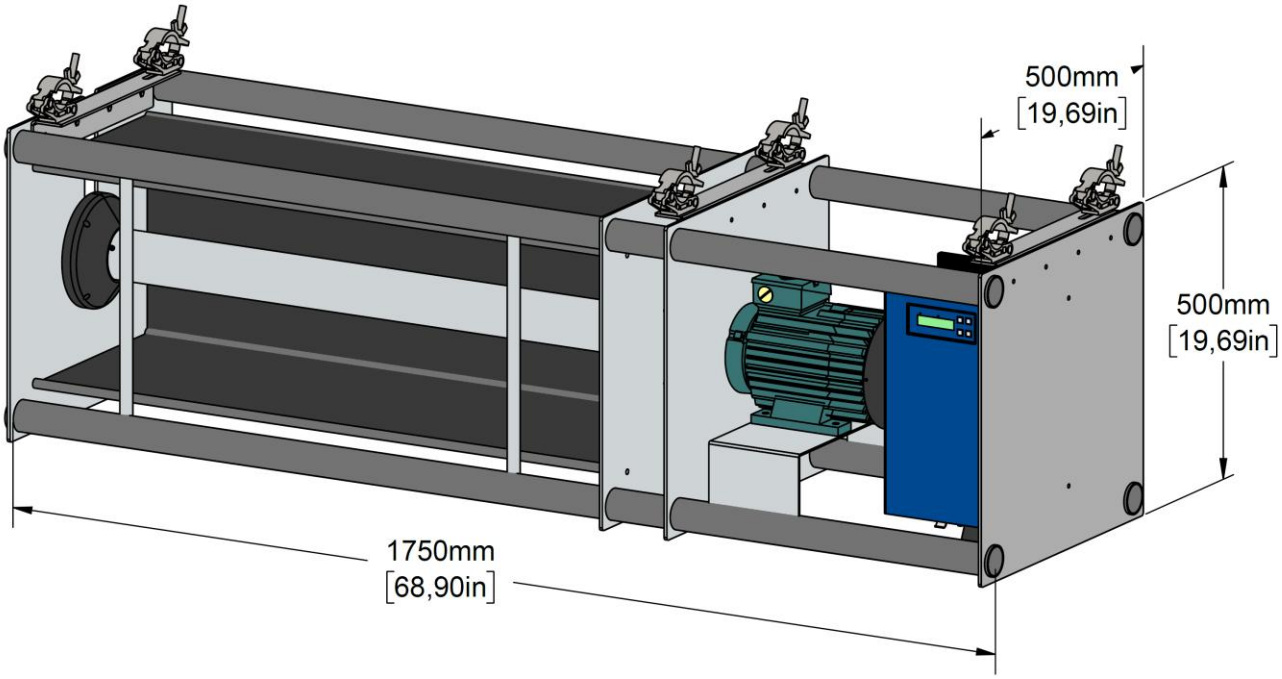
wahlberg
MOTION DESIGN

Curtain Sniffer

Item No. 293.0

User Manual



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8260 VIBY
DENMARK

Safety Information

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

The following symbols identify important safety information on the product and in this manual.


DANGER!
Safety hazard


WARNING!
Moving parts can crush and cut


DANGER!
Risk of electric shock


WARNING!
Risk of fire


WARNING!
Hot surface


WARNING!
See manual

GENERAL PRECAUTIONS

- This product is for professional use and presents risks for sever injury or death.
- Always warm-up electronic equipment to room temperature before applying power.
- Isolate the product from power immediately if defective or showing signs of overload. Do not reapply power until repairs have been completed.
- Do not modify the product in any way not described in this manual.
- Refer any service operation not described in this manual to a qualified technician.
- Install only genuine Wahlberg Motion Design parts.

PROTECTION FROM INJURY

- Fasten the product securely to a fixed surface or structure as described in this manual.
- Ensure that any supporting hardware can hold at least 10 times the weight of all the devices they support.
- Block access below the work area whenever installing or servicing the product.
- Do not use the product to lift people or animals and do not exceed the load limits.
- Do not use the product over the head of people.
- When the product is installed and may not be used for some time, inspections and maintenance according to this manual shall always be followed.

PROTECTION FROM ELECTRIC SHOCK

- Do not expose the product to rain or moisture.
- Use an AC power source with overload and ground(earth)-fault protection.
- Disconnect from AC power and wait 15 minutes before service inside the product.

PROTECTION FROM BURNS AND FIRE

- Do not operate the product if the ambient temperature (Ta) exceeds 40° C (104° F).
- The exterior of the product becomes warm during use. Allow to cool before handling

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.

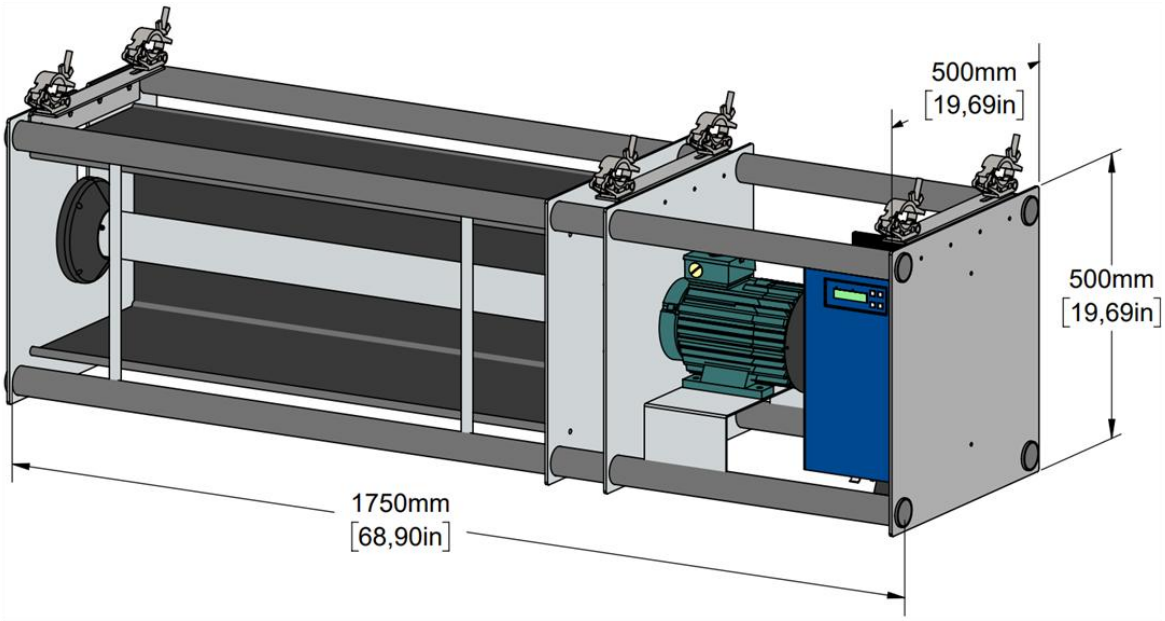
Index

Technical specifications

MODEL:	Curtain Sniffer
ITEM NO.:	293.0
DIMENSIONS (LxWxH):	1750 x 500 x 500 mm (68.9 x 19.7 x 19.7 in)
POWER SUPPLY:	3-phase 230 V / 400 V 50/60 Hz
POWER CONSUMPTION:	4500 W (6,5A)
POWER CONNECTION:	5p CEE 16A - 3P+N+PE
MOTOR:	230/400VAC, 1,5kW 1400 RPM
CONTROL MODE:	Manual / DMX with position control
DMX SIGNAL:	DMX 512 1990+DMX512A
DMX CONNECTION:	5 Pole XLR (F/M)
SAFETY CONTROL:	Hold to run Three Point Deadman switch
MAX FABRIC WEIGHT:	15 kg (33.1 lb)
MAX FABRIC SIZE	100 m^2 (1076 ft^2)
MAX SPEED:	12 m/s (39.4 ft/s)
NOISE EMISSION:	~ 70 dB
AMBIENT TEMPERATURE:	5-40 °C (41-104 °F)
WEIGHT:	70 kg (154.3 lb)
MOUNTING CLAMP:	6x Slim eye coupler 50mm (2in)

