

## Digital Mixers

# PRO SERIES

## PRO2-CC-IP

Live Digital Console Control Centre with  
64 Input Channels, 8 MIDAS Microphone  
Preamplifiers, 27 Mix Buses and  
96 kHz Sample Rate



- ⊗ Live performance digital console control centre with up to 64 simultaneous input channels
- ⊗ 8 award-winning MIDAS microphone preamplifiers
- ⊗ 27 time-aligned and phase-coherent mix buses
- ⊗ AES50 networking allows up to 156 inputs and 164 outputs @ 96 kHz sample rate
- ⊗ Advanced MCA (mix control association) channel control and navigation
- ⊗ 8 VCA (variable control association) and 6 POPulation groups
- ⊗ Up to 28 assignable 1/3 octave KLARK TEKNIK DN370 graphic equalisers
- ⊗ Up to 6 multi-channel digital signal processing effects engines
- ⊗ 28 MIDAS PRO motorised 100 mm faders
- ⊗ Daylight viewable 15" full colour TFT display screen
- ⊗ Fully interpolated touch sensitive controls
- ⊗ Optional wireless remote control with MIDAS MIXTENDER App for iPad\*
- ⊗ Dual redundant auto-ranging universal switch-mode power supplies
- ⊗ 3-Year Warranty Program\*
- ⊗ Designed and engineered in England

The ground breaking PRO2 features 64 simultaneous input channels with 8 award-winning MIDAS Microphone Preamplifiers and 27 time-aligned and phase-coherent mix buses. Like all PRO Series consoles, the PRO2 features managed latency and 40 bit floating point processing precision. Designed for use in high-profile live sound applications, the PRO2 sets a new standard of performance and portability in a compact digital console form factor.



AES50 audio networking technology allows the PRO2 to dynamically assign up to 156 inputs and 164 outputs at 96 kHz sample rate to any of its input channels and bus outputs on a scene-by-scene basis. This high level of connectivity, coupled with the large channel and bus counts, makes the PRO2 equally at home in theatres and clubs as it is in live concert touring, outside broadcast and music festivals.

\*iPad is a trademark of Apple Inc. All third-party trademarks are the property of their respective owners. Their use neither constitutes a claim of the trademark nor affiliation of the trademark owners with MUSIC Group. Product names are mentioned solely as a reference for compatibility, effects and/or components. Warranty details can be found at music-group.com.

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## Award-Winning MIDAS Microphone Preamplifier

The **MIDAS** microphone preamplifier is considered by leading live sound and recording engineers to be the very essence of the famous **MIDAS** sound. More than 40 years of design experience paired with the finest choice of premium-grade components lead to the acclaimed warmth and depth - bringing out subtle ambience, maintaining spatial positioning and more effectively capturing a precise sound image. The acclaimed sound of the award-winning **MIDAS** microphone preamplifier has inspired generations of live sound engineers to their best work, creating sonic panoramas that have captivated audiences worldwide.

Since pristine sound always begins with the microphone preamplifier, the first point where the signal enters the console, PRO2 features the latest generation of **MIDAS** microphone preamplifiers, which faithfully reproduce every sonic detail so no part of a performance will ever be missed. Transparent and pristine sound, low noise and high common-mode rejection are all hallmarks of this classic design.

Over the years many mix engineers have found this robust and overload-tolerant design takes on a whole new dimension of sound when driven hard, the crystal-clear audiophile reproduction giving way to just the right combination of harmonics, a warm and organic sound heard by millions of concert goers and recorded for posterity on countless live albums over the years.

## Digital Audio Networking

SuperMAC (AES50-Compliant) digital audio networking technology from **KLARK TEKNIK** simultaneously provides high channel counts, ultra low and deterministic latencies, sample-synchronous and phase-aligned networked clock distribution, error detection and correction, network redundancy, and ease of deployment and use – to meet the demanding requirements of live concert touring.

