Down for the first time, please read this manual carefully. Failure in handling can cause injury of persons and/or damage the roll down.

Package content

1×	Mini Roll Down
2×	Manfrotto Slim coupler
2×	Mounting bolt, nut, and washers (M12) for slim coupler mounting
1×	powerCon TRUE1 female plug NAC3FX-W for power cable
1×	User Manual
1×	Cheat sheet

Description

The mini Roll Down is for stage use, mainly for use in theatres, shows, and concerts. It lifts small curtains, projector screens, or similar in and out of the stage sphere at maximum load of 7.0 kg for the slow variant and 3.0 kg for the fast variant. The length of the drum depends on the application and can easily be changed. Two different versions have been developed, which vary in maximum lifting speed. The slow version has a lifting speed of 2.5 to 26 cm/s, while a faster version has been developed with a lifting speed up to 61 cm/s. Both versions are highly accurate and stop within 2 mm of the target position. Multiple Mini Roll Downs can easily be connected, as a chain, allowing for advanced and creative ways of making dynamic movements.

The two versions are controlled in the same manner. Typically, through 6 DMX channels from a lighting desk where the position and speed can be changed live or pre-programmed as wished. Through the lighting desk the top and bottom positions can also be set. Furthermore, the Mini Roll Down can be controlled using a Manual Control Box from Wahlberg Motion Design, or alternatively manually through mode 9 or 0.

Safety functions

The control system ensures that the motor is only powered when:

- The DMX signal is reliable.
- The speed control channel is on (more than 0%).
- The motor is instructed to move.
- No overload.

The Mini Roll Down should only be operated by an experienced lighting-desk-operator. The lighting desk must be programmed according to the manual, so the Mini Roll Down will stop when the speed is put to 0 %. It is also possible for the user to stop the Mini Roll Down by disconnecting the mains power. After Power interruption the top position of the Mini Roll down needs to be reset before the Mini Roll Down can function again

Area of use



For indoor use only!

WARNING! To reduce the risk of electric shock or injury: use indoors only

WARNING! To reduce the risk of electric shock, do not expose to rain: store indoors!

The Mini Roll Down is intended for indoor use only. It is designed for lifting and lowering material at the weight and speed stated in "Technical Data". Any other use of the Mini Roll Down may result in a risk of injury of persons or equipment damage.

Exceeding the load rating may cause failure of the equipment.

Do not modify the Mini Roll Down. For any modification of your Mini Roll Down, contact Wahlberg.

It is the customers' responsibility that any local restrictions concerning the use of the Mini Roll Down are fulfilled.

Using for the first time

Important! The Mini Roll Down must be protected from environmental factors such as physical shocks and vibration during transportation and storage.



WARNING! Read "Safety Information" on page 2 before installing, powering, operating, or servicing the Mini Roll Down. Before applying power to the Mini Roll Down:

- Check the Wahlberg Motion Design website at www.wahlberg.dk for the most recent documentation and technical information about the Mini Roll Down. Wahlberg user manual revisions are identified by the revision number in the bottom of each page.
- Carefully review the "Safety Instructions" on page 2.
- Check that the local AC mains power source is within the Mini Roll Down power voltage and frequency ranges.
- See "Power cables and power plug" on page 2. Install a Neutrik powerCON TRUE1 NAC3FX-W power input connector on a suitable power cable. If using the power from a mains power outlet, install a suitable power plug on the power cable.

Transport



Important! The Mini Roll Down must be protected from environmental factors such as physical shocks and vibration during transportation.

Use only the original packaging, flight case, or pallet frame for protecting the product during transport. Contact Wahlberg for enquiries regarding flight cases or pallet frames.

Physical installation



WARNING! The Mini Roll Down must be either fastened to a flat surface such as a roof or clamped to a truss or similar structure. Do not apply power to the Mini Roll Down if it is not securely fastened.

WARNING! The supporting surface must be hard and flat. Fasten the Mini Roll Down securely.

WARNING! Use only the supplied rigging clamp and M12 bolt. The clamp must be screwed into the Mini Roll Down's mounting brackets using the supplied M12 washers and M12 locking-nuts.

WARNING! When the unit is installed in a location where it may cause injury or damage if it falls, install a secondary suspension such a BGV C1 / DGUV 17 safety cable at the primary suspension (clamp) nearest the motor unit, and fasten it securely between the truss/pipe and the top bar of the Mini Roll Down. Make sure the safety cable is rated for the total weight of the complete unit including the load.

Fastening the Mini Roll Down to a flat surface

The Mini Roll Down can be fastened to flat surface such as a roof. Check that the surface can support at least 10 times the weight of all Mini Roll Downs and equipment to be installed on it, and that the installation respects all locally applicable regulations.

Mounting the Mini Roll Down on a truss (tube/pipe)

The Mini Roll Down can be clamped to a truss or similar rigging structure.



To clamp a Mini Roll Down to a truss (tube/pipe):

1. Check that the rigging clamp is undamaged and that the rigging structure can support at least 10 times the combined weight of all Mini Roll Downs and equipment to be installed on it.
2. Use the supplied rigging clamp or contact Wahlberg Motion Design for a replacement.
3. Fasten the clamp to the Mini Roll Down with the supplied M12 bolts, nuts, and washers in the hole in the mounting clamp of the Mini Roll Down.
4. Block access under the work area. Working from a stable platform, hang the Mini Roll Down on the truss with the wire downwards. Tighten the rigging clamp.
5. Install a suitable safety cable when hanging over-head.

AC power



WARNING! Read “Safety Information” on page 2 before connecting the Mini Roll Down to AC mains power.

WARNING! For protection from electric shock, the Mini Roll Down must be grounded (earthed). The power distribution circuit must be equipped with a fuse or circuit breaker and ground-fault (earth-fault) protection.

WARNING! Socket outlets or external power switches used to supply the Mini Roll Down with power must be located near the Mini Roll Down and easily accessible so that the Mini Roll Down can easily be disconnected from power.

Voltage





WARNING! Check that the voltage range specified on the Mini Roll Down’s serial number label matches the local AC mains power voltage before applying power to the Mini Roll Down. Do not apply AC mains power to the Mini Roll Down at any other voltage than that specified on the Mini Roll Down’s serial number label.

Power cables and power plug

The Mini Roll Down requires a power input cable with a Neutrik powerCON TRUE1 NAC3FX-W cable connector for AC mains power input. The cable must meet the requirements listed under “Protection from electric shock” on page 2.

