Techni-cal Reference

Techni-Fog
Water Based Foggers

Information specifically for:
FM-UF1.8K

Version 2

When requesting information, supplies or service, always refer to the model number of the fixture. Space is provided below to record information that may be needed in the future.

_____
Model

_____
Serial Number (located on back of fixture) Date of Purchase

_____
Dealer

_____
Street Address

_____
City State Zip

_____
Telephone Number Fax Number

_____
Contact Name

IMPORTANT INFORMATION

Returns: All returns must be sent pre-paid and accompanied by a Return Authorization Number (RMA#). No returns accepted on discontinued items. Credit for returned merchandise will be issued at the lowest of current prices and is subject to a 20% restocking fee, provided the unit is new and in saleable condition. Due care must be exercised in packing merchandise to be returned. Proper protective material and original cartons must be used to prevent damage to units. Techni-Lux is not responsible for merchandise that is damaged in transit and reserves the right to refuse any return that is damaged by the carrier.

Claims: All claims must be made within seven (7) days of receipt of merchandise. Any physical damage must be reported to carrier upon receipt of merchandise.

Warranty: New products are guaranteed free of defects in workmanship and material. All equipment originating from US, England, or Italy comes with a one (1) year warranty, parts and labor, except for shipping. This warranty does not cover installation, or damage resulting from accident, misuse or abuse, improper wiring, incorrect voltage, or any product that has been opened, altered or tampered with in any way. This warranty does not cover or apply to lamps, fuses, belts, power semiconductors, relays, cleaning or adjustments, elimination of static or other electrical interference (e.g., lightning, power spikes) that may be damaged due to installation, removal, or normal wear. Under no circumstances will Techni-Lux be liable for any expenses incurred by reason of use, misuse or sale of any product. Dealers, which choose to replace parts under warranty, cannot be reimbursed or compensated for any labor charges incurred in the process.

Limitation of Liability: Any liability for consequential and incidental damages is expressly disclaimed. Techni-Lux's liability in all events is limited to, and shall not exceed, the purchase price paid.

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Fixture Specifications

Techni-Fog 1.8k

HEATER	EFFECT OUTPUT	CONTROL INPUTS	
1800 Watts	Continuous	DMX (2 channels), 0/10v, Closure Switch, Stand-Alone Remote	
FLUID CONSUMPTION*			
Maximum (Burst): 0.09 oz/sec (2.5 cc/sec) **Average (Continuous):** 0.031oz/sec (0.91 cc/sec)			
FLUID TYPE	**POWER**	**DIMENSIONS**	**WEIGHT**
Water Based Elite Series USP Grade Double Filtered to 1 micron	15A 120V/60Hz	15.25" x 10.5" x 10.25" (39 x 27 x 26 mm)	13.5 Lbs (6.1 Kg)

*Calculated for Elite PRO formulation.

*There is no standard for defining fog output or fog density. Many factors affect the perceived density of fog including type of fluid, lighting conditions and environmental factors such as temperature, humidity and air flow.

Unpacking

Immediately upon receipt, carefully unpack and inspect the merchandise to verify that all parts are present and have been received in good condition. Notify the shipper immediately and retain packing material for inspection if any parts appear damaged from shipping or the shipping carton shows signs of mishandling. Save the carton and all packing materials. In the event that merchandise must be returned to the factory, the original carton and packing must be used. The customer will be billed for a new carton and packing if merchandise is received with out the original carton and packing.

Claims

Physical damage must be reported to the carrier upon receipt of merchandise. Damage incurred in shipping is the responsibility of the shipper. It is the customer's responsibility to notify and submit claims with the shipper in the event that merchandise is damaged due to shipping. All other claims for items such as missing parts, damage due to factors other than shipping and concealed damage, must be made within 7 (seven) days of receiving merchandise.

Returns

Returned merchandise must be sent prepaid, in the original packing and be clearly labeled with a Return Merchandise Authorization Number (RMA#). No return can be accepted with shipping charges due or without an RMA#. Call a Techni-Lux sales person and request an RMA# prior to shipping the fixture. Be prepared to provide the model number, serial number and a brief description of the nature of the return. The fixture must be returned in the factory carton and packing. The factory carton and packing material will protect the fixture during shipping if properly packed; shipping damage resulting from inadequate packaging is the customer's responsibility. The customer will be billed for a new carton and packing if a fixture is not shipped in the original packing material.