Drawings

Curtain Sniffer (293.0)



Introduction

Thank you for selecting the Curtain Sniffer, a DMX controlled fabric sniffer from Wahlberg Motion Design. Before using the product for the first time, please read this manual carefully. Failure in handling can cause injury of persons and/or damage the product.

Package content

1× Curtain Sniffer
1x 15m 3mm Kevlar Pull String
1× 5p CEE 16A - 3P+N+PE Female cable connector
1x Safety grip with dead man switch, emergency stop, manual control and mode selection
1× User manual
1× Cheat sheet

Description

The Curtain Sniffer is a high-performance fabric retractor designed to deliver dramatic reveals and seamless show starts. Whether you're unveiling a stage, product, or performance, it swiftly removes loose-hanging fabric to spotlight the main event.

Dual Control Options

Operate the Curtain Sniffer manually using the ergonomic safety handle with integrated turning knobs, or connect it to a lighting desk via DMX for synchronized show control. In both modes, it retracts fabric weighing up to 15 kg at speeds of up to 12 m/s, ensuring a fast and reliable reveal.

Built-In Safety Features

Safety is at the core of the Curtain Sniffer's design. The manual handle includes a three-point enabling switch that must be held in the centre position to activate the device, preventing accidental operation and ensuring user control at all times.

Show-Ready Integration

For productions that demand precision and synchronization, the Curtain Sniffer can be fully integrated with lighting and sound systems via DMX. This allows for perfectly timed reveals that enhance the impact of your show, presentation, or event.

DMX Channel Overview

The Curtain Sniffer supports DMX control for precise and synchronized operation:

- **Channel 1 & 2**: Set the desired curtain position.
    - *0%*: Curtain fully extended (fabric hangs loose).
    - *100%*: Curtain fully retracted (fabric wound onto the drum).
- **Channel 3**: Adjusts the retraction speed, allowing you to match the pace of your show.
- **Channel 4**: Acts as a safety lock. DMX control is only enabled when this channel is set between 50–55%, preventing unintended activation.

Safety functions

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

- Emergency stop is not pressed
- Safety grip dead man switch is enabled
- The DMX signal is reliable or the Curtain Sniffer is controlled manually
- The mode, position and speed control are set correctly.

The Curtain Sniffer should only be operated by an experienced DMX-controlled-lighting-desk-operator. The lighting desk must be programmed according to the manual, so the Curtain Sniffer will stop when the speed is put to 0 %. It is also possible for the user to stop the Curtain Sniffer by disconnecting it from the mains. After power failure the start position of the Curtain Sniffer may need to be adjusted before the Curtain Sniffer can function properly again.

Manual operation of the Curtain Sniffer is only intended for calibration, installation, service, and tests.

Area of use

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.

The Curtain Sniffer is intended for indoor use only. It is designed for lifting and lowering material at the weight and speed stated in "Technical specifications" on page 4. Any other use of the product may result in a risk of injury of persons or equipment damage.
Exceeding the load rating may cause failure of the equipment.
Failure to mount the load securely can result in a risk of injury of persons or equipment damage.
Do not modify the product. For any modification contact Wahlberg Motion Design.

It is the customer's sole responsibility to comply with any relevant local laws, regulatory requirements, and restrictions, concerning the use of the product.

Using for the first time

IMPORTANT! The Curtain Sniffer must be protected from environmental factors such as physical shocks and vibration during transportation and storage.

WARNING! Read “Safety Information” on page 1 before installing, powering, operating, or servicing the Curtain Sniffer. Before applying power to the product.

- Check the Wahlberg Motion Design website at www.wahlberg.dk for the most recent documentation and technical information about the product. Wahlberg Motion Design user manual revisions are identified by the revision number in the bottom of each page.
- Carefully review the “Safety Instructions” on page 1.
- Check that the local AC mains power source is within the power voltage and frequency ranges.
- See “Power cables and power plug” on page 9. Install the provided CEE 16A power 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 Curtain Sniffer must be protected from environmental factors such as physical shocks and vibration during transportation.

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

Physical installation

WARNING! The supporting surface must be hard and flat. Fasten the product securely.

WARNING! Use only the supplied rigging clamps.

WARNING! Make sure the hazard zone between the fabric and the Curtain Sniffer is clear when working on or with the machine.

Fastening the product to a flat surface

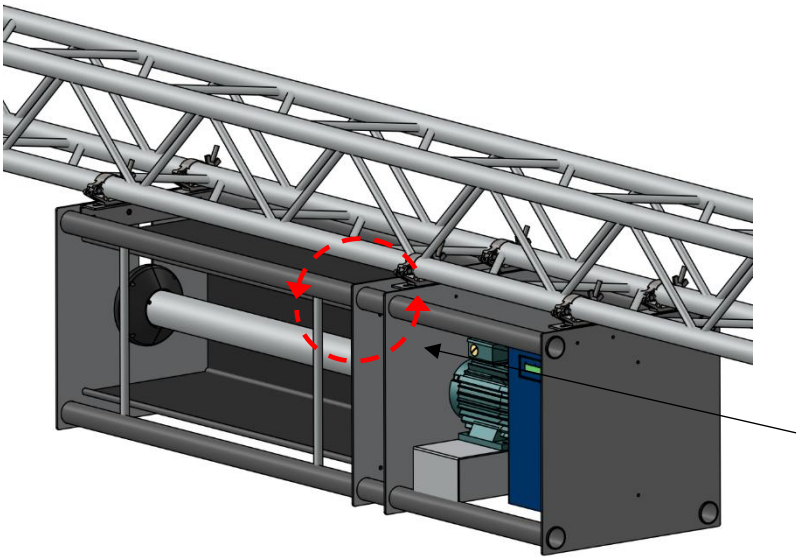
The Curtain Sniffer can be fastened to flat surface such as a roof. Check that the surface can support at least 10 times the weight of all products and equipment to be installed on it.

Mounting the product on a truss

The Curtain Sniffer can be clamped to a truss or similar rigging structure.