If you install a power plug on the power cable, install a grounding-type (earthed) plug that is rated 20 A for USA and 16A for Europe. Follow the plug manufacturer’s instructions. Table 1 shows standard wire color-coding schemes and some possible pin identification schemes; if pins are not clearly identified, or if you have any doubts about proper installation, consult a qualified electrician.

Table 1 - Colour guide

Wire Colour	Conductor	Symbol	Screw (US)
Brown	Live	L	Yellow or brass
Blue	Neutral	N	Silver
Yellow/green	Ground (earth)	 or 	Green

Installing a power input connector on a power cable

To install a Neutrik powerCON TRUE1 NAC3FX-W input connector on a power cable, follow the original Neutrik instructions in Appendix 2 on page 21.

By supplying power to the Mini Roll Down, the DMX and Mode LED should light up or start flashing depending on the situation, see page 12 for setup.

Data link

A DMX 512 data link is required in order to control the Mini Roll Down via DMX. The Mini Roll Down has 5-pin XLR connectors for DMX data input and output. The pin-out on all connectors is pin 1 = shield, pin 2 = (data -), and pin 3 = (data +). Pins 4 and 5 in the 5-pin XLR connectors are not used in the Mini Roll Down but are available for possible additional data signals as required by the DMX512-A standard.

The Mini Roll Down is subject to the common limit of 32 devices per daisy-chained link. Note that if independent control of a Mini Roll Down is required, it must have its own DMX channels. Motors that are required to behave identically can share the same DMX channels. To add more motors or groups of products when the above limit is reached, add a DMX universe and another daisy-chained link.

Tips for reliable data transmission

- Use shielded twisted-pair cable designed for RS-485 devices: standard microphone cable cannot transmit control data reliably over long runs. AWG24 cable is suitable for runs up to 100 meters (328 ft.).
- Never split a DMX line without using an opto-isolated RS-485 splitter/amplifier.
- Terminate the link by installing a termination plug in the output socket of the last product. The termination plug, which is a male XLR plug with a 120 Ohm, 0.25 Watt resistor soldered between pins 2 and 3, “soaks up” the control signal so it does not reflect and cause interference. If a splitter is used, terminate each branch of the link.

Connecting the data link

To connect the Mini Roll Down to data:

1. Connect the DMX data output from the DMX controller to the Mini Roll Down’s male 5-pin XLR DMX input connector (DMX 512 IN).
2. Connect the DMX output of the Mini Roll Down to the DMX input of the next Mini Roll Down and continue connecting Mini Roll Downs output to input (DMX 512 OUT).
3. Terminate the last Mini Roll Down on the link with a 120 Ohm resistor.

The DMX lamp is the green led, next to the DMX-selectors.

- Glows constant, when the DMX connection is correct.
- Flash if the DMX signal is missing or wrongly connected. Note that for mode 7-8-9-0 no DMX signal is needed, thus the DMX lamp will blink but the Mini Roll Down will operate as desired.



Setup



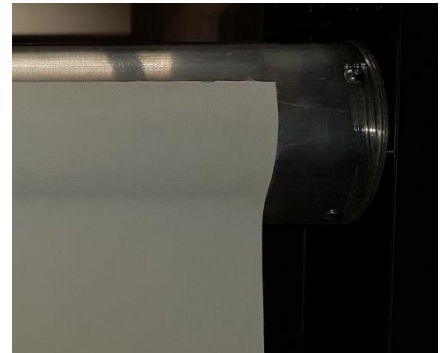
WARNING! Read “Safety Information” on page 2 before installing, powering, operating, or servicing the Mini Roll Down.

WARNING! Only experienced DMX users should operate the Mini Roll Down. Contact Wahlberg for further information and education on DMX protocol.

Mounting the load

When mounting the load make sure it is orientated correctly, otherwise the fabric mounted will roll over itself in the wrong direction when moving to the top position.

The easiest way to mount a load on the tube is simply to attach it with double sided tape. Just make sure that at least 1 full rotation is left on the tube when it is rolled all the way out in operation.











Mode setting

The mode switch is found on the front panel left to the DMX address switches and this can be used to select various functions and ramps for normal operation, setup and diagnostic purpose.



Mode setting overview

MODE	Function	Description	Note
1	DMX Positioning slow ramp 	For normal operation of the Mini Roll Down, and the slow, medium or fast ramps may be selected depending on the use and the type of load.	See page 14, 15 and Figure 1 for details about the setup and run.
2	DMX Positioning medium ramp 		
3	DMX Positioning with fast ramp 		
4	DMX Positioning slow ramp and hard-limits active 	For applications where hard-limit switches are desired, like in situations where the range needs to be limited by a hardwired switch. The slow, medium or fast ramps may be selected depending on the use and the type of load.	For more information about this option see manual for the DMX Motor Unit.
5	DMX Positioning medium ramp and hard-limits active 		
6	DMX Positioning with fast ramp and hard-limits active 		
7	Manual set soft limit top and bottom position using the control box	Manually set/run to the soft limit top and bottom positions using the optional control box (not included), as for stand-alone operation without DMX.	See page 17 for details about the setup and run.
8	Manual run to top and bottom limits using the control box		
9	Manual CW (DMX address = speed) 	Manually setting the motor to a desired direction and speed via the DMX address switches, for simple stand-alone operation without DMX control.	CAUTION! Manual modes will overrule any DMX control, and movement of the motor may only be interrupted by powering off the mains voltage.
0	Manual CCW (DMX address = speed) 		

DMX ADDRESS setting and channel overview

The DMX address, also known as the start channel, is the first channel used to receive instructions from the controller. For independent control, each Mini Roll Down must be assigned its own control channels.

The DMX address is configured using the three DMX ADDRESS selectors on the Mini Roll Down. The selected DMX address states from which channels, on the lighting desk, the Mini Roll Down is controlled. The Mini Roll Down uses 6 DMX channels. The example below shows a DMX start address 212 (200+10+2).