Power

To determine the power requirements for a particular fixture, see the label affixed to the back plate of the fixture or refer to the Fixture Specifications chart. A fixture's listed current rating is its average current draw under normal conditions. All fixtures must be powered directly off a switched circuit and cannot be run off a rheostat or dimmer circuit, even if the rheostat or dimmer channel is used solely for a 0% to 100% switch. Before applying power to a fixture, check that the source voltage matches the fixture's requirement. Note: Techni-Fog is a resistive load.

Use only power cords designed to carry the rated power of the fixture and are designed for use with IEC320 power receptacles. Techni-Fog 1.8k fixtures are supplied with three conductor 14 gauge cords. All fixtures must be connected to circuits with a suitable Earth Ground.

Note: When connecting multiple fixtures to a single circuit breaker, a circuit breaker by NEC 210-22(c) and 2 20-3(a), cannot carry a continuous load of more than 80% of its rated value. (15 Amp breakers have a maximum continuous load of 12 Amps and a 20 Amp breakers have maximum continuous load of 16 Amps)

Mounting

This fixture may be mounted in any position provided there is adequate room for ventilation. Do not obstruct the vents on the sides or bottom. Mount the fixture securely. When selecting mounting position, take into consideration fluid location and routine maintenance. Safety cables should always be attached to the fixture. Do not mount in a place where the fixture will be exposed to rain, high humidity, extreme temperature changes or restricted ventilation. Keep fixture a minimum of 2.5 feet (76 cm) from flammable materials. Do not point nozzle in a direction that may result in the output hitting people or objects directly. Do not mount in any place where people could be standing directly beneath the output.

Implementation Tips

If using a separate container for the fluid reservoir, locate it as close as possible at the same height as the fogger. This will reduce stress on the pump, allow for easier and faster priming and will reduce the workload on the pump maintaining maximum output. Do not locate the container any more than 3 feet vertically from the fogger or more than 8 feet horizontally from the fogger.

When piping fog output, keep several things in mind. The fog that this unit produces is similar to steam; it is hot and will rise naturally. Do not use metal piping material. The metal will act like a heat exchanger causing the fluid to condense at a rapid rate. Minimize this effect by only using plastic piping material. Be aware, some fluid always condenses and this must be accounted for with a spill tray to prevent a mess and slip hazard. When placing the unit near the piping, leave a 1" to 3" gap between the unit and the pipe to allow the fog stream to pull in air. This will reduce the amount of condensation, increase the ease of travel through the pipe and reduce the amount of "after leak," where fog continues to dribble out of the pipe after pumping. If the output of the fogger does not flow easily into the pipe, there is too much restriction. Reduce the restriction by shortening the run, minimizing the number of bends and bend angles, increasing the diameter, add a blower or compressed air. Never blow the fog into the blower, locate the blower as close to the output of the piping as practical and use a "Y" adapter to introduce the airflow into the pipe. Fans may be used to further disperse or direct the fog. Do not direct the fog output directly through the fan. Instead, place the fan so the air stream redirects the fog output.

1) Leave a 1"-3" gap between the piping and the fog unit.
2) Do not use any type of metal for the pipe (PVC is most preferable)
3) Larger the diameter piping is better (3" minimum).
4) Smooth walled pipe is better (avoid spiral flex dryer hose)
5) Shorter the run the better.
6) Use the least number of bends at the least amount of angle (avoid 90 degree elbows)
7) Always account for condensation in the pipe.
8) Never direct fog output directly through a fan or blower.

Fog Fluid

Techni-Fog uses a WATER BASED fluid. Use of oil-based fluid will damage the machine, produce a fowl odor of burning wax, create a fire/burn hazard as the machine expels hot oil and void the warranty. Use only Techni-Lux ***ELITE*** water based fog fluid.

ELITE water based fog fluid is produced in the Techni-Lux factory. Every aspect of the ingredients and blending takes place in a controlled environment ensuring the highest-level of quality is present from the beginning. Water processing equipment, USP food grade components and a two stage filtering process to one micron all ensure that the end product is pure and consistent. No scents, colors or other chemicals are added to the fluid.