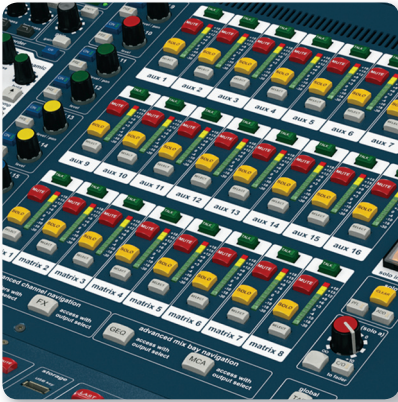
PRO2 is compatible with all **MIDAS PRO Series** digital I/O units, as well as with any other 96 kHz-enabled AES50-equipped devices. Multiple **PRO Series** consoles can be connected together to create either larger mixing systems, or multiple discrete mixing consoles can share a common resource of networked and distributed I/O interfaces.



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### Advanced Navigation Flexibility

PRO2 incorporates new and innovative methods of channel and mix bay navigation: FLIP Navigation, FX Navigation, GEQ Navigation, and MCA Navigation. These four options allow an engineer to easily and efficiently mix a large number of inputs on a compact control surface. PRO2 also features the ability to display and control any output bus on the input control bay area. This navigation flexibility makes working with the console as simple as requirements dictate, or as deep and complex as a user desires. PRO2's new output section, which features 24 direct bus selection switches that provide immediate access to up to 24 stereo pairs of output mix buses, also supports the new navigation modes.

- When in FLIP navigation mode, and the FLIP button is engaged, selecting an output flips the input faders to become the input channel send levels to the selected output. If the Collapsed Flip (Hide Unassigned Channels) preference is ticked, then the console will only populate with the input channels that are assigned to the selected output, otherwise all channels will be displayed.
- When the FX navigation button is engaged, selecting an output which is patched to an internal effects processor, this mode will deploy that effects processor on the display screen and map the ASSIGNABLE CONTROLS to the effects processor. If FADER FLIP is also engaged, the input channel faders will become the contributions to the effects processor. If COLLAPSED FLIP (Hide Unassigned Channels) preference is selected, the operator will only be presented with input channels that are sending to that effects processor.
- When the GEQ navigation button is engaged, selecting an output which has a graphic equaliser (GEQ) assigned, this mode will present the GEQ on the VCA faders. Scrolling the VCA faders left and right will provide access to all 31 GEQ faders. If FADER FLIP is also engaged, the input channel faders will become the contributions to the selected mix. If COLLAPSED FLIP (Hide Unassigned Channels) preference is selected, the operator will only be presented with input channels which are sending to that mix.
- If the MCA navigation button is engaged, when an output (mix) is selected, the MCA faders for that output will be deployed on the VCA fader bank. When MCA navigation is engaged, the MCA faders control the contributions of their members only to the currently selected bus. This is a unique and powerful mixing tool, which puts MIDAS in a class of its own for innovation and usability.

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### Integrated Effects Processors and Graphic Equalisers

The PRO2 can simultaneously provide up to 6 multi-channel digital signal processing engines for a wide choice of virtual effect devices, which range from dual-mono delay units, stereo modulation and numerous diverse reverberation simulations, multi-band compression, dynamic EQ and multi-channel dual-function dynamics processing. Up to 28  $\frac{1}{3}$  octave **KLARK TEKNIK DN370** Graphic Equalisers (GEQs) are provided, which can be patched into any output.

PRO2 provides comprehensive automatic latency management of all internal routing and processing latency – and also includes compensation for external analogue inserts. All audio samples are synchronised before summing, resulting in absolute phase coherence at the outputs, without the comb filtering effects of many of its Competitor's products that often result in specific frequencies being cancelled out completely.

All effects processors and GEQs are custom-designed to function within this automatic latency compensation system. This ensures a phase-coherent, sample-accurate mix regardless of whether the devices are used as channel inserts or on auxiliary buses.