DMX channel overview

DMX channel	Function	Description
1	Position rough	<p>This channel controls the position of the Mini Roll Down, with the speed (DMX channel 3).</p> <p>This rough position works together with the fine position (DMX channel 2).</p> <p>The rough position and the fine position are multiplied in to a 16 bit channel. The rough position is the <i>MSB</i>.</p>
2	Position fine	<p>This channel controls the position of the Mini Roll Down, with the speed set on DMX channel 3.</p> <p>This fine position works together with the rough position (DMX channel 1).</p> <p>The fine position and the rough position are multiplied in to a 16 bit channel. The fine position is the <i>LSB</i>.</p>
3	Speed	<p>This channel controls the speed of the Mini Roll Down.</p> <p>This channel defines the maximum speed, and the Mini Roll Down slows down as closing in on the wanted position.</p> <p>This channel also works as a main brake; the motor does not run unless the channel is set above 0%. The speed-channel can also be used to make soft and slow movements or fast and sudden movements.</p>
4	Enable save soft limits	<p>When channel 4 is between 60-65% saving of soft-limit top and bottom position is enabled.</p> <p>The Mini Roll Down can be operated while channel 4 is between 60-65%, however, to minimise the risk of accidentally setting new top and bottom limit, channel 4 should be set to 0% when not in use.</p>
5	Manuel Up / Set soft-limit top (100% position)	<p>The value of the channel determines the speed at which the Mini Roll Down moves up. This channel overrules movement with positioning via channel 1 & 2.</p> <ul style="list-style-type: none"> Channel 4 <i>between</i> 60-65% enable save soft-limits. When channel 4 is in this range the top position can be adjusted using channel 5. The Top position is saved when channel 5 is put back at 0%. Note that it should be moved gradually towards 0% to give the banner time to slow down. The top position should be set with channel 5 before the bottom position is set with channel 6, since the range is calculated relative to the top position. Channel 4 <i>not between</i> 60-65% enable save soft-limits is <i>NOT</i> enabled. When save soft-limits is not enabled, channel 5 can still run the roll up but any position is not saved, so it returns to the position given by channel 1 & 2.
6	Manuel Down / Set soft-limit bottom, and range (0% position)	<p>The value of the channel determines the speed at which the Mini Roll Down moves up. This channel overrules movement with positioning via channel 1 & 2.</p> <ul style="list-style-type: none"> Channel 4 <i>between</i> 60-65% enable save soft-limits. When channel 4 is in this range the end position can be adjusted when running with channel 6. The bottom position is set when channel 6 is put back at 0%. The top position should be set with channel 5 before the bottom position is set with channel 6, since the range is calculated relative to the top position. Channel 4 <i>not between</i> 60-65% enable save soft-limits is <i>NOT</i> enabled. When save soft-limits is not enabled, channel 5 can still run the roll down but any position is not saved, so it returns to the position given by channel 1 & 2.

Setting the top and end positions

When the Mini Roll Down is ready, the first step is to set the soft-limit top and bottom positions. See channel description for channel 4, 5 and 6 above. When the range has been set once on channel 6 it is saved and does not need to be set again unless a new range is needed.

Example:

- DMX channel 4 is set to 62% → Soft-limit save enabled.
- DMX channel 5 is set to 30% → The roll starts moving up.
- DMX channel 5 is set to 0% → The roll stops, and the soft-limit top position is saved at this point.
- DMX channel 6 is set to 30% → The roll starts to move down.
- DMX channel 6 is set to 0% → The roll stops, and the soft-limit bottom position is also saved.

The Mini Roll Down is now ready for use and the soft-limit top and bottom positions have been saved. Finally, the position control with channel 1 and 2 is now relative to the top and bottom soft-limits settings.

It is recommended to set the soft-limit top position after each power-up, however, moving the roll to the top position before powering off should lead to identical top and bottom positions whenever the unit is repowered, provided that the drum position was not manually changed or the drum return to the top position was interrupted by a power failure, furthermore excessive transportation conditions may also affect the drum position.

For further guidance see below illustration for application of the soft-limits.

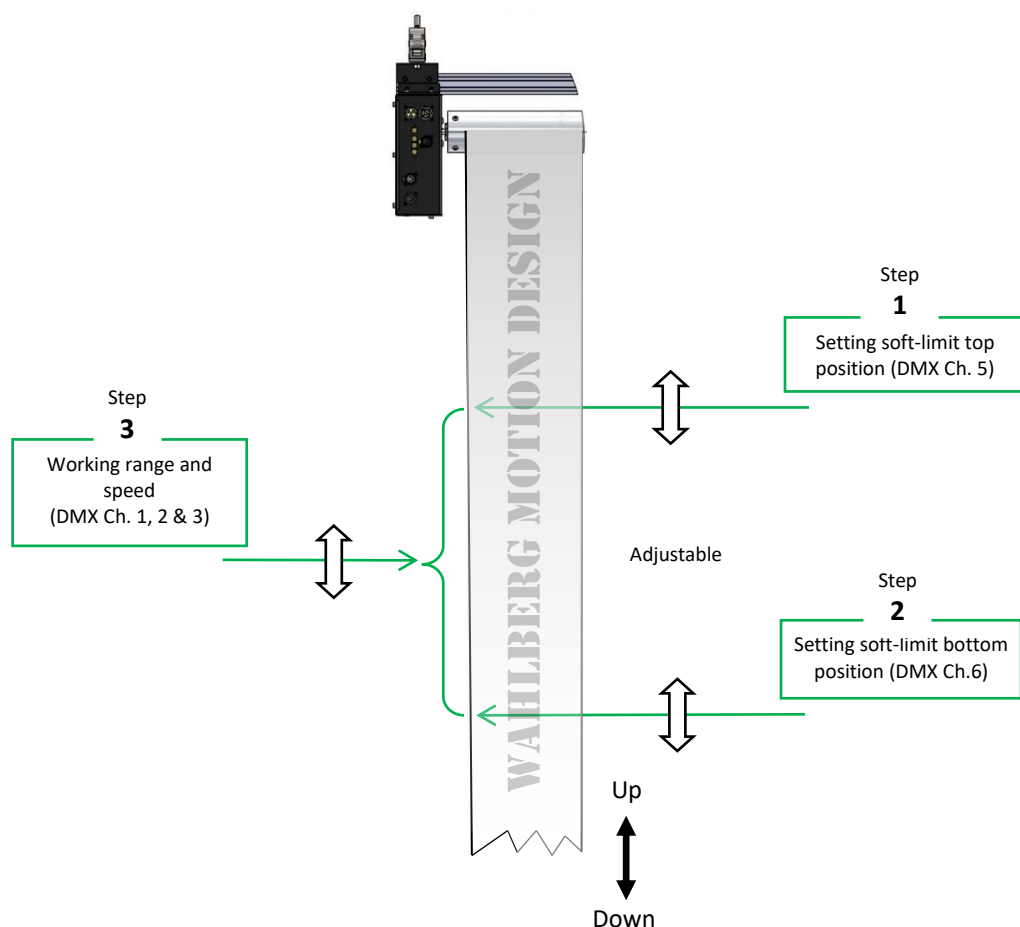


Figure 1: Illustration of application of the soft-limits.

