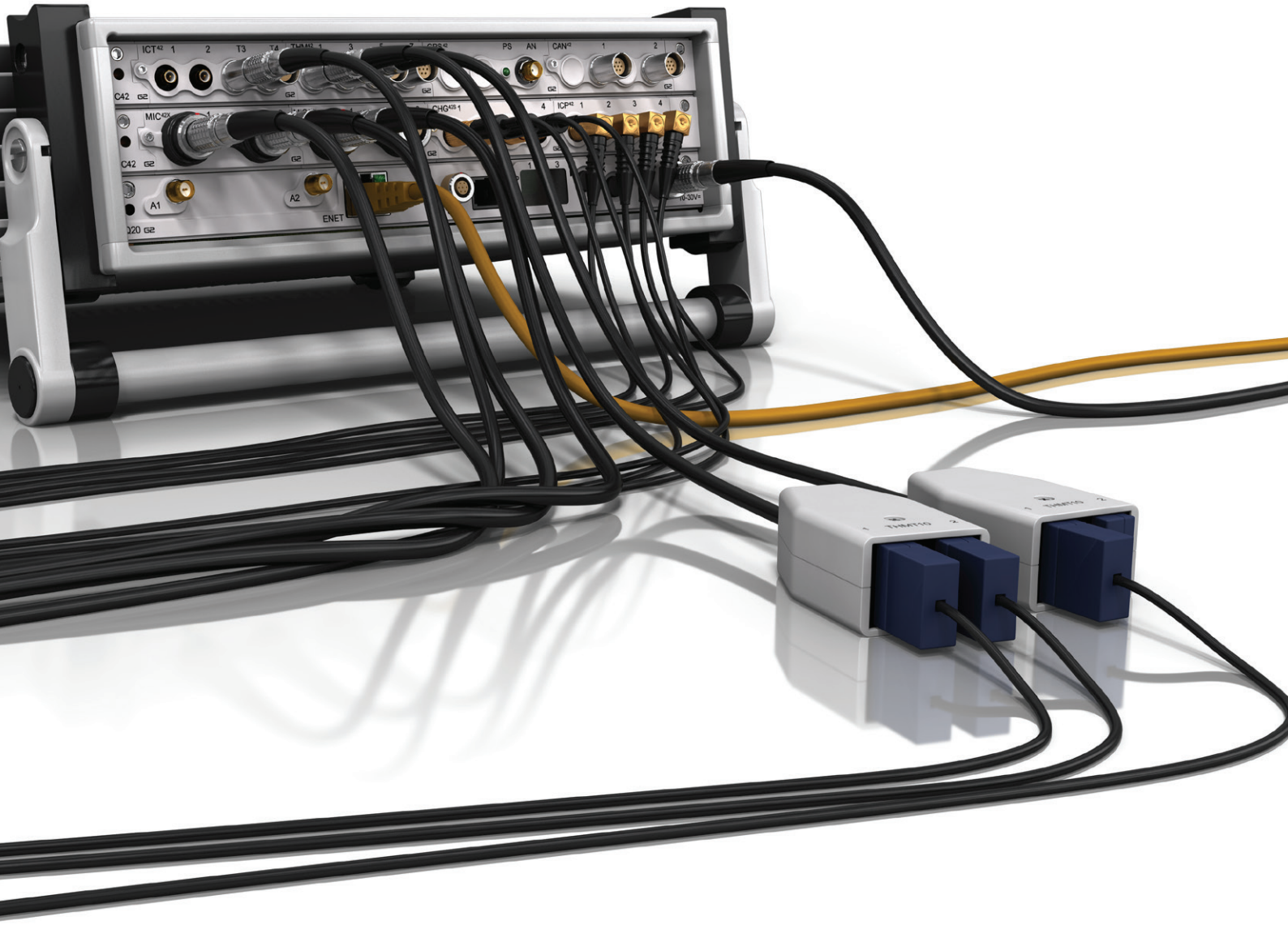
MÜLLER-BBM
VibroAkustik Systeme

PAK



Accessories

Personalize your data acquisition system with tailor-made testing enhancements for a comprehensive measurement solution.