### MIDAS PRO Fader

Not satisfied with the existing motorised fader choices in the marketplace, **MIDAS** created the **PRO FADER**, rated for up to a million cycles – three times that of other leading manufacturers - and providing high linearity, robustness, and smooth feel during operation. This decision yielded many other benefits, including total quality control over the manufacturing process and lower costs that could be passed on to customers.

As a digital console manufacturer, **MIDAS** has a perspective on the actual application of motor faders that a component manufacturer would not have. The multi-disciplinary development project combined mechanical design, electronic hardware and software optimisation with a rigorous testing programme and an investment in material science to produce the best possible performance in actual operation in **MIDAS PRO Series** consoles. Semi-precious metals are used for the wiper fingers for their hard-wearing properties, and precision resistive tracks were created that offer highly linear positional accuracy, coupled with long-term durability and even response in use.





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### Highest Quality Display Screen

The PRO2 features a 15" full colour daylight-viewable TFT display for use in all environments, both inside and outdoors. The display provides visual feedback for the entire system, pressing the HOME key (just to the left of the assignable controls) instantly navigates to the console overview page, which keeps all vital information (all metering, all fader positions, mutes and solos) in view at all times.

### Digital Precision, Analogue Response

The oversampled digital signal processing algorithms, combined with the fully interpolated and touch sensitive user controls, result in the smooth continuous response and immediacy of working on an analogue console. Parameter adjustment becomes fast and easy and the continuous phase shift of a swept frequency control is heard without the quantisation artefacts exhibited by competing digital consoles.



### Wireless Remote Control

Delivering unprecedented control and mobility, the MIXTENDER App for iPad\* combines control of key functions with the highly responsive system metering, allowing users to take control of PRO2 from an iPad anywhere in a venue. Support for multiple simultaneous iPads allows FOH and monitor engineers to work collaboratively, enhancing productivity and communication, as well as saving valuable time during set-up.

The MIXTENDER App for iPad is available as a free download from the Apple App Store.

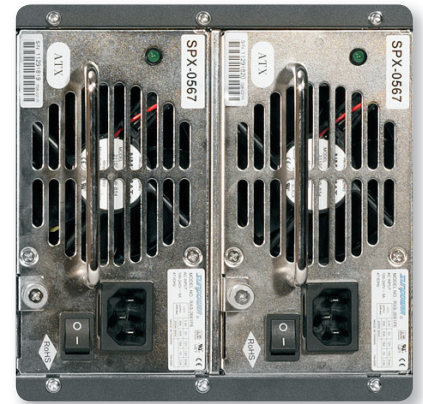
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## Auto-Ranging Universal Switch-Mode Power Supplies

PRO2 features dual-redundant power supplies, which are interchangeable with those in PRO1 and PRO2C, and are auto-voltage sensing for use on a worldwide basis and provide seamless switchover in the unlikely event of a loss of one power supply.