Positioning

When the Mini Roll Down has been setup and the top position is set, it is possible to use it for positioning run.

The position is set on the DMX channel 1 and 2, which controls the rough-and fine-position. Where 100 % is the top-position and 0 % is the bottom-position.

The positions lamp indicates, by fast flashing, that the Mini Roll Down is going towards the wanted position. The position lamp indicates, by stable light, that the Mini Roll Down has found the wanted position and the motor has stopped.



The speed is set on the DMX channel 3, where 100 % is the fastest and 0 % is the slowest.

The Mini Roll Down does not run unless DMX channel 3 is set above zero, and therefore this channel works as a main brake.

Manual operation using the Control Box

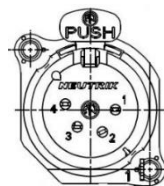
Insert the control box (not included) into the limit switch connector and apply mains power to the product.

Procedure:

State	Step	Description
Setup/ Adjustment	1	Select mode 7 on the MODE switch and set a slow motor speed using the DMX address switches, approx. 100 is recommended for setup purpose.
	2	Push the Up (CW) button on the control box and keep it pushed until the desired soft-limit top position is reached.
	3	Push the Down (CCW) button on the control box and keep it pushed until the desired soft-limit bottom position is reached.
	4	Select mode 8 and set the desired speed using a value between 060 and 512 on the DMX address switches (The minimum obtainable speed may vary due to the weight of the load).
Operation	1	Push the Up (CW) button and the motor will move to the top position.
	2	Push the Down (CCW) button and the motor will move to the bottom position.
Power down	-	Return to the top position as this is always the expected position at power-on. In case this is not followed, a full setup procedure will need to be done.
Power-on	-	Whenever the product is repowered, there should be no need to setup the top and bottom positions, provided the product was powered down at the top position, and the shaft position was not changed (manually or due to transportation).

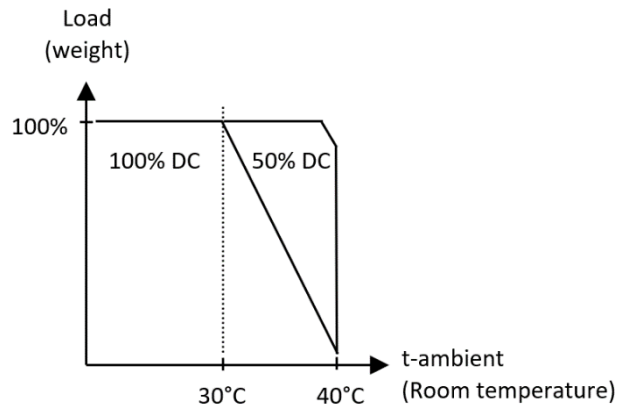
Control box and Hard-limit switch port

The following table shows the needed connections to the control box port for using the manual mode, it also includes the connections for hard-limit switches when desired.

Pin	Control box option (mode 7 and 8)	Hard-limit switch option (mode 4, 5 and 6)	Connector LIMIT SWITCH
1	GND (COM/Common)	GND (COM/Common)	
2	Down (CCW) control button input (NO/normal open switch type)	CW(Up) hard-limit switch input (NC/normal closed switch type)	
3	Up (CW) control button input (NO/normal open switch type)	CCW(Down) hard-limit switch input (NC/normal closed switch type)	
4	+5VDC output (optional)	+5VDC output (optional)	
Note: All inputs are internally pulled-up to +5V, and then activated by a short (externally switch) to the GND pin.			

Duty-cycle

When the unit is continually operated for more than 30 minutes at full load, speed and high ambient temperatures, the below duty-cycle (DC) limitation will need to be considered.



The duty-cycle (DC) is the fraction of a period where the motor is active. The duty-cycle is commonly expressed as a percentage or ratio. Its described as the period it takes for a system to complete an on-and-off cycle.

Thus, a 10% duty-cycle means the system is on 10% of the time and off 90% of the time. The “on time” for a duty-cycle is normally related with a cycle length in time. E.g. a max duty-cycle of 50% (30 min. ON / 30 min. OFF), means that the motor may not be active for more than 30 minutes every hour, or after 5s ON the motor must be OFF for 5s if continually operated for more than 30 minutes.

Synchronized movements of multiple Mini Roll Downs

If several Mini Roll Downs are installed to perform synchronized movements, the best result is achieved by using a fading 16 bit position. By nature, there is a slight deviation in performance of the motors, and some motors have a slightly higher maximum speed than others.

Like when fading light, the positions of the different Mini Roll Downs should be faded, and the Mini Roll Downs will tend to follow that fade. When fading the positions:

1. The speed channel should be set to 100 % to gain the highest possible speed.
2. The position channel should be added as a 16 bit channel and not just the MSB on channel 1.
3. The speed of the fade needs to be slower than the maximum speed, so the motors have speed enough to perform the movement.

If the fade of the positions is too fast, the Mini Roll Downs will move at the maximum speed, and you will see the difference in the motor speed.

If the fade is too slow the Mini Roll Downs will move – stop – move – stop, when the position changes, thus giving a discontinuous movement.

Service and maintenance

WARNING! Read “Safety Information” on page 2 before servicing the Mini Roll Down.



WARNING! Disconnect the Mini Roll Down from AC mains power and allow cooling down for at least 10 minutes before handling.

WARNING! Refer any service operation not described in this user manual to a qualified service technician.



WARNING! Incorrect insertion of the powerCON TRUE1 may cause electrical contact misalignment resulting in equipment malfunction and/or personal injury.

ATTENTION! Interval of inspections should be determined according to the frequency of use and the working scenario of the Mini Roll Down.

ATTENTION! Signs of malfunction or poor operation should always lead to an inspection of the Mini Roll Down, and the Mini Roll Down should be taken out of operation until the error is eliminated.

Spare parts

Only parts ordered at or approved by Wahlberg should be used in the Mini Roll Down to ensure product function and stability. Contact Wahlberg to inquire about spare parts.

On-site service

On-site service and maintenance can be provided by the Wahlberg Motion Design, giving owners access to Wahlberg Motion Design’s expertise and product knowledge in a partnership that will ensure the highest level of performance throughout the product’s lifetime. Please contact Wahlberg Motion Design for details.