PAK MKII

SUBMODULES

BBOX10

The BBOX10 is a 48 channel buffer box, accepting an input signal from 3 ICM42S Modules and providing 5 independent outputs of the input signal. One output is routed to the front patch panel for easy access and monitoring, while the other 4 outputs are routed to 37-way D-sub connectors at the back of the BBOX10. The buffer box has 3 identical blades of 16 input channels - each totalling 48 input channels. Additionally it includes a self-test feature which tests and verifies that all input and output channels are still functional. The inputs of the BBOX10 are differential and the outputs are single-ended.

WHERE USED:
• 1 BBOX10 can support the outputs of up to 3 x ICM42S Modules
• Designed according to a 1.5 U form factor for mounting in 19 inch racks
• Accepts 48 SMB connector inputs from 3 x ICM42S Modules
• Provides 5 independent outputs of the input signal: - 1 to each front patch panel - 4 to 37-way D-sub connectors at the back of the BBOX10

290077

CABLES FOR THE BBOX10

NAME	DESCRIPTION	PQ11 G2	PQ12 G2	PQ20 G2	PQ30 G2	LAMBDA POWER SUPPLY	MEAN WELL POWER SUPPLY	RACK-MOUNT POWER	BBOX10	PSDP20	CONNECTOR 1	CONNECTOR 2	LENGTH	CURRENT RATING	REF NO
019K	The 019K is a standard length cable that connects the serial port of a PQ board to the serial port of the BBOX10	●	●	●	●	–	–	–	●	–	7-way Lemo (FGG.0B.307) with green bend relief	7-way Lemo (FGG.0B.307) with green bend relief	1 m	N/A	291019
034K	The 034K is a standard length cable that connects the BBOX10 to a USB-to-serial converter attached to a PC	–	–	–	–	–	–	–	●	–	7-way Lemo (FGG.0B.307) with green bend relief	Female 9-way D-sub	2 m	N/A	291034
224K	The 224K is a standard length power cable for powering the BBOX10 from a PSDP20	–	–	–	–	–	–	–	●	●	5-way Lemo (FGG.1B.305) with orange bend relief	5-way Lemo (FGG.1B.305) with orange bend relief	2 m	10 A	291224
225K	The 225K is a standard length power cable for powering the BBOX10 from a set of desktop power supplies (e.g. 3 TDK Lambda UP36-12). The power inputs for the banana plugs are indicated by labels (+16 V, -16 V, +5 V, GND)	–	–	–	–	●	–	–	●	–	5-way Lemo (FGG.1B.305) with orange bend relief	4 stackable banana plugs, 3 red and 1 black	2 m	10 A	291225
226K	The 226K is a standard length power cable for powering the BBOX10 from a PSDP20	–	–	–	–	–	–	–	●	●	5-way Lemo (FGG.1B.305) with orange bend relief	5-way Lemo (FGG.1B.305) with orange bend relief	3 m	10 A	291226

ALOP10

The ALOP10 is a rack mountable SubModule for routing the analog output signals from up to 8 ALO42S or ALO42S G2 Modules to individual male SMB connectors. The 4 7-way Lemo connectors of an ALO42S or ALO42S G2 Module are connected to a 23K cable, which is in turn plugged into the ALOP10 by means of a 37-way D-sub connector. The analog output signals are routed to a corresponding section of the ALOP10 front panel. Reprogrammable channel numbering is provided for every 8th channel.

WHERE USED:
• 1 ALOP10 can support the outputs of up to 8 ALO42S or ALO42S G2 Modules
• Designed according to a 1.5 U form factor for mounting in 19 inch racks
• Accepts 8 37-way D-sub connector inputs
• Provides outputs in the form of 32 male SMB connectors

290078

CABLES FOR THE ALOP10

NAME	DESCRIPTION	PQ11 G2	PQ12 G2	PQ20 G2	PQ30 G2	LAMBDA POWER SUPPLY	MEAN WELL POWER SUPPLY	RACK-MOUNT POWER	ALOP10	PSDP20	CONNECTOR 1	CONNECTOR 2	LENGTH	CURRENT RATING	REF NO
224K	The 224K is a standard length power cable for powering the ALOP10 from a PSDP20	–	–	–	–	–	–	–	●	●	5-way Lemo (FGG.1B.305) with orange bend relief	5-way Lemo (FGG.1B.305) with orange bend relief	2 m	10 A	291224
225K	The 225K is a standard length power cable for powering the ALOP10 from a set of desktop power supplies (e.g. 3 TDK Lambda UP36-12). The power inputs for the banana plugs are indicated by labels (+16 V, -16 V, +5 V, GND)	–	–	–	–	●	–	–	●	–	5-way Lemo (FGG.1B.305) with orange bend relief	4 stackable banana plugs, 3 red and 1 black	2 m	10 A	291225
226K	The 226K is a standard length power cable for powering the ALOP10 from a PSDP20	–	–	–	–	–	–	–	●	●	5-way Lemo (FGG.1B.305) with orange bend relief	5-way Lemo (FGG.1B.305) with orange bend relief	3 m	10 A	291226