To clamp a product to a truss:

1. Check that the rigging clamps are undamaged and that the rigging structure can support at least 10 times the combined weight of all products and equipment to be installed on it.
2. Block access under the work area. Working from a stable platform, hang the product on the truss with the mounting clamp upwards. Tighten the rigging clamp.
3. Use the supplied slim couplers sitting on the top plate. It is important to use all slim couplers for mounting because the load is not evenly distributed across the product.
4. Install a suitable safety wires when the product is hanging over-head and verify that it complies with either EN 60598-2-17:2018 section 17.7.4 or BGV C1/DGUV 17.



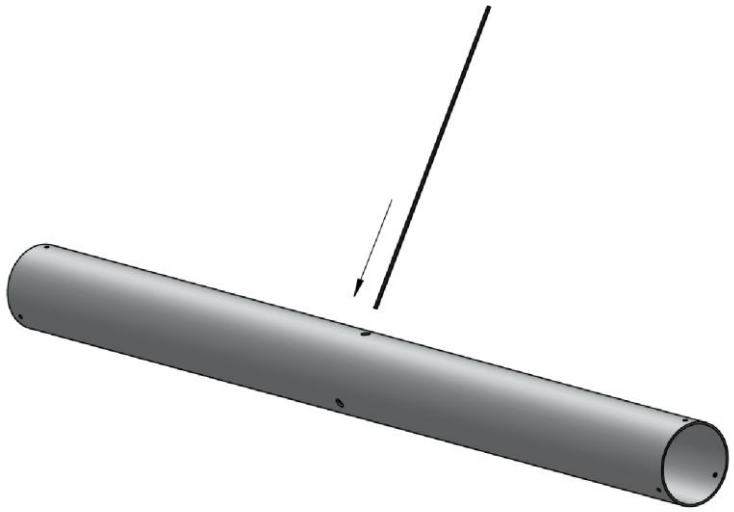
Safety Wire

Mounting the fabric

WARNING! The fabric shall be mounted to the pull string without the use of metal hardware.

Mounting pull string to drum

To mount the supplied pull string, push it through the holes at the center of the tube and tie a knot on the loose end of the string.



Mounting the fabric to the pull string

On the fabric it is up to the user to securely mount the string to the fabric. Special consideration must be made to not use heavy hardware to mount the string such as carabiners or quick links. Adding eyelets to the fabric is permitted to securely mount the fabric.

AC power

WARNING! Read “Safety Information” on page 1 before connecting the product to AC mains power.

WARNING! For protection from electric shock, the product 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 product with power must be located near the equipment and easily accessible so that the product can easily be disconnected from power.

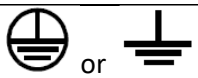
WARNING! Check that the voltage range specified on the serial number label matches the local AC mains power voltage before applying power to the product. Do not apply AC mains power to the product at any other voltage than that specified.

Power cables and power plug

The Curtain Sniffer requires a power input cable with a CEE 16A 5 Pole cable connector for mains power input (3 Phases + Neutral + Protective Earth). The cable must be rated 20A minimum, and have five conductors of 1,5mm2 (AWG 16) minimum. 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.

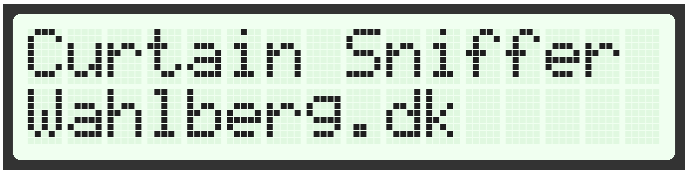
If you install a power plug on the power cable, install a grounding-type (earthed) plug that is rated 20 A for USA and 16A for Europe. Follow the plug manufacturer’s instructions. Table 1 shows standard wire color-coding schemes and some possible pin identification schemes; if pins are not clearly identified,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

Table 1 - Colour guide

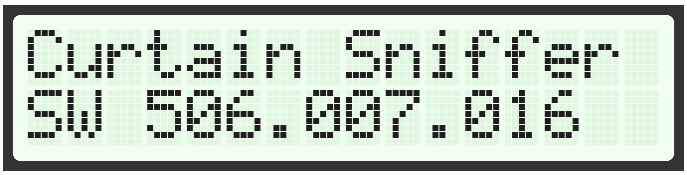
Wire Colour	Conductor	Symbol	Screw (US)
Brown, Black, Grey	Live	L1, L2, L3	Yellow or brass
Blue	Neutral	N	Silver
Yellow/green	Ground (earth)		Green

Introduction screen

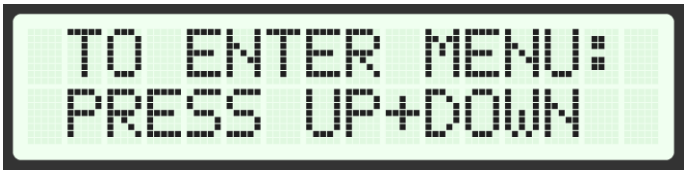
By supplying power to the Curtain Sniffer, the display will show a start-up screen sequence showing the product name



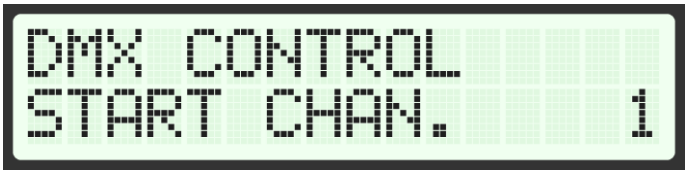
Followed by a screen showing the software version, e.g. SW 506.007.016 as shown below



Then a description of how to enter the menu



Before it is ready to be controlled by DMX channel 4 should be re-enabled. After it has been re-enabled it is ready to be operated and shows the following:



Data link

A DMX 512 data link is required in order to control the Curtain Sniffer via DMX. The Curtain Sniffer has 5-pin XLR connectors for DMX data input and output. The pin-out on all connectors is pin 1 = shield, pin 2 = (-), and pin 3 = (+).

Pins 4 and 5 in the 5-pin XLR connectors are not used in normal operation and are available for possible additional data signals as required by the DMX512-A standard. However, if desired this additional port may also be used to feedback the actual position of the Curtain Sniffer, but in such case, it is not suitable for daisy chaining.

The Curtain Sniffer is subject to the common limit of 32 devices per daisy-chained link. Note that if independent control of a Curtain Sniffer is required, it must have its own DMX channels assigned. Products that are required to behave identically can share the same DMX channels. To add more products 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 device. The termination plug, which is a male XLR plug with a 120 Ohm, 0.25W 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 Curtain Sniffer to data:

1. Connect the DMX data output from the DMX controller to the male 5-pin XLR DMX input connector (DMX 512 IN).
2. Connect the DMX output of the products to the DMX input of another product and continue connecting products output to input (DMX 512 OUT).
3. Terminate the last product on the link with a 120 Ohm resistor.

The DMX lamp is the green LED, above the display.

- Glows constantly, when the DMX connection is correct.
- Flashes if the DMX signal is missing or wrongly connected.

Emergency stop switch

WARNING! By default, the emergency stop is NOT enabled!

WARNING! Using this additional emergency stop is optional while using the emergency stop on the safety grip is mandatory.

Safety grip

The safety grip is a handheld emergency stop and deadman switch with additional mode selection, manual control and a status indicator that shows if the Curtain is armed and ready to go (On). The directions are with respect to the illustration at the bottom.