Maintenance plan

The results of all the regular inspections are to be documented and kept available at the company. The written result of the last inspection must be kept available at the site of operation, e.g. by an inspection sticker on the Mini Roll Down showing the date of the inspection, the basis of the inspection and the name of the inspector.

Before every use and weekly

Every time when rigging the Mini Roll Down, before running the Mini Roll Down – and at least every week when the Mini Roll Down is in use:

- Check that the fabric is winded neatly on the drum.

Monthly

At regular intervals – but at least every month when the Mini Roll Down is in use:

- Check the mounting clamp and snap hook for damages and proper fastening.
- Change damaged parts according to this manual.

Yearly

The Mini Roll Down has to be inspected by a specialist every 12 months.

Every 48 months

The Mini Roll Down should be inspected by an authorised expert every 48 months.

Checklist

Use the checklist accordingly; before each use, each month etc.

Check	Type	Result
Installed / mounted correct	Inspection	
Load and LEDs visible for the operator	Inspection	
Load mounted safely	Inspection	
powerCON TRUE1	Inspection	

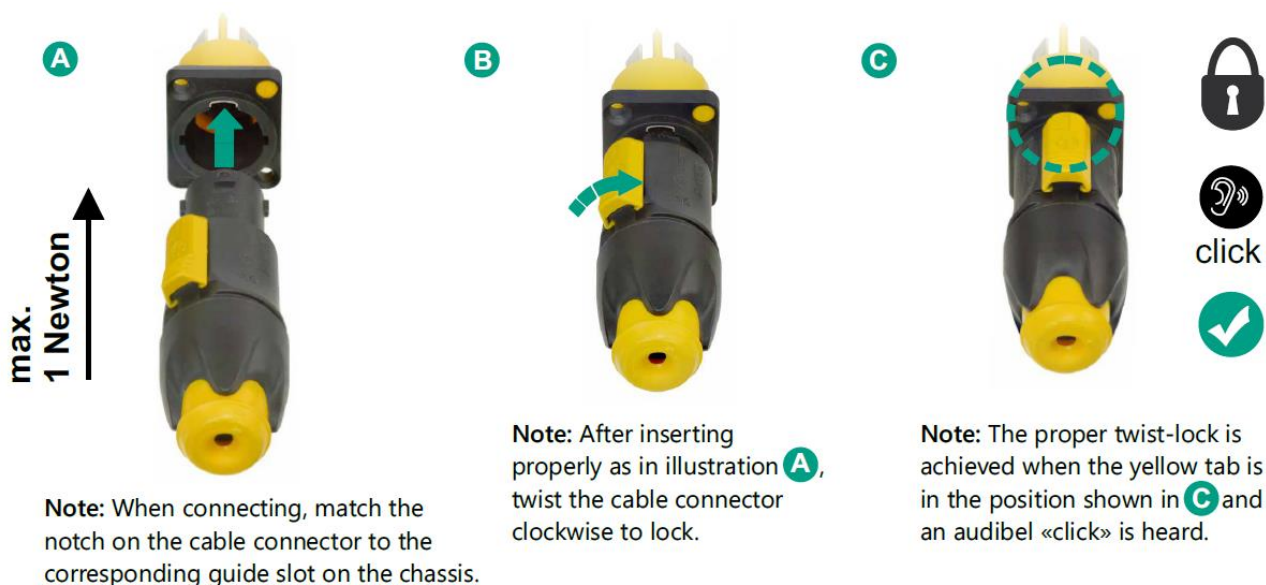
powerCON TRUE1

Regularly check the condition of the powerCON TRUE1 connector system (cable connector and chassis) for clear signs of wear and tear.

Through improper use and the excessive use of force, the encoding lugs and guide slots in the connector system can become so severely worn or damaged that it is possible to insert the cable connector the wrong way. However, when inserted the wrong way, the cable connector should not twist-lock into place.

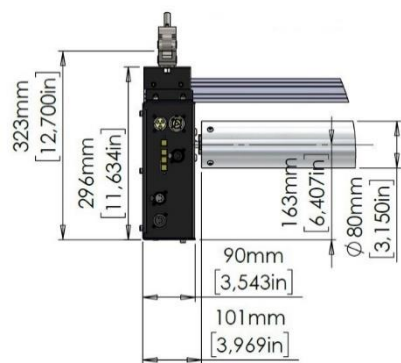
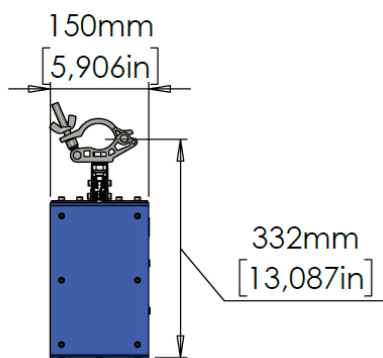
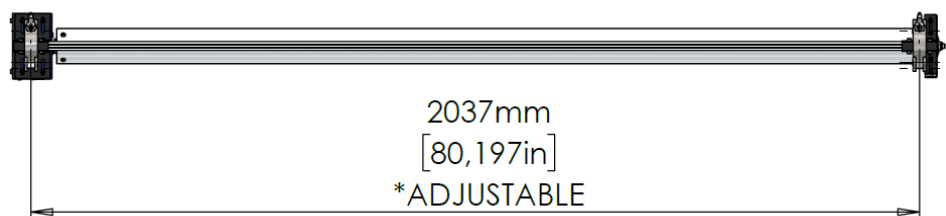
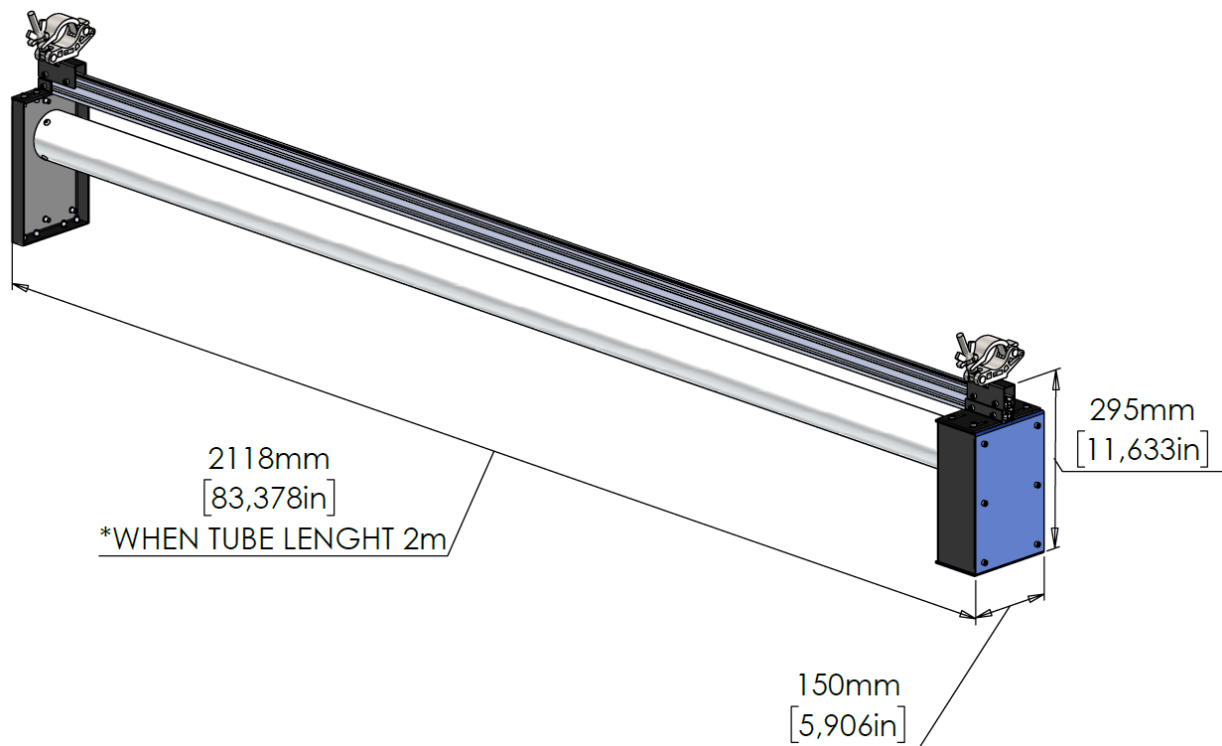
A cable connector inserted the wrong way could, in some circumstances, lead to contact between live wires and the grounding contact in the plug socket.