OSMB10

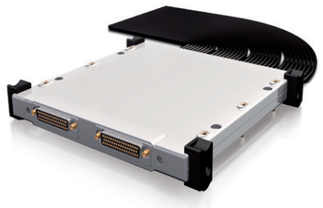
The OSMB10 is a SubModule that is used to break out signals from a 16-way Lemo connector to 8 SMB connectors. This SubModule can be used to break out the monitor output signals from a 16-way Lemo of both an ICM42S G2 and a BBOX10.

WHERE USED:
• 1 OSMB10 can be used with both an ICM42S and a BBOX10
• Designed to break out the monitor output signals from an ICM42S or a BBOX10
• Accepts an input connection from a 16-way Lemo connection
• The OSMB10 provides 8 SMB output connections

290080

ICPM10

The ICPM10 personalizes ICP42 or ICP42 G2 Modules by providing 2 50-way D-sub connectors. As a compound SubModule, it takes the form of a breakout box which is secured to the top of any Mainframe. These breakout boxes are stackable with the option to secure two compound Modules on top of each other. The strength of this SubModule's concept lies in its flexibility, as the ICPM10 with its 50-way D-sub interface may be easily removed if not required for certain tests.

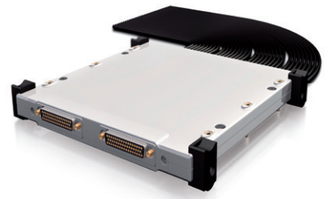


WHERE USED:
• 1 ICPM10 can support the outputs of up to 8 ICP42 or ICP42 G2 Modules
• Designed in the form of a breakout box which is secured to the top of any Mainframe
• Accepts 32 SMB connector inputs
• Provides outputs in the form of 2 50-way D-sub connectors

250046

ICPM10S

The ICPM10S personalizes ICP42S or ICP42S G2 Modules by providing 2 50-way D-sub connectors. As a compound SubModule, it takes the form of a breakout box which is secured to the top of any Mainframe. These breakout boxes are stackable with the option to secure two compound Modules on top of each other. The strength of this SubModule's concept lies in its flexibility, as the ICPM10S with its 50-way D-sub interface may be easily removed if not required for certain tests.



WHERE USED:
• 1 ICPM10S can support the outputs of up to 8 ICP42S or ICP42S G2 Modules
• Designed in the form of a breakout box which is secured to the top of any Mainframe
• Accepts 32 3-way Lemo connector inputs
• Provides outputs in the form of 2 50-way D-sub connectors

250050

TBNC10

The Tri-BNC (TBNC) SubModule is used to split signals from a 9-way Lemo connector to 3 BNC connectors. The SubModule connects to an ICS42 G2 Module through either a 500 or a 1200 mm fly-lead.

WHERE USED:
• With any ICP® based sensor commonly used to measure vibration, acceleration, force or pressure
• With any voltage source up to ±10 V in voltage input mode
• TBNC10 SubModules can be placed in a SubModule Rack for optimized cable management in 19 inch racks

TBNC10 options:	
TBNC10 500 • For a cable length of 500 mm	291040
TBNC10 1200 • For a cable length of 1200 mm	290102

TBNC30

The TBNC30 SubModule is used to split signals from a 9-way Lemo connector to 3 BNC Jack connectors. The SubModule connects to an ICS42 G2 Module through either a 500 or a 1200 mm fly-lead.

WHERE USED:
• With any ICP® based sensor commonly used to measure vibration, acceleration, force or pressure
• With any voltage source up to ±10 V in voltage input mode

TBNC30 options:	
TBNC30 500 • For a cable length of 500 mm	231039
TBNC30 1200 • For a cable length of 1200 mm	291038

TBNC40

The TBNC40 SubModule is used to split signals from a 9-way Lemo connector to 3 BNC Plug connectors. The SubModule connects to an ICS42 G2 Module through either a 500 or a 1200 mm fly-lead.