For the warranty to be honored, Techni-Lux ELITE water based fluid must be used in the Techni-Fog. Keep the fluid reservoir covered and clean. If fluid appears to be discolored or contaminated with dirt, discard fluid and clean the reservoir. It is best to order the fluid in the size container that will be used so that a fresh container can be put in place when the previous one is empty. This will reduce possible contamination of the fluid. The fluid's purity is the largest factor in the service life of the Techni-Fog. Contaminants in the fluid collect in the heating chamber, reducing efficiency, causing blockage and adding extra wear on the pump. Do not thin ELITE fog fluid with any type of water. Order the type of ELITE fluid that is formulated for the effect desired.

ELITE Scents are also available to add another dimension to the Techni-Fog effect. Refer to the Accessories chart for available scents and ordering codes.

Elite Water Based Fluid Types

Type	Effect	Quantity	Ordering Code
Elite	Standard smoke and fog effects, creates medium density clouds of fog.	1 Quart Bottle 1 Gallon Bottle 2.5 Gallon Container 5 Gallon Bucket 55 Gallon Drum	FF-ELITEQ FF-ELITE1 FF-ELITE2 FF-ELITE5 FF-ELITE55
Elite Pro	High density smoke for large area use or reveal effects Performance formula for higher density, longer lasting fog.	1 Quart Bottle 1 Gallon Bottle 2.5 Gallon Container 5 Gallon Bucket 55 Gallon Drum	FF-ELITEPROQ FF-ELITEPRO1 FF-ELITEPRO2 FF-ELITEPRO5 FF-ELITEPRO55
Elite QD	Quick dissipating clouds of fog for steam or wispy effects.	5 Gallon Bucket 55 Gallon Drum	FF-ELITEQD5 FF-ELITEQD55
Elite HQD	Special formulation for a higher density quick dissipation effect.	5 Gallon Bucket 55 Gallon Drum	FF-ELITEHQD5 FF-ELITEHQD55
Elite LL	Used with a cooling device (chiller) creates a low lying, quick dissipating fog effect. Without the chiller, Elite LL creates an extra quick dissipating fog.	2.5 Gallon Container 55 Gallon Drum	FF-ELITELL2 FF-ELITELL55
Elite Water Haze	Long lasting haze effects.	1 Gallon Bottle 55 Gallon Drum	FF-ELITEHAZE1W FF-ELITEHAZE55W

Option Switch Settings

The Option Switches (OP1, OP2, OP3) are used to select special operating functions.

Option Switches	
Switch	**Function**
OP1	Output Contour
OP2	Not used (leave in the off position)
OP3	Ignore Remote

Output Contour (OP1)

The heater attempts to maintain the temperature of the heating core whenever fog is produced. When the heater cannot keep up with the pump, the microprocessor automatically reduces the pump volume to maintain a minimum temperature, ensuring that the fogger will never "thermal out." The user can select how the processor does this by use of the Output Reduction Contour option on Option Switch #1. When the option is OFF, the processor will gradually reduce the pump output in a ramp function, eliminating any sudden changes in available fog output. This is

generally desirable as it allows for frequent bursts of medium amounts of fog.

When the Option is ON, the processor will allow full output for as long as possible, reducing the pump volume to the minimum setting in a step function, only when absolutely necessary. This mode is ideal for infrequent large bursts of fog.

Ignore Remote (OP3)

There are some special cases where a user may like to disable the ability of the remote to control the fogger. The Ignore Remote switch, Option Switch #3, allows the remote to be used only as an indicator and disables all control functions.

Control Protocols

Techni-Fog fixtures are designed to utilize several protocols of control. Operation without any external inputs is achieved using the Stand Alone Remote. External control may be achieved using DMX512, 0/10v Analog or a Closure Switch Input. Several control methods can be combined to achieve desired results in a variety of applications; please review the Control Precedence and Control Acknowledgement charts carefully.