Mode selection (Key dial, top)

The mode of the Curtain Sniffer is set using the Mode Selection key dial.

- Up (clockwise): DMX mode
- Middle: Disabled
- Down (counter clockwise): Manual mode

Emergency stop

Large red button on top of the handle stops all movement. The emergency stop should not be used as a primary mean of turning the machine on or off. The button is position is maintained when pushed and is twist or pull to unlock.

Manual Control (turning dial, bottom)

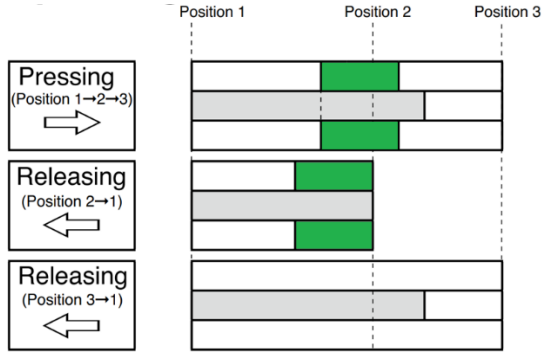
The Curtain Sniffer can be controlled manually if the mode selection key is set to manual control (counterclockwise as pictured).
The manual speed is set in the menu item “Manual Speed”

- Up (clockwise): Fabric rolls out
- Middle: Stopped
- Down (counter clockwise): Fabric rolls in

Note that it will only move if the emergency stop released and the dead man switch is pressed.

Dead man switch

The dead man switch is the large yellow bar which is a three point enabling button. This means that the machine is only enabled when the switch is in the middle position (2) and disabled when released (1) or completely pressed (3).
When it is completely pressed it will not be enabled until the button has been completely released and then pressed to the middle position again. This can be seen in the figure below.



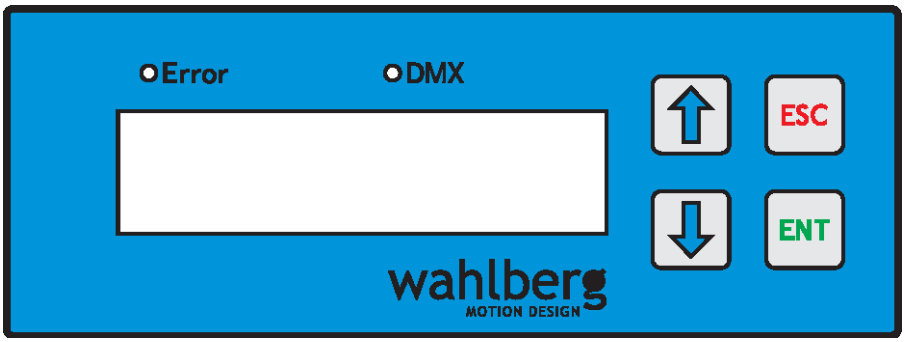
Setup

WARNING! Read “Safety Information” on page 1 before installing, powering, operating, or servicing the product.

WARNING! Only experienced DMX users should operate the product. Contact Wahlberg Motion Design for further information and education on DMX protocol.

Menu setting

Use the buttons on the display to enter and change menu settings



Use the arrows & to go up or down in the menu

Press ENT to set values.

Press ESC to go back one level in the menu

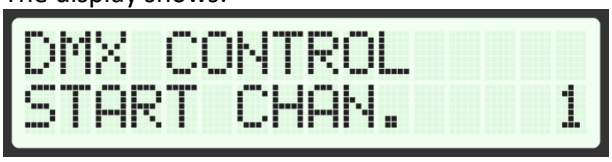
Press and hold both the up and down arrow for 1 second to enter and leave the menu navigation mode, see page 15 or continue using the control mode as explained on the next page.

Menu structure

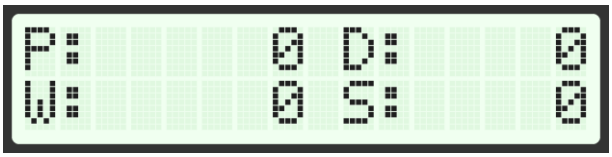
The menu structure is divided into two different areas for safer motor control.

Control mode

The display shows:

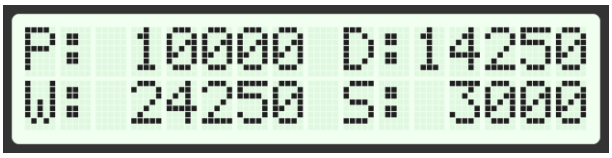


Shift to next screen by pressing and holding down: 

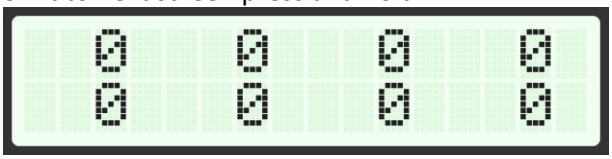


P: Current position
W: Wanted position
D: Distance from current to wanted position
S: Speed (values from 0-maximum motor RPM setting in operation)

The screen shows the tachometer value for the current position, wanted position, distance and speed in motor revolutions per minute (RPM).
E.g. the motor is moving with 3000 RPM from current position with tachometer value 10.000 and the wanted position has the tachometer value of 24.250:

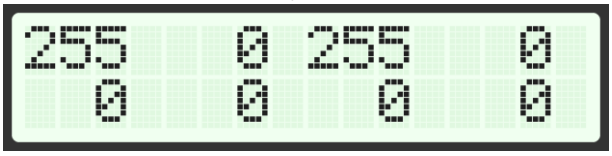


Shift to next screen press and hold. 



DMX channel 1	DMX channel 2	DMX channel 3	DMX channel 4
DMX channel 5	DMX channel 6	DMX channel 7	DMX channel 8

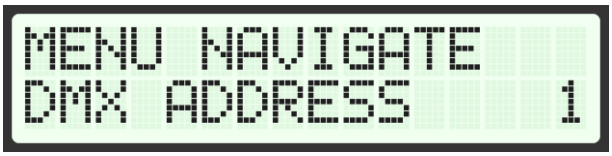
The screen shows the DMX channel values, if e.g. DMX channel 1 is set to 100% and DMX channel 3 is set to 100%, the screen will show:



To shift back to the previous press and hold. 

Menu navigation mode

The display shows:



In menu navigate mode, the different parameters can be changed.
In menu navigate mode the motor is stopped, and DMX input has no effect, the motor can be moved by the MANUAL RUN - GOING UP/GOING DOWN menu though.

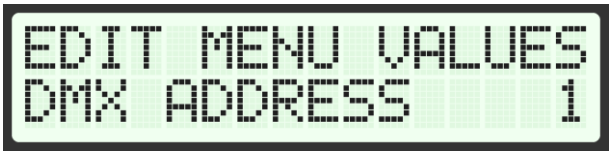
Press the arrows  or  to go up or down in the menu choices.
The bottom line of the display is showing:

Adjusting menu parameters

The display shows:

Press  to change the *DMX ADDRESS* value.