WHERE USED:
• With any ICP® based sensor commonly used to measure vibration, acceleration, force or pressure
• With any voltage source up to ±10 V in voltage input mode

TBNC40 options:	
TBNC40 500 • For a cable length of 500 mm	291041
TBNC40 1200 • For a cable length of 1200 mm	291042

TSMB10

The Tri-SMB (TSMB) SubModule is used to split signals from a 9-way Lemo connector to 3 SMB connectors. The SubModule connects to an ICS42 G2 Module through a 1200 mm fly-lead.

WHERE USED:
• With any ICP® based sensor commonly used to measure vibration, acceleration, force or pressure
• With any voltage source up to ±10 V in voltage input mode
• TSMB10 SubModules can be placed in a SubModule Rack for optimized cable management in 19 inch racks

290111

ICMA10

The ICMA10 is a SubModule designed for use with an ICM42S. It is used to break out signals from a 50-way D-sub connector to 16 SMB connectors.

WHERE USED:
• 1 ICMA10 can be used with an ICM42S
• Designed to be connected to the front panel of an ICM42S
• Accepts an input connection from a 50-way D-sub connector
• The ICMA10 provides 16 SMB output connections

290079

ICTV11

The ICTV11 is used to protect ICT42, ICT42S or ICT42 G2, ICT42S G2 Modules' Tacho inputs from excessively high voltages. This may occur when inductive devices are discharged or when measurements are conducted close to high voltage circuitry. The SubModule contains high energy over-voltage dissipation devices. These devices limit the output voltage to reasonable values which will not destroy the internal circuitry of the Modules. The SubModule connects to ICT42, ICT42S or ICT42 G2, ICT42S G2 Modules through a 300 mm fly-lead ending with a 4-way Lemo FGG.0B connector.

WHERE USED:
• 1 ICTV11 can support 1 channel on an ICT42, ICT42S, ICT42 G2 or ICT42S G2 Module
• Designed as a SubModule used to protect a Tacho channel from excessively high voltages
• Accepts 1 4-way Lemo FGG.0B connector
• Provides a BNC connector to interface with the appropriate Tacho sensor

290056

FLXB20 (FlexRay™)

The FLXB20 SubModule provides an interface to a 9-way D-sub connector. The FLXB20 SubModule is used to connect an FLX42 G2 Module to a FlexRay™ network. It provides the interface between the 7-way Lemo connector on an FLX42 G2 Module and the 9-way D-sub connector on a FlexRay™ network.

WHERE USED (FlexRay™):
• Designed as a SubModule used to connect 1 channel of an FLX42 G2 Module to a FlexRay™ network
• Accepts a single 7-way Lemo FGG.0B connector
• The FLXB20 provides the interface to the 9-way D-sub connector on a FlexRay™ network

FLXB20 (FlexRay™) options:	
FLXB20 300 • For a cable length of 300 mm	290070
FLXB20 3000 • For a cable length of 3000 mm	290085
FLXB20 6000 • For a cable length of 6000 mm	290109

FLXB20 (CANbus)

The FLXB20 SubModule is used to connect a CAN42 G2 Module to a CANbus network. It provides the interface between the 7-way Lemo connector on a CAN42 G2 Module and the 9-way D-sub connector on a CANbus network.

WHERE USED (CANbus):
• Designed as a SubModule used to connect 1 channel of a CAN42 G2 Module to a CANbus network
• Accepts a single 7-way Lemo FGG.0B connector
• The FLXB20 provides the interface to the 9-way D-sub connector on a CANbus network

FLXB20 (CANbus) options:	
FLXB20 300 • For a cable length of 300 mm - CAN point to point (≤1 Mbit/s) - CAN stub (≤1 Mbit/s)	290070
FLXB20 3000 • For a cable length of 3000 mm - CAN point to point (≤1 Mbit/s) - CAN stub (≤500 kbit/s)	290085
FLXB20 6000 • For a cable length of 6000 mm - CAN point to point (≤1 Mbit/s) - CAN stub (≤500 kbit/s)	290109

PSDP10

The PSDP10 is a multiport power distribution panel for powering multiple PAK MKII Mainframes. The panel (which is designed to be mounted in a 19 inch rack) is supplied power through a 5-way high power D-subminiature port and provides power to 12 recipient PAK MKII Mainframes through 4-way Lemo connectors.