CONTROL PRECEDENCE

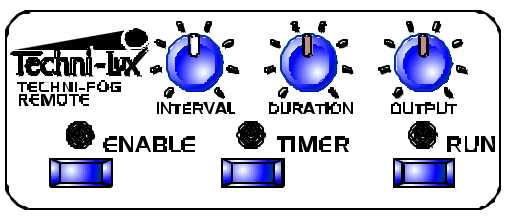
Precedence	Signal Type	Connection Method
1st (Primary)	Closure Switch then Analog 0/10V (RTS)	¼" RTS Jack (Stereo)
2nd (Secondary)	Stand Alone Remote (REMOTE)	RJ type Jack (8-pin, keyed)
3rd (Tertiary)	DMX512 (DMX)	3 Pin XLR

CONTROL ACKNOWLEDGEMENT

Acknowledgement	Start Address	Ignore Remote Option Switch (IRO)
SWITCH - Uses REMOTE VOLUME setting, if no remote is present, uses 100% ANALOG - Uses ANALOG VOLUME REMOTE - Uses REMOTE VOLUME and TRIGGERS DMX - All data is IGNORED	0 (Zero)	Set to OFF (0)
SWITCH - Uses VOLUME setting of 100% ANALOG - Uses ANALOG VOLUME REMOTE - All Settings are IGNORED DMX - All data is IGNORED	0 (Zero)	Set to ON (1)
SWITCH - Uses REMOTE VOLUME setting, if no remote is present, uses 100% ANALOG - Uses ANALOG VOLUME REMOTE - Uses VOLUME setting and TRIGGERS DMX – Uses VOLUME and TRIGGERS	1-511	Set to OFF (0)
SWITCH - Uses VOLUME setting of 100% ANALOG - Uses ANALOG VOLUME REMOTE - All Settings are IGNORED DMX - Uses VOLUME and TRIGGERS	1-511	Set to ON (1)

Remote Input

The remote controls three functions when connected and not ignored. The ENABLE button allows the fogger to engage the heater and produce fog when ready. The OUTPUT knob sets the amount of fog to produce when a trigger is received. The RUN button allows for instant delivery of fog at the OUTPUT set level. The TIMER allows for automated timed delivery of fog. INTERVAL sets the time between automatic triggers. DURATION sets the length of automatic trigger. **Note that if duration is set longer than the interval, the**

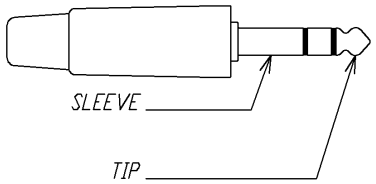


unit will produce fog continuously.

Closure Switch Input

The most basic method of controlling the output of the Techni-Fog is through a switch. The closure is made between the "Tip" and "Sleeve" (common ground) of the ¼" RTS Phone Input Jack. When the connection between the "Tip" and the "Sleeve" is open, the Pump Output is disabled. When the connection is closed, or shorted, the Pump Output is enabled. **In situations where the switch will be located more than 25 feet from the Techni-Fog unit or in an electrically noisy environment, it is preferable to use the switch in conjunction with a low voltage transformer and relay, locating the relay as near the Techni-Fog unit as feasible.**

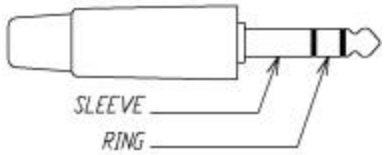
Closure Switch Function	
Value	**Function**
Open Circuit	Pump Output Disabled
Closed Circuit	Pump Output Enabled



Analog 0/10V Input

An analog voltage varying between 0V and 10Vdc can be used to control Techni-Fog. The analog voltage is applied between the "Ring" (signal positive) and "Sleeve" (common ground) of the ¼" RTS Phone Input Jack. The output of the Techni-Fog will be proportional to the input level of voltage. At or near 0 volts will be interpreted as "Pump Output Disabled." As the voltage rises the pump's output will rise proportionally to the maximum at 10 volts dc.

ANALOG VOLUME (Output)	
Value	**Function**
0 Volts	Pump Output Minimum (Pump Disabled)
⇳	
10 Volts	Pump Output Maximum



DMX Input

After a fixture finishes a reset from a power up or a change in the DIP switch settings, the fixture will begin to look for a DATA Signal. A solid red LED indicates that the fixture cannot find a valid signal, a blinking red LED indicates that the fixture is testing and validating a signal. If a valid DMX signal is found by fixture, the green LED will begin to flash and the fixture will begin responding to data.