To determine that the cable connector is inserted correctly, follow the use instructions and listen for the “click” when performing the twist-lock. Immediately unplug any connector that does not twist-lock correctly in place.



Appendix 1 - Dimensions

Mini Roll Down



Appendix 2 – Power Connector



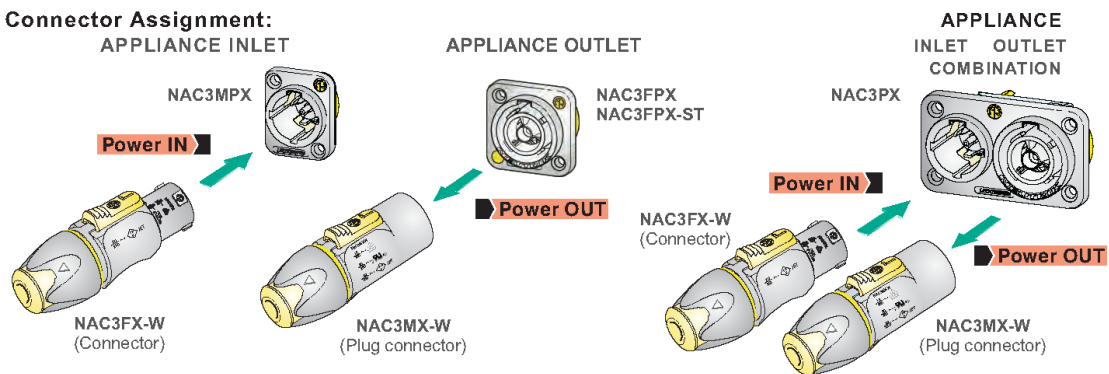
OPERATING & ASSEMBLY INSTRUCTION NAC3FX-W | powerCON TRUE1

A. OPERATING INSTRUCTION

Application:

The powerCON TRUE1 system is certified as connector with breaking capacity according IEC 60320, VDE 0625. It is intended for use as appliance couplers and interconnection couplers. It serves to supply power to an appliance and from an appliance to another equipment. To be installed by qualified person only.

Connector Assignment:



Approval based:	VDE EN 60320-1/EN60320-2-2		UL UL 498 / CSA C22.2 No. 182.3	
Rating:	250 V ac / 16 A		250 V ac / 20 A	
Cable Type:	H05VV-F3G 1.0 mm ² , Length max. 2 m H05VV-F3G 1.5 - 2.5 mm ² H07RN-F3G 1.5 mm ²		SJTOW, SJOOW 3 x 12 AWG	
Strain Relief:	White chuck		White chuck	
Cable O.D.:	6.0 - 12.0 mm		6.0 - 12.0 mm	

B. ASSEMBLY INSTRUCTION

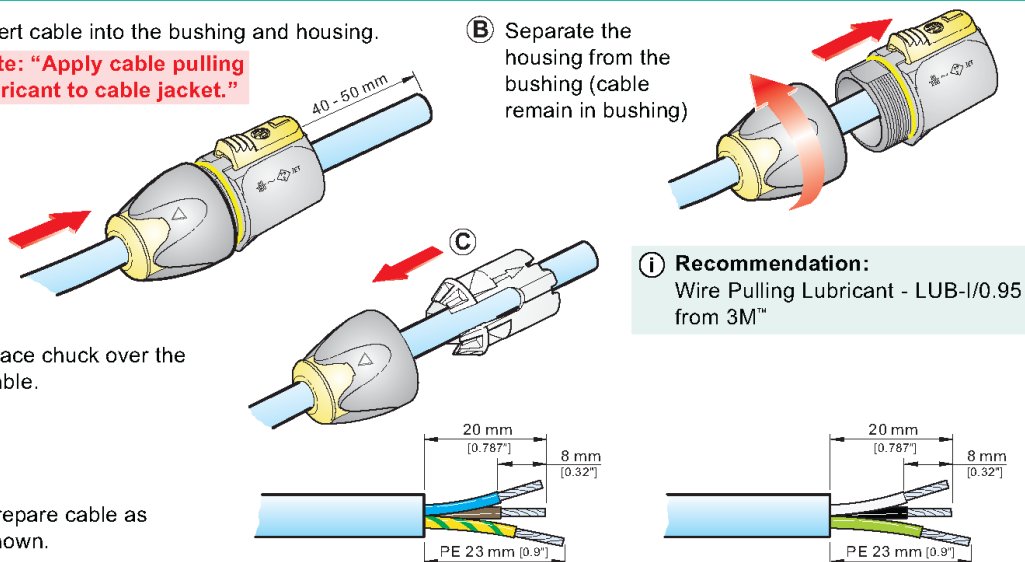
- A** Insert cable into the bushing and housing.