WHERE USED:

- 1 PSDP10 supplies power for up to 12 PAK MKII Mainframes
- Designed according to a 1.5 U form factor for mounting in 19 inch racks
- Accepts power through a 5-way high power D-subminiature port
- The PSDP10 provides 12 4-way Lemo connectors

230011

PSDP20

Similar to the PSDP10, the PSDP20 is a multiport power distribution panel for powering multiple BBOX10 or ALOP10 SubModules. The panel is supplied power through an 8-way high power D-subminiature port and provides power to the recipient cards through 5-way Lemo connectors.

WHERE USED:

- 1 PSDP20 supplies power for up to 12 BBOX10 and/or ALOP10 SubModules
- Designed according to a 1.5 U form factor for mounting in 19 inch racks
- Accepts power through an 8-way high power D-subminiature port
- The PSDP20 provides 12 5-way Lemo connectors

230013

CABLES FOR THE PSDP20

NAME	DESCRIPTION	PQ11 G2	PQ12 G2	PQ20 G2	PQ30 G2	LAMBDA POWER SUPPLY	MEAN WELL POWER SUPPLY	RACK-MOUNT POWER	BBOX10	ALOP10	PSDP20	CONNECTOR 1	CONNECTOR 2	LENGTH	CURRENT RATING	REF NO
224K	The 224K is a standard length power cable for powering a BBOX10 or ALOP10 from the PSDP20	–	–	–	–	–	–	–	●	●	●	5-way Lemo (FGG.1B.305) with orange bend relief	5-way Lemo (FGG.1B.305) with orange bend relief	2 m	10 A	291224
226K	The 226K is a standard length power cable for powering a BBOX10 or ALOP10 from the PSDP20	–	–	–	–	–	–	–	●	●	●	5-way Lemo (FGG.1B.305) with orange bend relief	5-way Lemo (FGG.1B.305) with orange bend relief	3 m	10 A	291226
301K	The 301K is a standard length cable that is used to connect a modular rack mounted power supply to the PSDP20. Each of the unconnected wires is labelled according to the power supply to which it must be connected: +16 V, -16 V, ±16 V GND, +5 V, +5V GND	–	–	–	–	–	–	●	–	–	●	8-way D-sub	5 unconnected, labelled cables	1 m	40 A	291301

THMx10

Seven thermocouple based SubModules are available, each containing dedicated thermocouple connectors. Each SubModule contains a pair of miniature thermocouple connectors, of the appropriate alloy and color, according to either IEC or ANSI standards. Cold-junction-compensation is facilitated through the use of a 0.5 °C accurate temperature sensor in thermal contact with the connectors' contacts. The SubModule type is identified through a TEDS interface. Each SubModule connects to a THM42 or THM42 G2 Module through a 300 mm fly-lead ending with a 7-way Lemo FGG.0B connector.

THE FOLLOWING THERMOCOUPLE SUBMODULES ARE AVAILABLE:		
 THME10	The THME10 SubModule contains Chromel/Constantan (NiCr/CuNi) alloys and has lilac connectors (IEC 584-3 and ANSI MC 96.1)	250051
 THMJ10	The THMJ10 SubModule contains Iron/Constantan (Fe/CuNi) alloys and has black connectors (both IEC 584-3 and ANSI MC 96.1)	250027
 THMK10	The THMK10 SubModule contains Chromel/Alumel (NiCr/NiAl) alloys and has green connectors (IEC 584-3)	250016
 THMK10	The THMK10 SubModule contains Chromel/Alumel (NiCr/NiAl) alloys and has yellow connectors (ANSI MC 96.1)	250029
 THMT10	The THMT10 SubModule contains Copper/Constantan (Cu/CuNi) alloys and has blue connectors (ANSI MC 96.1)	250045
 THMT10	The THMT10 SubModule contains Copper/Constantan (Cu/CuNi) alloys and has brown connectors (IEC 584-3)	250028
 THMU10	The THMU10 SubModule contains Copper/Copper (Cu/Cu) alloys and has white connectors	250052

THMP10

The THMP10 SubModule is used in conjunction with a THM42 or THM42 G2 Module to provide 2 sets of 4-way Lemo EGG 0B connectors for use with 2 Pt100 sensors. These connectors provide current to a Pt100 sensor and sense the voltage across it. The SubModule type is identified through a TEDS interface.

The THMP10 SubModule connects to a THM42 or THM42 G2 Module through a 300 mm fly-lead ending with a 7-way Lemo FGG.0B connector.