## You Are Covered

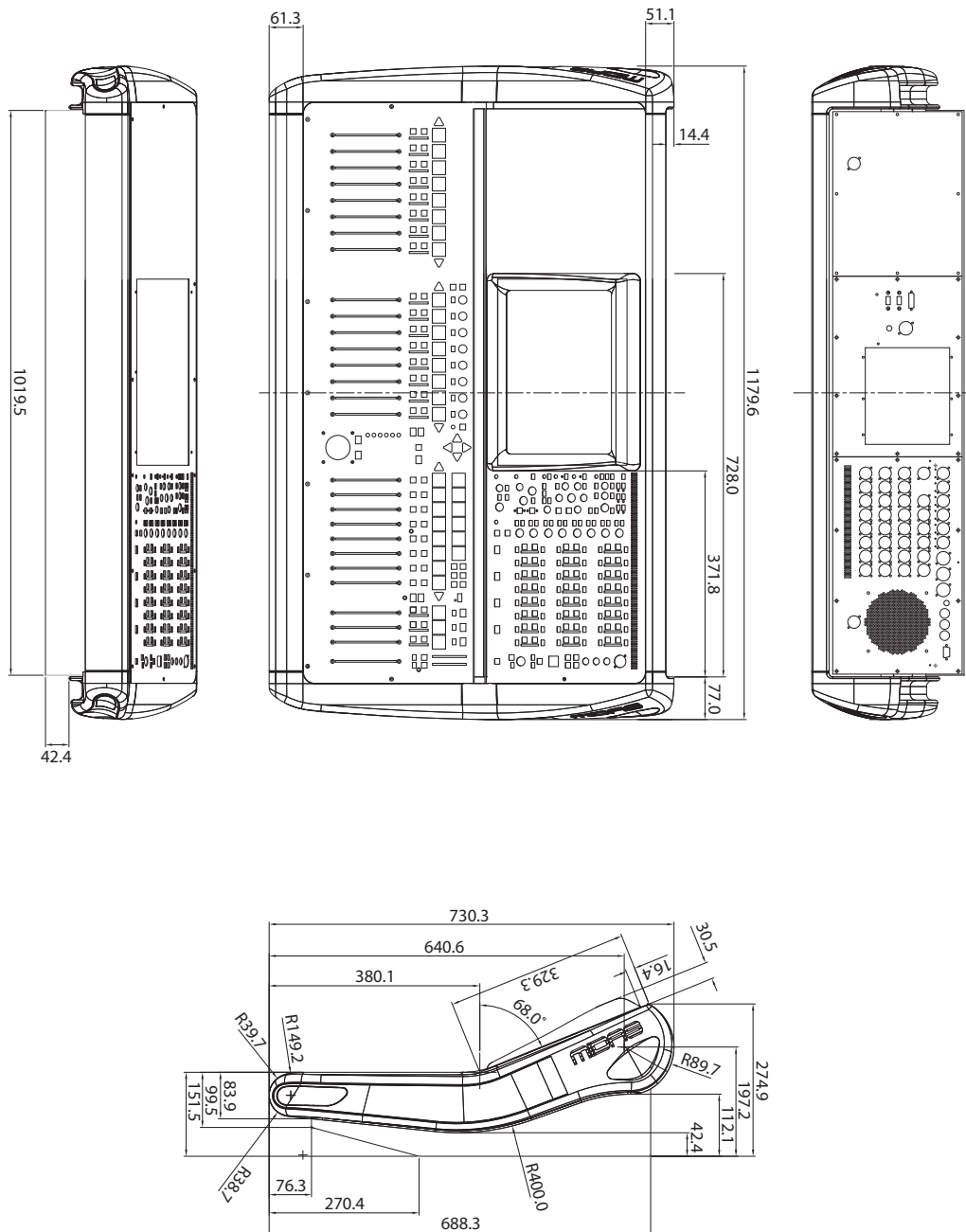
We always strive to provide the best possible Customer Experience. Our products are made in our own MUSIC Group factory using state-of-the-art automation, enhanced production workflows and quality assurance labs with the most sophisticated test equipment available in the world. As a result, we have one of the lowest product failure rates in the industry, and we confidently back it up with a generous 3-Year Warranty program.

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## Dimensions



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### Technical Specifications

#### System Specifications

Sampling rate	96 kHz
Latency delay	<2 ms (Input to Master output with no latency compensation)
Dynamic range	106 dB, 22 Hz to 22 kHz
Maximum voltage gain	80 dB, Inputs to Subgroups and Masters 86 dB, Inputs to Aux and Matrix
Crosstalk	-100 dB physically adjacent input channels
Fader/pan cut off	-100 dB
Frequency Response	0 dB to -1.0 dB, 20 Hz to 20 kHz
Gain Error @ 1kHz	±1.0 dB