DMX512 Channels and Values

Any controller transmitting the "USITT DMX 512/1990" standard can be used to send DMX512 data to Techni-Lux fixtures. Techni-Fog fixtures utilize two (2) channels of DMX.

DMX 512 Channel Assignment: Techni-Fog 1.8k	
DMX OFFSET	**ASSIGNMENT**
Start Address + 0	Volume (Output)= 1-100%
Start Address + 1	Run (Output Enable)= Off (0-50%), On (51-100%)

DMX512 VOLUME (Output)	
DMX Value	**Function**
0	Lowest Volume Out
⇳	
255	Maximum Volume Out

DMX512 RUN (Output Enable)	
DMX Value	**Function**
0 ⇔ 127	Pump Output Disabled
128 ⇔ 255	Pump Output Enabled

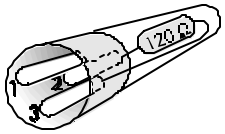
DMX512 - Data Connection

Techni-Lux fixtures are designed to receive DMX data through a serial Daisy Chain. A Daisy Chain connection is where the DATA OUT of one fixture connects to the DATA IN of the next fixture. The order in which the fixtures are connected is not important and has no effect on how a controller communicates to each fixture. Use an order that provides for the easiest and most direct cabling.

Connect fixtures using shielded two conductor twisted pair cable with three pin XLR male to female connectors. Lo-Z or balanced microphone cables generally have the proper connections. The shield connection is pin 1, pin 2 is Data Negative (S- or cold) and pin 3 is Data positive (S+ or hot). One cable of appropriate length will be needed for each fixture.

Data Terminator

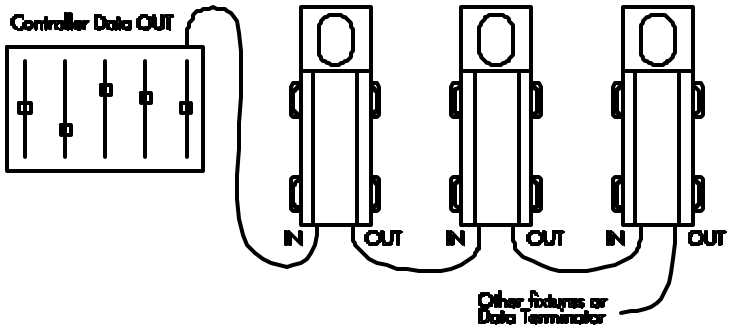
A Data Terminator can be connected to the DATA OUT connection of the last fixture if required. To make a Data Terminator, connect a 120-ohm resistor across pin 2, Data Negative (S-) and pin 3, Data positive (S+).



5 pin XLR to 3 pin XLR

Numbers designating each pin can be found on all connectors. Converting between the two XLR types is done in a pin-to-pin fashion. Connect the shields to pin 1, then connect pin 2 to pin 2 and pin 3 to pin 3. This is true for converting either way, 5 to 3 pin or 3 to 5 pin regardless of either connector's gender. Pins 4 and 5 are not used on the 5 pin XLR connectors.

Example of a Daisy Chain connection:



DMX 512 - Addressing

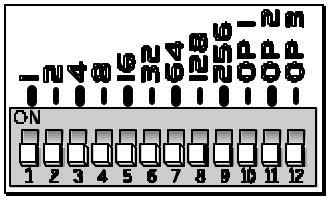
Under DMX512, there are a total of 512 channels that may be assigned in any manner the user desires. Each fixture capable of receiving DMX512 will require one or a number of sequential channels. The user must set a Start Address on the fixture that indicates the first channel reserved in the controller for that particular fixture. Different types of fixtures vary in the total number of channels required so choosing Start Addresses should be planned out well. Channels should never overlap, where some channels used by one fixture coincide with some channels by another fixture. This situation will result in erratic operation of both fixtures and must be avoided. Possibly the only exception is where multiple fixtures of the same type share the same Start Address. In this situation, the fixtures will be slaved together and all will respond exactly the same.