WHERE USED:
• 1 THMP10 can support 2 channels on a THM42 G2 Module by linking the channels to 2 sensors
• Designed as a SubModule used to expand the capacity of a THM42 G2 Module
• Accepts 1 7-way Lemo EHG.0B connector
• Provides 2 sets of 4-way Lemo EGG 0B connectors for use with Pt100 sensors

250025

THMS10

The THMS10 SubModule is used in conjunction with a THM42 or THM42 G2 Module to provide 2 sets of 4-way general purpose screw terminals to connect to a pair of E, J, K or T thermocouples or a pair of Pt100 sensors. Cold-junction-compensation is facilitated through the use of a 0.5 °C accurate temperature sensor in thermal contact with the connectors' contacts. Constant current is provided for Pt100 use. The SubModule type is identified through a TEDS interface.

The THMS10 SubModule connects to a THM42 or THM42 G2 Module through a 300 mm fly-lead ending with a 7-way Lemo FGG.0B connector.

WHERE USED:
• 1 THMS10 can support 2 channels on a THM42 G2 Module by linking the channels to 2 sensors
• Designed as a SubModule used to expand the capacity of a THM42 G2 Module
• Accepts 1 7-way Lemo EHG.0B connector
• Provides 2 sets of 4-way general purpose screw terminals to connect to Pt100 sensors

250024

THMV10

The THMV10 SubModule is used in conjunction with a THM42 G2 Module. It provides 2 sets of 4-way screw terminals to connect to 2 constant current signals between 4 mA and 20 mA. Two precision 250 Ω resistors convert the constant current signals to voltage signals between 1 V and 5 V. The SubModule is identified through a TEDS interface.

The THMV10 SubModule connects to a THM42 G2 through a 300 mm fly-lead ending with a 7-way Lemo FGG.0B connector.

WHERE USED:
• 1 THMV10 can support 2 channels on a THM42 G2 Module
• Accepts 1 7-way Lemo EHG.0B connector
• Provides 2 sets of 4-way screw terminals
• Converts constant current signals between 4 mA and 20 mA to voltages between 1 V and 5 V

290118

QBNC11

The Quad BNC (QBNC) is a SubModule that is used to split signals from a 7-way Lemo connector through a 500 mm fly-lead ending with 4 BNC connectors. A sticker on top indicates with which Modules the QBNC is compatible, and how the signals are mapped.

WHERE USED:
• 1 QBNC11 is used to split the signals coming from an ALO42S or ICM42S Module
• Designed as a SubModule used to expand the capacity of an ALOP42S or ICM42S Module

250044

VICP10

The VICP10 is an interface board used to provide 10 V excitation to ICP® sensors. It is used in combination with an ICP42 or ICP42 G2 Module to allow an excitation voltage input at the Lemo power input on the VICP10 front panel.

WHERE USED:
• 1 VICP10 supports 1 ICP42 or ICP42 G2 Module
• Designed as an interface board to provide 10 V excitation to ICP® sensors
• Accepts 4 3-way Lemo FGG.0B connectors for connecting to 4 ICP® sensors
• Provides 4 4-way Lemo EHG.0B connectors for connecting to an ICP42 or ICP42 G2 Module

250057

GADGETS

MT12

Users can monitor and control measurements with a PAK MKII remote control. The MiniTerminal provides a large, bright LED display as a practical solution (even in daylight conditions) to show test information as well as to receive commands from a user. It connects to any one of the System Controller and Power Supply boards found in any Mainframe.