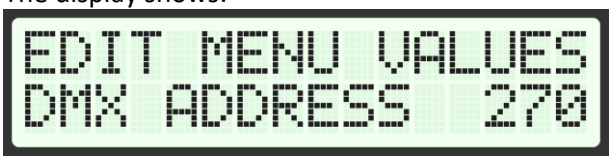
The display shows:



Use the arrows  or  to adjust the *DMX ADDRESS.*

Save changed value

The display shows:



Press ENT to change the top line to:

Where X is an increasing number from 1 to 20.

Then press and hold ENT

The top line of the display counts up to 20 then shows *OK*.

The value is now saved in the memory.

Adjustable parameters

Menu	Description	Range	Default
MAN SPEED	Speed for manual driving	10 - 1,485	30
MAN UP/DWN	Run the motor manual from the menu	MOTOR UP / MOTOR DOWN	
DMX ADDRESS	DMX start address	1-504	1
TAC RANGE	Tacho range	1-99,999	10,000
RAMP TIME	Ramping time from 0 to max speed	0.1 - 10.0	0.1
SPEED MAX	Maximum speed	500 - 3,276	3,276
SP MIN UP	Minimum speed UP	0 - 861	5
SP MIN DWN	Minimum speed DWN	0 - 861	5
E STOP	Enable/disable emergency stop	OFF/ON	OFF
ADV. MENU	Show advanced menu	OFF/ON	OFF
*SLACK DELAY	Delay from slack activation to stop	0 - 792	0
POS OUT	Position feedback	OFF/ON	OFF
UNSAFE MODE	Disable all limit switches	OFF/ON	OFF
NOM. FREQ	Power input frequency	50/60	50
REVERSE DIR	Reverse direction of up and down	OFF/ON	OFF
*QUICK SLACK	Stop quickly when slack activates	OFF/ON	OFF
PRECISION	Tolerance for settling	5 - 1000	100
SLS DIST	Kilometers moved Since Last Service	Not adjustable	
SLS TIME	Hours moving Since Last Service	Not adjustable	
SLS ON	Hours on Since Last Service	Not adjustable	
SLS RESET	Reset Since Last Service parameters	NO/YES	NO
TOT DIST	Kilometers moved in total	Not adjustable	
TOT TIME	Hours moving in total	Not adjustable	
TOT ON	Hours on in total	Not adjustable	
FACTORY RST	Reset to factory default settings	NO/YES	NO

MAN SPEED and MAN UP/DWN are used for manual control of the motor.

*These options make no difference for the Curtain Sniffer.

Detailed explanation of parameters

MAN SPEED **Speed for manual driving** **Range** **10-1,485**
MAN SPEED sets the speed for manual driving the motor

MAN UP/DWN **Manually driving the motor**
MAN UP/DWN is used for manual control of the motor.
Pressing the *UP* button, makes the curtain retract. Pressing the *DOWN* button, makes the curtain roll out, unless the limit switch or slack detection is activated.

DMX ADDRESS **DMX start address** **Range** **1-504**
DMX start address defines which DMX address the Curtain Sniffer reacts on.

TAC RANGE **Tacho range** **Range** **1-99,999**
The tacho range is setting the range of the Curtain Sniffer from the fully extended to the fully retracted.
If the same tac range is required for a range of Curtain Sniffer, use the menu to set the same tac range easily.

RAMP TIME **Ramping time** **Range** **0.1 – 10.0**
RAMP TIME is the time it takes for the Curtain Sniffer to accelerate from a standstill to its maximum speed, and decelerate from maximum speed to a standstill when positioning.

SPEED MAX **Maximum speed** **Range** **500-3,276**
SPEED MAX sets the maximum speed.
If set to 1000, the motor will run at 1000 RPM when DMX speed is set to full. SPEED MAX can be used to lower the maximum speed, if desired.

SP MIN UP **Minimum speed up** **Range** **50-1,000**
The motor minimum speed, for the up direction.
The motor can run at different minimum speeds for each direction; this is to differentiate between different mechanical loads for up and down, see SP MIN DWN.
Set this value to a speed where the motor will still run up at full load.

SP MIN DWN **Minimum speed down** **Range** **50-1,000**
The motor minimum speed, for the down direction.
The motor is allowed to run at different minimum speeds for each direction; this is to differentiate between different mechanical loads for up and down, see SP MIN UP.
Set this value to a speed where the motor will still run down at full load.

E STOP **Enable/disable emergency stop** **Range** **ON / OFF**
This enables/disables the emergency stop from the software. However, to get the full functionality of the emergency stop a wire has to be plugged in inside the Curtain Sniffer. See section on how to change the wire setting for more details.

ADV. MENU **Show advanced menu** **Range** **OFF/ON**
View the extended menu with advanced options described below. The user should be extra cautious when changing these values since some combinations may lead to dangerous movement and damage to either the unit or equipment attached.

***SLACK DELAY** **Delay from slack activation to stop** **Range** **0 – 9,999**
This makes no difference for the Curtain Sniffer.
Slack delay is a delay in pulses from when slack is activated to when the Curtain Sniffer registers it and tries to stop. It can be used if the load is around the minimum load and slack is bouncing.

POS OUT **Position feedback**

This feature enables you to know exactly where the Curtain Sniffer is. The position feedback outputs a DMX signal on pin 1,4,5 of the DMX in/out plugs. All values are zero except for the feedback which is located at the DMX address of the device. Meaning if the Curtain Sniffer has starting channel 73 then the 16bit feedback will be at channel 73 and 74. The menu options are

- OFF: No output
- SCALE: 16 bit scaled feedback. The feedback will be 0,0 at the bottom and 255,255 at the top
- DIV 4: 16 bit raw feedback divided by 4. The feedback will be 0,0 at the bottom and TAC RANGE divided by 4 at the top. For a 10 meter span this is roughly 77,104.
- 32BIT: 32 bit raw feedback. This feedback will be 0,0,0,0 at the bottom and TAC RANGE at the top. For a 10 meter span this is roughly 0,1,53,161.

UNSAFE MODE **Disable all limit switches**

CAUTION!: UNSAFE MODE should only be used in emergency situations. It disables both limit switches, slack, and emergency stop. This also makes the error LED blink.

NOM. FREQ **Power input frequency** **50/60**

Frequency of the national grid of installation.

REVERSE DIR **Reverse direction of up and down** **OFF/ON**

Reverse motor movement, encoder, and limit switch direction.

***QUICK SLACK** **Stop quickly when slack activates** **OFF/ON**

This makes no difference for the Curtain Sniffer.
Stops the Curtain Sniffer quickly if slack is enabled. If the load is light or fast accelerations are used slack may be activated by accident leading to a stuttering movement.

PRECISION **Tolerance for settling** **5 – 1000**

The tolerance in which the Curtain Sniffer will stop. To small a precision will lead to the Curtain Sniffer overshooting its wanted position and never stop. This will cause the motor to overheat and eventually get damaged.

SLS DIST **Kilometres moved Since Last Service**

Shows how many kilometres the Curtain Sniffer has travelled Since Last Service reset (SLS RESET).

SLS TIME **Hours moving Since Last Service**

Shows how many hours the Curtain Sniffer has been moving Since Last Service reset (SLS RESET).