Each fixture requires a "start address" from 1 to 512, indicating the first DMX channel containing data for the fixture (see DMX Background for more information). A fixture requiring one or more channels for control begins to read the data on the channel indicated by the start address and however many additional channels needed. A fixture requiring five (5) channels of DMX, set to a start address of eleven (11), would read data from channels: 11 and 12, 13, 14, and 15. Before addressing fixtures, consult the manual of the controller to be used to select a desirable addressing scheme. Choose start addresses so that the channels used do not overlap and note the start address selected for future reference.

DIP Switch Values

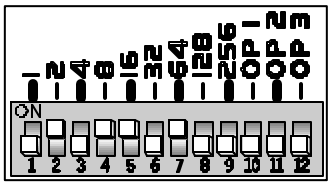
Switch	Value
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128
9	256

Set the start address using the group of DIPswitches located on the back of the fixture. Each switch # has an associated value. Adding the value of each switch in the ON position gives the start address. Determining which switches to toggle ON given a specific start address is accomplished by subtracting the largest switch value possible from the selected start address which does not cause a negative number. Continue this process until zero is reached; always subtract the largest possible value.



***Note*: When a fixture has power and the DIP Switch settings are altered, the fixture will automatically detect the new address and reset all functions to acknowledge the new DIP Switch setting.**

Example: Find the switch settings for the address of 90. Listed above each switch is its associated binary value. The first switch has a value of 1 and each following switch doubles in value. Do not confuse the switch #, located below each switch, with its value. To find the switch settings for the address of 90, start by subtracting the largest switch value possible that doesn't cause a negative result: 90 - 64 = 26 Continue by subtracting the next largest switch value possible from the remainder until zero is reached: 26 – 16 = 10, 10 – 8 = 2, 2 - 2 = 0. Set the switches corresponding to the values 64, 16, 8 and 2 to the ON position: switch # 7, switch # 5, switch # 4 and switch # 2.



Addressing multiple fixtures of the same type is accomplished by simply adding the number of channels required to the start address of the first fixture to yield the start address of the next fixture.

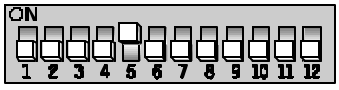
Example*: *Set up four (4) fixtures requiring five (5) channels each. *If the first fixture's start address is chosen to be **1**, the second fixture's start address would be: **1** (previous start address) + 5 (number of channels required) = **6***
*The next fixture's address would be: **6** (previous start address) + 5 (number of channels required) = **11***
*The last address is found in the same way: **11** + 5 = **16**.*
The start address for each fixture is then: 1, 6, 11, 16.

First Fixture (1):

Second Fixture (6):

Third Fixture (11):

Fourth Fixture (16):



DMX Background

DMX is a digital data transmission standard developed by the United States Institute for Theater Technology (USITT). It is designed to enable control of lighting equipment, originally dimmers. DMX deals solely with the formatting of data for transmission and does not dictate how the data is created or used.

Under DMX, signals are transmitted in much the same way a computer modem transmits data. The Data, divided in to channels, is "Framed" using a start bit, high (1), eight data bits and finally, two stop bits, both high (1). DMX uses no parity to check the integrity of the signal. Instead, DMX relies on the ultra low probability of an error occurring in the same place when the data is resent. The rate at which data is sent is fixed at 250k bps, almost four and a half times faster that a 56k modem. This speed allows all data on a DMX chain to be updated more than 44 times every second.

The data transmitted follows a specific format. DMX allows for 512 channels each with eight data bits, giving each channel the possibility of 256 values. When a data "Packet" is sent, all channels are transmitted one after another. Even if the data on a specific channel has not been changed, it must be sent. In a packet, a "start code" of all zeros is sent before the data to identify the signal as a Standard DMX transmission. This start code is transparent to the user and is handled by the controller.