#### Input CMRR

0 dB gain	-60 dB
+45 dB gain	-90 dB

#### Distortion @ 0 dBu

0 dB gain	0.01%
+45 dB gain	0.03%

#### Distortion @ +20 dBu

0 dB gain	0.03%
+45 dB gain	0.03%

#### Noise Floor

0 dB gain	-85 dBu, 22 Hz to 22 kHz (unweighted)
+45 dB gain	-81 dBu, 22 Hz to 22 kHz (unweighted)

#### Equivalent Input Noise (EIN)

0 dB gain	-85 dBu, 22 Hz to 22 kHz (unweighted)
+45 dB gain	-126 dBu, 22 Hz to 22 kHz (unweighted)

#### Dynamic Range

0 dB gain	106 dB, 22 Hz to 22 kHz (unweighted)
+45 dB gain	102 dB, 22 Hz to 22 kHz (unweighted)

#### Analogue Audio System Inputs

<b>Mic/Line Inputs</b>	
Quantity	8
Connector	3-pin XLR balanced mic/line input with +48 V phantom power
A/D converter	24 bit, 96 kHz with 128 x oversampling
Gain	-22.5 dB to +65 dB
Maximum input level	+24 dBu
Input impedance	10 kOhm

<b>Talk Mic Input</b>	
Quantity	1
Connector	3-pin XLR balanced mic input with +48 V phantom power
Mic gain	+15 dB to +60 dB
Maximum input level	+6 dBu
Input impedance	600 Ohm

<b>Talk Back Input</b>	
Quantity	1
Connector	3-pin XLR balanced line input
Maximum input level	+21 dBu
Input impedance	10 kOhm



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### Analogue Audio System Outputs

#### Line Outputs

Quantity	8
Connector	3-pin XLR balanced line output
D/A converter	24 bit, 96 kHz with 128 x oversampling
Maximum signal level	+21 dBu

#### Master Outputs

Quantity	3
Connector	3-pin XLR balanced line output
Maximum signal level	+21 dBu

#### Monitor Outputs

Quantity	4
Connector	3-pin XLR balanced line output
Maximum signal level	+21 dBu

#### Talk Output

Quantity	1
Connector	3-pin XLR balanced line output
Maximum signal level	+21 dBu

#### Headphone Output

Quantity	2
Connector	¼" jack (stereo)
Maximum signal level	+21 dBu

### Digital Audio System Inputs and Outputs

#### AES3 Inputs

Quantity	2
Format	Conforms to AES3-2009 (2 channels of digital audio)
Connector	3-pin XLR
Sample rate	32 kHz to 96 kHz
Bypass	Sample rate converter bypass

#### AES3 Outputs

Quantity	2
Format	Conforms to AES3-2009 (2 channels of digital audio)
Connector	3-pin XLR
Sample rate	48 kHz, 96 kHz or auto-tracking to inputs
Bypass	Sample rate converter bypass
Word length	16, 20 or 24 bit

#### AES50 Audio

Quantity	6
Format	Conforms to AES50-2011 (24 channels of bidirectional digital audio @ 96 kHz)
Connector	Neutrik etherCON with status LEDs
Redundancy	N+1 cable redundancy

#### Ethernet Control Data

Quantity	1
Connector	Neutrik etherCON with status LEDs

#### Word Clock Input

Quantity	1
Format	TTL level, 96 kHz square wave
Connector	75 Ohm BNC

#### Word Clock Output

Quantity	1
Format	TTL level, 96 kHz square wave
Connector	75 Ohm BNC

#### Video Sync Input

Quantity	1
Format	Horizontal video sync (black burst), HD & SD formats
Connector	75 Ohm BNC

#### AES3 Sync Input

Quantity	1
Format	Conforms to AES3-2009 (2 channels of digital audio @ 96kHz)
Connector	3-pin XLR