Note: "Apply cable pulling lubricant to cable jacket."

- B** Separate the housing from the bushing (cable remain in bushing)

- C** Place chuck over the cable.

- D** Prepare cable as shown.

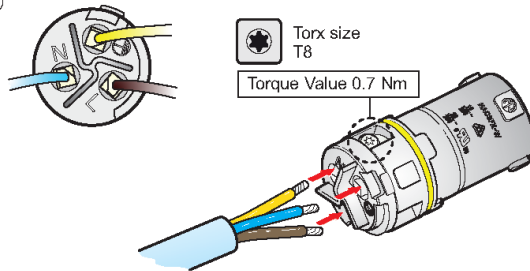


VDE (EN 60320-1/EN60320-2-2)

UL (UL 498 / CSA C22.2 No. 182.3)



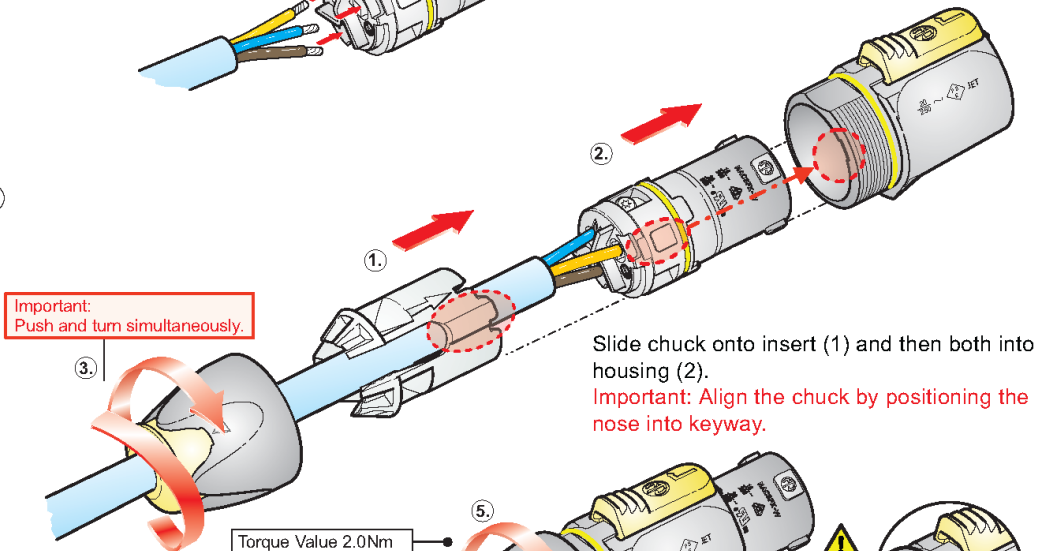
E



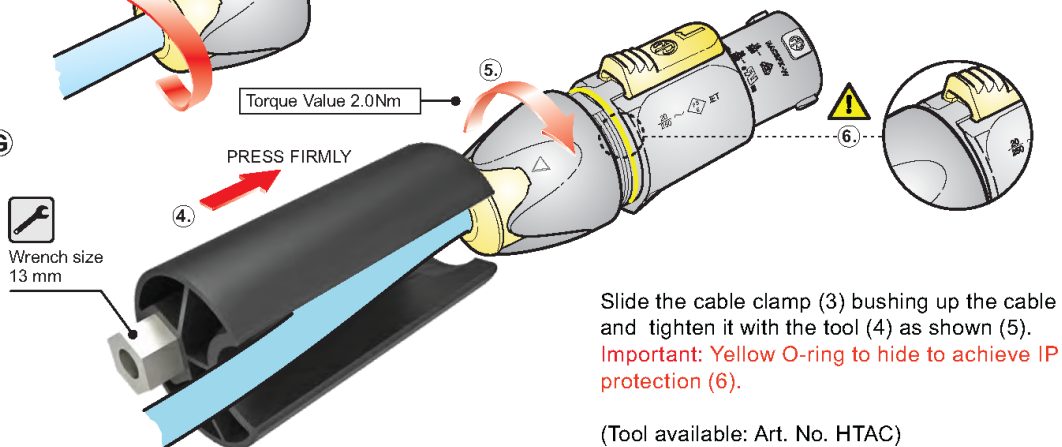
Slide the cable into the contacts and clamp with the screw with Torx size T8.

Wiring	VDE	UL
L ⇒	brown	black
N ⇒	blue	white
PE ⇒	green/yellow	green

F

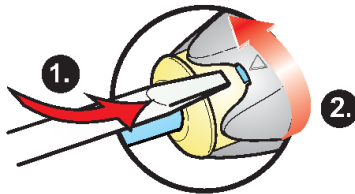


G



FOR DISASSEMBLY - OPEN TWIST LOCK!

1. Press with screw driver to unlock
2. Turn bushing 360°.
3. Repeat step 1+2 until bushing is unscrewed.



CAUTION

To ensure protection category, do not expose the connection to bending forces (e.g. do not attach loads to the cable, no free-dangling cable windings etc.).



SAFETY WARNING

For safety and certification reasons the connector must be replaced in case of any broken parts or serious damage.