SLS ON **Hours powered on Since Last Service**

Shows how many hours the Curtain Sniffer has been powered on Since Last Service reset (SLS RESET).

SLS RESET **Reset Since Last Service parameters** **NO/YES**

Set all SLS values to zero. Go through all service steps described in the manual and contact Wahlberg Motion Design for any spare parts.

TOT DIST **Kilometres moved in total**

Shows how many kilometres the Curtain Sniffer has travelled since production.

TOT TIME **Hours moving in total**

Shows how many hours the Curtain Sniffer has been moving since production.

TOT ON **Hours on in total**

Shows how many hours the Curtain Sniffer has been powered on since production.

FACTORY RST **Reset to factory default settings** **NO/YES**

Reset all menu values to its default settings.

DMX ADDRESS setting

The DMX address, also known as the start channel, is the first channel used to receive instructions from the controller. For independent control, each product must be assigned to its own control channels. The DMX address is configured in the menu as described in the section above.

DMX channel overview

Channel	Function	Description
1	Position rough (MSB)	These channels control the **position** of the drum, with the **speed** on channel 3. The rough position (MSB) and the fine position (LSB) is multiplied into a 16-bit channel for optimal resolution. However, using only the rough position (MSB) to control the position may be enough for some applications.
2	Position fine (LSB)	
3	Speed	This channel controls the **speed** and defines the max lifting and lowering speed of the Curtain Sniffer. This channel may also work as a **brake**; since the motor does not run in positioning mode unless the channel is set above 0%.
4	Enable motor (50-55%)	Channel 4 is used as a safety channel with the following functions. Values between **50%** and **55%** will make the product run. All other values will make the motor **stop**, reset errors and eventually save the current position before a power down. **Make sure to leave this channel at 0% before a regular power down.** Doing so will save the current position and the unit is ready to position when powered on. If it is not saved before shutdown the fully extended position (fabric hangs loose) must be set again when the unit is powered on.

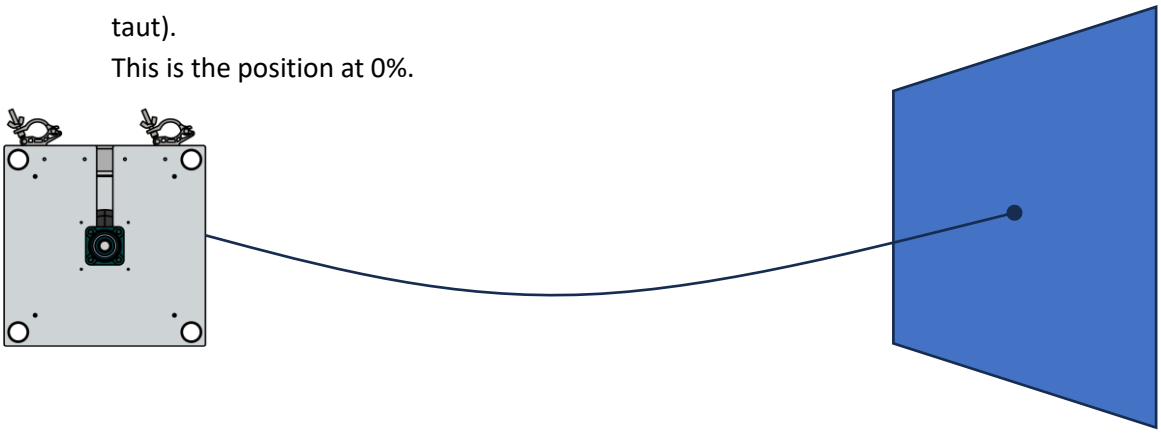
Understanding operation of the Curtain Sniffer

WARNING! Make sure the fabric may not cause injury to any obstacles in the moving range.

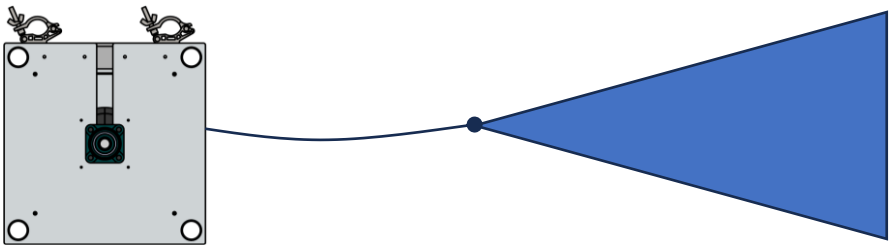
WARNING! The Safety Grip comprises of a dead man switch, emergency stop, manual control and mode selection. It should be stored safely out of reach for uninstructed personnel.

Order of operation

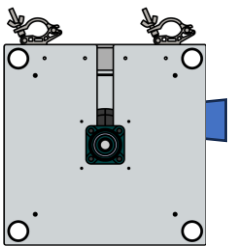
1. Mount the Curtain Sniffer securely to a stable surface or truss.
2. Connect the pull string to the fabric and drum of the Curtain Sniffer.
3. Connect mains, grip switch and DMX.
4. Set the wanted travel in the menu as TAC RANGE. 1 meter = 318 pulses
5. Set the grip switch key to manual, enable the machine by holding the dead man switch and run the drum with the manual control until the string is at its initial position (Fabric hanging loosely. String pulled taut).
   This is the position at 0%.



6. Set the grip switch key to DMX mode and verify that the DMX controller is ready but not set to move.
7. Enable the grip switch dead man switch when the hazard area is clear.
8. Set DMX Channel 4 to 53% to enable the Curtain Sniffer
9. Set DMX Channel 1 and 2 to 100% and Channel 3 to the wanted speed. The Curtain will quickly be sniffed into the Curtain Sniffer and stop automatically at the desired position.



10. When the Curtain is completely gone the dead man switch may be released and the hazard zone may be entered again.



Normal Operation

Temperatures

If the surface temperature of the Curtain Sniffer exceeds 70°C (194°F) there is a risk of damaging the Curtain Sniffer.

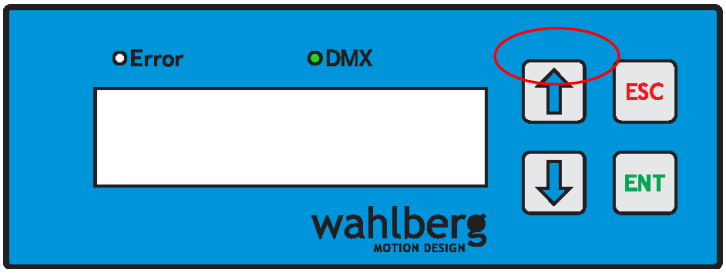
Duty cycle

The Curtain Sniffer should not be operated at a duty cycle higher than 10% for longer periods of time.
The duty cycle is the fraction of a period where the motor is active. The duty cycle is commonly expressed as a percentage or a ratio. It can be described as the period of time 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 10% duty cycle is normally connected to a cycle length in minutes. E.g. a max duty cycle of 30% (3 min ON / 27 min OFF), means that the motor may not be active more than 3 minutes every 30 minutes or after 3 minutes of ON the motor must be OFF for 27 minutes.