#### AES3 Sync Output

Quantity	1
Format	Conforms to AES3-2009 (2 channels of digital audio @ 96kHz)
Connector	3-pin XLR
Output	96 kHz Grade II reference clock

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### Other Interfaces

#### Screen Output

Quantity	1
Connector	DVI-C

#### USB Interface

Quantity	2
Format	USB 2.0 full speed (12.0 Mbit/s), 5 V 1 A maximum load
Connector	USB Type A

#### MIDI Interface

Quantity	3
Format	MIDI IN, MIDI OUT, MIDI THRU
Connector	5-pin DIN

#### Footswitch Input

Quantity	1
Format	Contact closure
Connector	¼" TS jack

#### Lamps

Quantity	2
Format	5 V, 12 W supply
Connector	4-pin XLR

#### Displays

Quantity	1
Type	15" daylight-viewable colour TFT LCD screen

### Power

#### Power Supplies

Quantity	2
Format	PRO1/PRO2/PRO2C Series Power Supply Module (MKT-PSU-7)
Connector	IEC mains inlet
Mains Input Voltage	100 to 240 VAC, 50 to 60 Hz
Redundancy	N+1 power supply redundancy

#### Power Consumption

110 VAC	1 PSU	1.6 A, 170 W
	2 PSUs	1.7 A, 185 W
230 VAC	1 PSU	0.8 A, 165 W
	2 PSUs	0.9 A, 180 W

### Physical

#### Dimensions

1179.6 mm wide x 730.3 mm deep x  
274.9 mm high (46.4" x 28.8" x 10.8")

#### Net weight

46.0 kg (101.2 lbs)

#### Operating temperature range

+5°C to +40°C

#### Storage temperature range

-20°C to +60°C

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### Architecture & Engineering Specifications

The control centre shall be designed for digital audio mixing applications and be optimised for use in live performance. It shall feature 64 simultaneous input channels with 8 integrated microphone preamplifier inputs and 27 time-aligned and phase-coherent output mix buses and operate at 96 kHz sampling rate.

The control centre shall support 100 Mbit/s Ethernet frame-based digital audio networking with a total network channel count capability of 156 inputs and 164 outputs at 96 kHz sampling rate.

The 100 Megabit Ethernet frame-based digital audio network shall offer N+1 cable redundancy and be compliant with the Audio Engineering Society AES50-2011 standard.

The control centre shall provide a combination of up to 28 assignable digital audio emulations of industry standard one-third octave proportional-Q response graphic equalisers and 6 multi-channel digital signal processing effects engines. There shall be automatic latency management of all internal routing, external analogue insert and digital signal processing delays. This latency management system shall synchronise audio samples when summing to mix buses to ensure phase alignment of the summed signals.

The control centre shall provide a user navigation system including 8 variable control association (VCA) groups and 6 population (POP) groups.

The control centre shall have 28 motorised 100 mm faders with a rated life time of up to one million cycles and one daylight-viewable 15" full colour display screen. It shall include software interpolation of physical control elements and associated display feedback to eliminate digital quantisation artefacts.

The control centre shall have the provision for the optional wireless control using an Apple iPad, with a bespoke software application available as a free download from the Apple App Store.

The control centre shall include two auto-ranging universal switch-mode power supplies with dual redundancy for use on a worldwide basis. The power supply modules shall be externally removable.

The control centre shall be 1180 mm wide x 730 mm deep x 288 mm high (46.4"x 28.8" x 11.3"), with nominal weight 46 kg (101.2 lbs). The control centre shall be installed on a flat horizontal surface capable of safely supporting its weight. Input, output, and power connections shall be made at the rear panel of the control centre. Installers shall allow adequate space at the rear for connection and disconnection of input, output, and power connections. The power requirements shall be 100 to 240 VAC, 50 to 60 Hz.

The control centre shall be the MIDAS PRO2-CC-IP and no other alternative shall be acceptable.

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For service, support or more information contact the MIDAS location nearest you:

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