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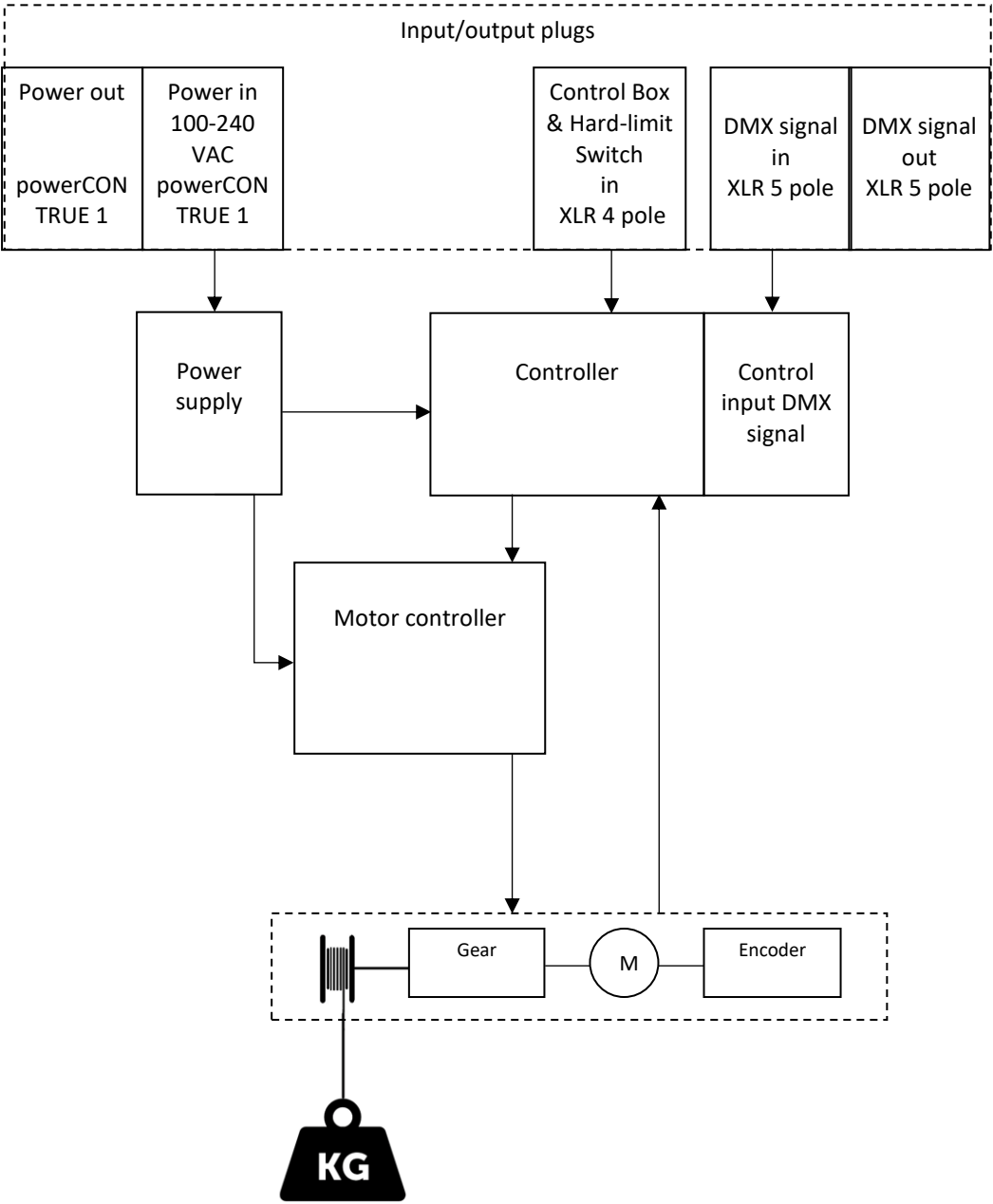
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Appendix 3 - Block Diagram



Block diagram of the Mini Roll Down control system.

Mini Roll Down – Cheat Sheet

MODE	Function
1	Positioning with slow ramp
2	Positioning with medium ramp
3	Positioning with fast ramp
4	Positioning with slow ramp hard-limits active
5	Positioning with medium ramp hard-limits active
6	Positioning with fast ramp hard-limits active
7	Set soft top and bottom limits using the control box
8	Run to top or bottom position using the control box
9	Manual up (DMX address = speed)
0	Manual down (DMX address = speed)

DMX channel	Function
1	Position rough (Hi of a 16 bit DMX channel)
2	Position fine (Lo of a 16 bit DMX channel)
3	Set the maximum speed
4	60-65% <i>Save setting</i> Enabled Else <i>Save setting</i> Disabled
5	Set soft-limit TOP position, moving up
6	Set soft-limit BOTTOM position, moving down

WARNING!

Do not use the product if any damage is found!



Before each use

- Inspect the **Mini Roll Down** for damage, wear, corrosion or abuse.
- Inspect the **fabric/curtain attachment** for damage, wear, corrosion or abuse and secure the fabric/curtain is safely attached and within maximum weight.
- Check that the **Mini Roll Down** is securely mounted according to the user manual.

How to get started

1. Put on fabric/curtain on the tube.
2. Apply DMX from a Lighting desk, ideally a desk with manual faders.
3. Make sure that your six channels are patched from DMX channel 1 to 6.
4. Pull all channels on to 0%
5. Apply power to the Mini Roll Down and set the address to 0 0 1 and the mode to 1 - **DMX lamp should be lit.**
6. Set DMX channel 4 to 63% - **This enables the saving of soft-limit top and bottom position.**
7. Pull channel 5 to 20 % -- the Mini Roll Down starts moving up.
8. **Stop the Mini Roll Down (pull channel 5 to 0%) when the desired top position is reached.**
9. Pull channel 6 to 20 % -- the Mini Roll Down starts moving down.
10. **Stop the Mini Roll Down (pull channel 6 to 0%) when the desired bottom position is reached.**
11. Pull channel 1 (position) to 75 %
12. Pull channel 3 (speed) to 50% - **The Mini Roll Down starts to move up, with 50% speed, to a position that is 75% up.**
13. Pull channel 1 (position) to 25% - **The Mini Roll Down starts to move down, with 50% speed, to a position that is 25% up.**

Green LED indicators:

LED next to the DMX-selectors.

Glows constant: DMX connection is correct.

Flashing: DMX signal is missing.

LED next to the DMX-selectors.

Fast flashing: The roll down needs to be reset, before it can be used.

Slow flashing: The roll down's is moving towards the set position

Steady light: The set position has been reached and the motor stopped.

Tech specs:

Slow Motor

Lifting speed Variable 2.5-26 cm/s
(1.0-10.2 in/s)

Maximum load 7.5 kg (16.5 lb)

Fast Motor

Lifting speed Variable 5-61 cm/s
(2.0-24.0 in/s)

Maximum load 3.0 kg (6.6 lb)

Control box and Hard-limit switch - XLR 4 pole

Pin 1 - GND (COM/switch return)

Pin 2 - Down (CCW) control NO / CW (Up) hard-limit NC

Pin 3 - Up (CW) control NO / CCW (Down) hard-limit NC

Pin 4 - +5VDC output (optional)