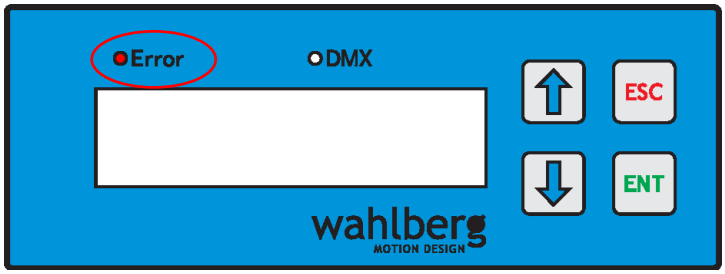
DMX LED

The DMX lamp will be steady green when receiving a DMX signal.
The DMX lamp will flash green if no DMX signal is present.



Error LED

The error LED will light red if there is an error.
Reset error is done by setting DMX channel 4 to 0%.
When the Error LED lights red, there will also be an error description in the display.



Troubleshooting:

Error		Possible solution
Curtain Sniffer will not start, display shows nothing.		Check if the Curtain Sniffer is connected to mains power.
Curtain Sniffer will not start, DMX lamp is blinking.		Check DMX signal
Display says “NO MOVEMENT DETECTED”		The Curtain Sniffer does continuously not measure any movement when trying to move. To solve this, check that the curtain has not caught onto something. If not then go into the menu and increase the Minimum speed up.
Power failure		The Curtain Sniffer will stop at power failure. When the power is re-established, the Curtain Sniffer must be reset before it is ready to use. It is advisable to set all the DMX channels on 0% before the power is re-established.

When an error occurs, the control system shuts down the connected motor and issues a corresponding error code. This can be queried and used to determine the cause of the error.

Frequency drive error codes

If an error is detected by the frequency drive the error LED with turn on and an error code will be displayed on the screen.

Code	Error message	Cause	Solution / Remedy
4	CFI:INVALID CONF	Invalid drive configuration.	Perform factory reset.
5	SLF1:MODBUS COM.	Communication fault.	*Check RS485 communication wiring.
9	OCF:OVERCURRENT	Drive overcurrent.	Reduce load on motor.
16	OHF:DRV OVERHEAT	Drive overheating.	Reduce load on motor.
17	OLF:MTR OVERLAD	Motor overloaded.	Reduce load on motor.
18	OBF:OVERBRAKING	Braking too sudden giving DC bus overvoltage.	Reduce load or increase ramp time.
20	OPF1:1 O.PH LOSS	Single motor phase lost.	*Check motor wiring.
21	PHF:INP.PHA.LOSS	Single input phase lost.	*Check input wiring.
23	SCF1:MTR SHORT	Short circuit between motor phases or motor phase to ground.	*Check motor wiring.
24	SOF:MTR OVERSPEE	Motor speed is too high.	Reduce load.
25	TNF:AUTO TUNING	Auto tuning of motor has failed.	Retry auto tuning.
32	SCF3:GROUND SHRT	Significant earth leakage on drive output.	*Check wiring of frequency drive output and motor phases.
35	BLF:BRAKE CTRL	Internal brake logic fault.	*Check motor wiring.
44	SSF:TORQUE LIM	Torque limit reached.	Reduce load.
49	PTFL:LI6 PTC PRB	Motor PTC thermometer fault.	*Check PTC wiring.
50	OTFL:PTC OVRHEAT	Motor PTC overheat.	Reduce load.
54	TJF:IGBT OVRHEAT	Drive overheat.	Reduce load.
76	DLF:LOAD FAULT	Dynamic load fault.	Check for obstructions and load deviations.
107	SAFF:SAFETY FLT	Internal safety error.	Restart device. *Check internal wiring if error persists.

Solutions marked with * should only be resolved by or with supervision from a Wahlberg Technician.

The errors highlighted in red require the Curtain Sniffer be rebooted.

Service and maintenance

WARNING! Read “Safety Information” on page 1 before servicing the Curtain Sniffer.

WARNING! Disconnect the Curtain Sniffer 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.

Attention! Interval of inspections should be determined according to the frequency of use and the working scenario of the Curtain Sniffer.

Attention! Signs of malfunction or poor operation should always lead to an inspection of the Curtain Sniffer, and the Curtain Sniffer should be taken out of operation until the error is eliminated.

Parts

Only parts ordered at or approved by Wahlberg Motion Design should be used in the Curtain Sniffer to ensure product function and stability. Contact Wahlberg Motion Design 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 Curtain Sniffer 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 Curtain Sniffer, before running the Curtain Sniffer – and at least every week when the Curtain Sniffer is in use:

- Check that the Curtain Sniffer is safely and correctly installed/mounted
- Check that the Curtain Sniffer's load and LEDs are visible from the operating station
- Check that the fabric is securely tethered to the pull string and the pull string is securely tethered to the drum of the curtain sniffer
- Check all safety devices (emergency stop, safety handle).

Monthly
At regular intervals – but at least every month when the Curtain Sniffer is in use:

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

Yearly
The Curtain Sniffer must be inspected by a specialist every 12 months.

Every 48 months
The Curtain Sniffer should be inspected by an authorised expert every 48 months.

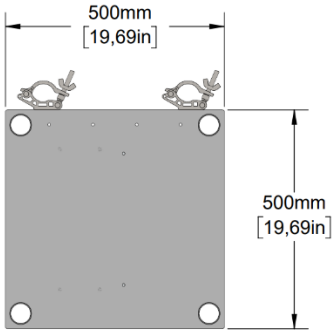
Checklist

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

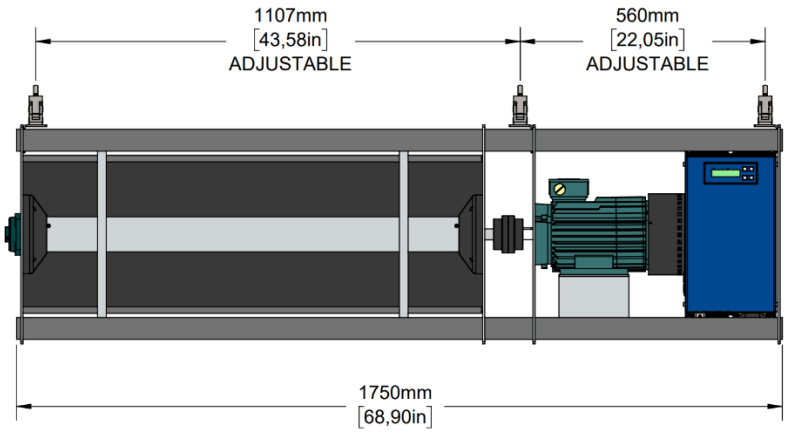
Check	Type	Result
Installed / mounted correct	Inspection	
Load and LEDs visible for the operator	Inspection	
Emergency stop	Functional test	
Enable button	Functional test	
Load mounted safely	Inspection	
Power input plug	Inspection	