The physical signals are transmitted using a twisted pair of wires and a common shield (balanced output). The controller and all receiving equipment are connected using "Daisy Chain" connections. The signal is jumped from the controller to a piece of DMX equipment. From there, the signal is jumped to the next piece of equipment and so on until the last piece of equipment is connected. There are no branches allowed and the signal does not come back to the controller. The final piece of equipment will have only one cable connection. As a result, all equipment connected to a DMX Daisy Chain will see exactly the same signal whether it is first or last in the chain. When connecting equipment, no particular attention needs to be paid to the order in which the equipment is connected to the daisy chain. Depending on the conditions and equipment, a line terminator may be required. If there is any question, in most circumstances the addition of a terminator will not degrade the signal. To make a terminator, add a 120-ohm resistor between the Signal Data Negative and Signal Data Positive pins of a connector

The DMX Standard calls for connections between DMX compatible equipment to be made using 5 pin XLR connectors. However, it is becoming more common to see fixtures with a three pin XLR connector, as these types of cables are common in the audio industry. In either case, pin numbers are the same and carry the same signals.

Pin 1 - Signal Common (Shield)
Pin 2 - Signal Data Negative
Pin 3 - Signal Data Positive
Pin 4 - (not used)
Pin 5 - (not used)

Core, Heater and Pump Life

Many factors can affect the actual number of hours the core, heater and pump will operate correctly. These include cycle-time, frequency of usage, pump rates, operating temperature, contaminants in the fluid and others. Some factors are more controllable than others and all have varying degrees of impact. The most important is keeping the contaminants in the fluid to a minimum. The fixture comes with a filter to remove larger contaminates, and must be used at all times. Routinely check the fluid reservoir and keep contamination as low as possible to prevent the core from failing prematurely. The filter on the hose end may need to be back flushed ore replaced from time to time to remove contaminants that build up and restrict the flow of fluid.

Keeping the fixture in a clean dry environment will also prevent possible problems with the heater and electronics. Do not place the fixture in a closed box or where fog is forced back through the fixture as the fog can condensate on the surfaces inside.

Contaminants in the fluid also play a role in pump life. Never operate the fogger with out a good filter stone on the intake tube. The pump is designed to self-prime but must not run with out fluid for any length of time. The amount of time the pump runs without fluid should be kept as low as possible and not allowed to run for more than a minute without a period of rest.

Maintenance

Fixtures should be cleaned regularly to maintain optimum performance. Weekly operating hours and environmental conditions will dictate how often the fixtures must be cleaned. As a general rule, fixtures should be cleaned at least once a month. Accumulation of dust and fog residue increases heat build up, causes malfunctions and overheating. This in turn causes undue stress on electronics, mechanical elements and reduces fixture life. Before performing any maintenance check and be certain that the fixture is unplugged from power.

1) Unplug fixture from power.
2) Use a vacuum or air compressor and a soft brush to remove dust collected on external vents. If using an air compressor, use a low-pressure setting and take care.
3) Clean all elements when the fixture is cold with a mild solution of glass cleaner or Isopropyl Alcohol and a soft lint free cotton cloth. Dirt and other contaminants in the fluid can cause damage and premature aging of the heater core and pump.
4) In the event that the tank becomes contaminated with dirt, discard remaining fluid and rinse reservoir with clean water and back flush the filter element. Refill with fresh fogging fluid.
5) Inspect the fluid intake hose for signs of aging or leaking.
6) Inspect filter stone and check for restriction. If it is restricted, replace the filter stone.

Trouble Shooting Chart

Symptom	Possible Cause / Solution
Fixture has no power	Check for power on mains
	Check main fuse
Power mains and fuse is good but still will not power up.	Remote not plugged in
Fixture does not heat up	Enable button not engaged
	Remote not plugged in
	No DMX data available
	Fixture out of fluid, flashing one red three green
Fixture heats up but will not pump	Fixture is not above minimum temperature yet
	Check remote, ignore remote options switch, DMX data
Fixture powers up but green LED does not flash with DMX	Check that fixture is connected to controller
	Check for bad cable
Fixture is receiving DMX, green LED is flashing but fixture is not responding	Check Start Address. Check that second control channel is above 50%
Fixture acts erratic	Check for overlapping addresses
	Switch closure line is picking up interference, use a transformer and relay set up
	Check for improperly wired cables
Output is low	Check Volume knob setting / DMX channel value
	Heater core is at a low temperature, allow to heat up.
	Filter is becoming clogged, back flush filter
Fixture won't engage pump	Fixture detected no fluid and shut down.
	Pump over heated, allow to cool.
	Check remote, ignore remote options switch, DMX data
Fixture won't function and the LED's flash: 1 Red, 3 Green	Out of fog fluid
	Filter stone is blocked, replace filter.