Appendix 1 - Dimensions

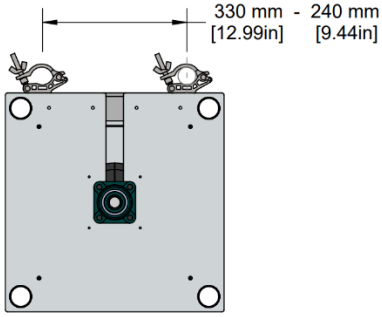
SIDE VIEW



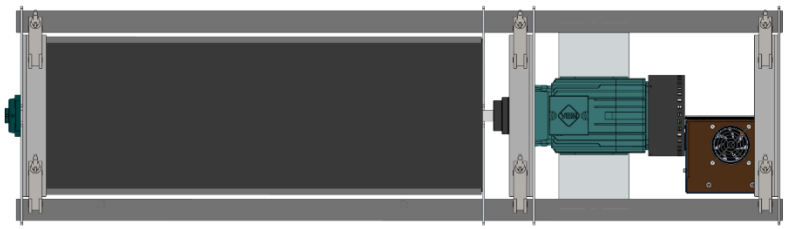
FRONT VIEW



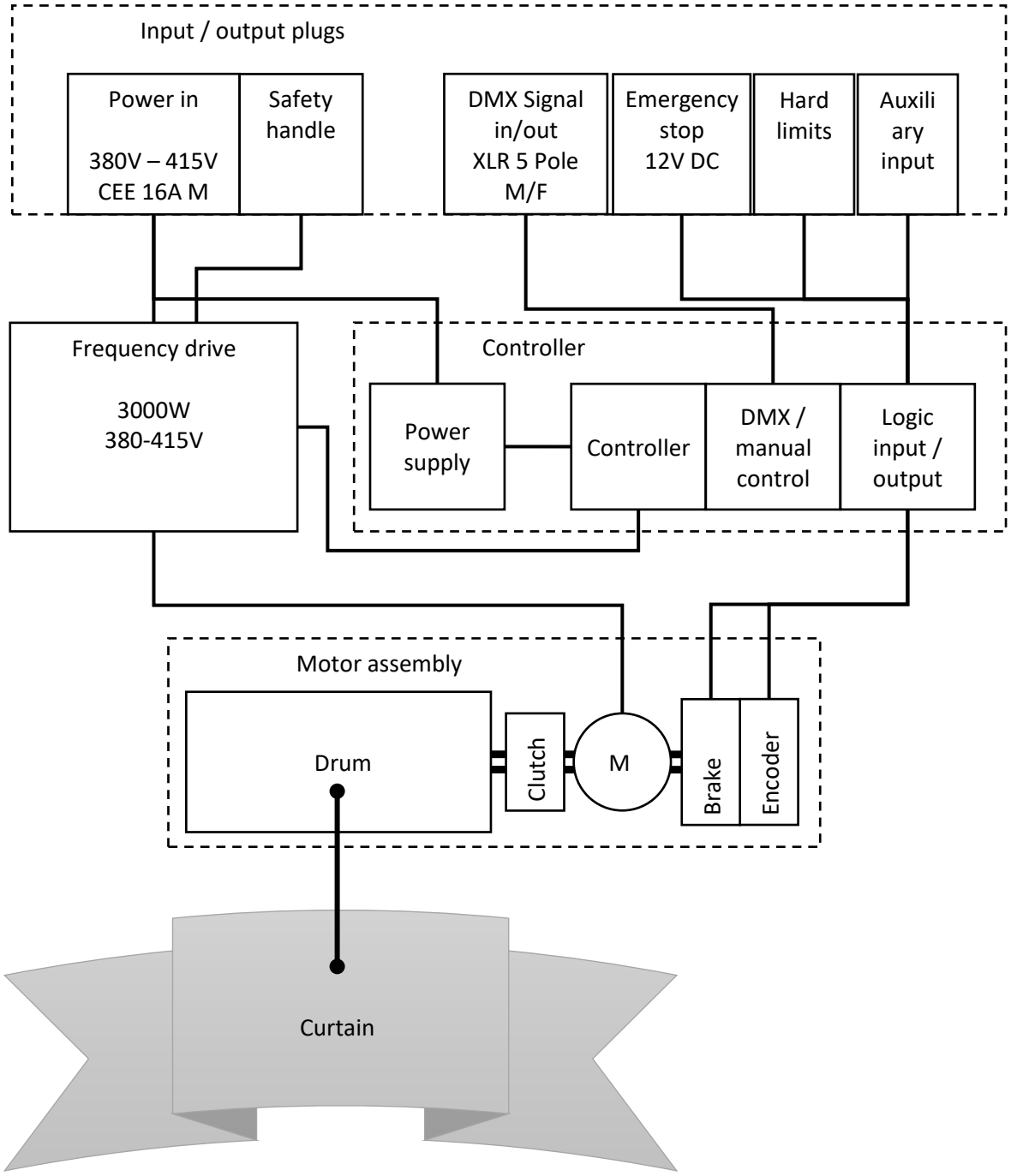
SIDE VIEW



TOP VIEW



Appendix 2 - Block schematic



Block diagram of the Curtain Sniffer

Curtain Sniffer - Cheat Sheet

DMX Channel	Function
1	Position rough (Hi/MSB of a 16-bit DMX Ch)
2	Position fine (Lo/LSB of a 16-bit DMX Ch.)
3	Set the maximum speed
4	Set between 50% and 55% to enable motor

Before each use

- Check that the Curtain Sniffer is safely and correctly installed/mounted.
- Ensure that there are no obstacles between the curtain and the Curtain Sniffer.
- Check safety functions (emergency stop and enabling button)
- Ensure the operator has full overview of all possible movements of the Curtain Sniffer
- Make sure the pull string is securely to the fabric and the drum

Warning! Do not use the Curtain Sniffer if any damage or error is found!

How to get started

1. Place or rig the Curtain Sniffer.
2. Connect the mains and safety handle make sure the error LED no longer is glowing red - **The Curtain Sniffer turns on and the display shows the start-up message.**
3. Set the DMX start address to 1 and apply DMX from a lighting desk, preferably with manual faders. Make sure that the 4 channels are patched from DMX channel 1 to 4. Pull all channels on to 0%
4. Set DMX channel 4 between 50% and 55% - The motor is now enabled and the Curtain Sniffer can run.
5. To set the distance that the pull string is pulled in, enter the menu on the Curtain Sniffer and locate the "Range" menu item. Enter 318 for each meter (e.g. 16 meters = 5088)
6. Put the safety grip in DMX mode and pull the dead man switch to its middle position.
7. Set DMX channel 1 to 100% and DMX channel 3 to 20%. - **The Curtain Sniffer moves with 20% speed to the 100% position (100% of range set in menu).**
8. Use the safety grip in manual mode to unroll the curtain.
9. Before shutting down set DMX channel 4 to 0% to save the current position.

LED indicators:

DMX LED

Glows constant:	DMX connection OK.
Flash:	DMX signal is missing.

Error LED

Off:	No errors on the product
On:	Error detected, refer to error code on display and manual

Handle LED

Off:	Curtain Sniffer is unarmed
On:	Curtain Sniffer is armed and will move when instructed

Technical specs:

Max speed:	12 m/s (39.4 ft/s)
Max fabric weight:	15 kg (33.1 lb)
Max fabric size	100 m^2 (1076 ft^2)
Power supply:	3-phase 230 V / 400 V 50/60 Hz
Signal:	DMX 512 1990+DMX512A