Replacement / Accessory Parts

Order Code	Description
FM-UF1.8KR	Analog Remote with Timer Function
FM-UF1.8KRCAB	Cable for remote
FM-UF1.8KCAP1	Adapter cap for 1 gallon and 5 gallon containers
FM-UF1.8KCAP2	Adapter cap for 2.5 gallon containers
YHFI0007	Filter for intake tube
YHTU0050	Intake tube (specify length)
YEPO0002	IEC Power Cable
YHPL0108	Gallon Adapter Basket
YHKN0051	Thumb Knobs for Remote and Adapter Basket
FM-UF1.8KRC	Weather Resistant Remote Cover Plate
SAFETYCABLE1	Safety Cable Silver 30”
SAFETYCABLE2	Safety Cable Black 30”
SAFETYCABLE3	Safety Cable Black 18”
YECO0006	¼” Stereo Phone Jack
CO-XLR3M	XLR 3 Pin Male
CO-XLR3F	XLR 3 Pin Female
CO-XLR20	Premade 20’ XLR Cable
CO-XLR3TERM	XLR 3 Pin Data Terminator
CO-XLR3MTO5F	XLR 3 Pin Male to 5 Pin Female Adapter
CO-XLR5MTO3F	XLR 5 Pin Male to 3 Pin Female Adapter
SE-WINDFAN/1	High Volume Long Throw Variable Speed Fan 120V 60Hz
Elite Scents	
SCENT-E	Elite Scent Euro for water based fluid, 1 ounce bottle scents 4 gallons
SCENT-P	Elite Scent Pina Colada for water based fluid, 1 ounce bottle scents 4 gallons
SCENT-S	Elite Scent Strawberry for water based fluid, 1 ounce bottle scents 4 gallons
SCENT-T	Elite Scent Tropical for water based fluid, 1 ounce bottle scents 4 gallons
SCENT-V	Elite Scent Vanilla for water based fluid, 1 ounce bottle scents 4 gallons

Quick Reference Address Chart

ADDRESS SWITCH SETTINGS SWITCH # (SWITCH VALUE) 0 = SWITCH OFF (DOWN) 1 = SWITCH ON (UP)																				
					9 (256)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
					8 (128)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
					7 (64)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
					6 (32)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
1 (1)	2 (2)	3 (4)	4 (8)	5 (16)	⇧																
0	0	0	0	0		N/A	32	64	96	128	160	192	224	256	288	320	352	384	416	448	480
1	0	0	0	0		1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481
0	1	0	0	0		2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482
1	1	0	0	0		3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483
0	0	1	0	0		4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484
1	0	1	0	0		5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485
0	1	1	0	0		6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486
1	1	1	0	0		7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487
0	0	0	1	0		8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488
1	0	0	1	0		9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489
0	1	0	1	0		10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490
1	1	0	1	0		11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491
0	0	1	1	0		12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492
1	0	1	1	0		13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493
0	1	1	1	0		14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494
1	1	1	1	0		15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495
0	0	0	0	1		16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496
1	0	0	0	1		17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497
0	1	0	0	1		18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498
1	1	0	0	1		19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499
0	0	1	0	1		20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500
1	0	1	0	1		21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501
0	1	1	0	1		22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502
1	1	1	0	1		23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503
0	0	0	1	1		24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504
1	0	0	1	1		25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505
0	1	0	1	1		26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506
1	1	0	1	1		27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507
0	0	1	1	1		28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508
1	0	1	1	1		29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509
0	1	1	1	1		30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510
1	1	1	1	1		31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511

Select the address value then read the switch settings for switch numbers 1-5 from the left and settings for switch numbers 6-9 from the top. A zero (0) indicates a switch in the OFF position and a one (1) indicates a switch in the ON position. This chart can also be used in reverse to find the address value for a particular switch setting.

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