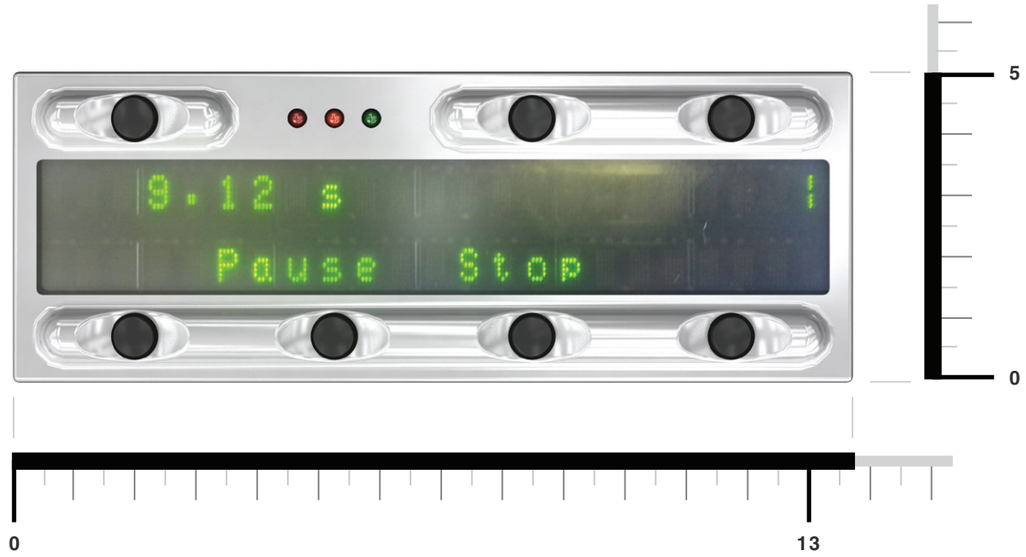
In Pass-By measurements, for example, users are able to control all connected Mainframes with a single button. The MiniTerminal also provides the user with valuable test information, such as instructions to a vehicle driver, or acts as a remote control when the operational environment does not allow direct access to the PAK MKII system, such as in confined areas.

User input is provided through 7 soft key buttons which can be labelled. These buttons are easy to operate even whilst driving. A piezoelectric buzzer is contained within the unit to alert the user of certain conditions.

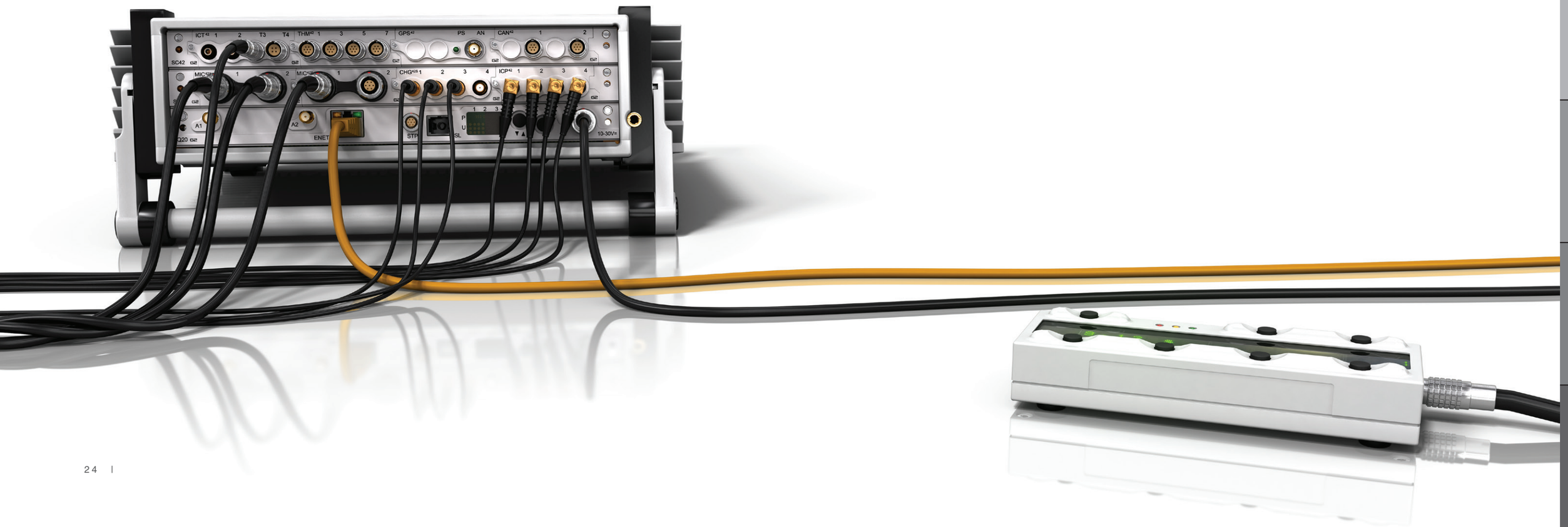
The communication cable to the System Controller and Power Supply can be plugged into 1 of 2 sockets found on both the left and right sides of the MiniTerminal. This affords the user the choice of the most comfortable position to insert the cable.

The MiniTerminal is compact and machined from aluminum. A tripod screw thread on its rear lid facilitates easy mounting through third party mounting systems.

REAL SIZE



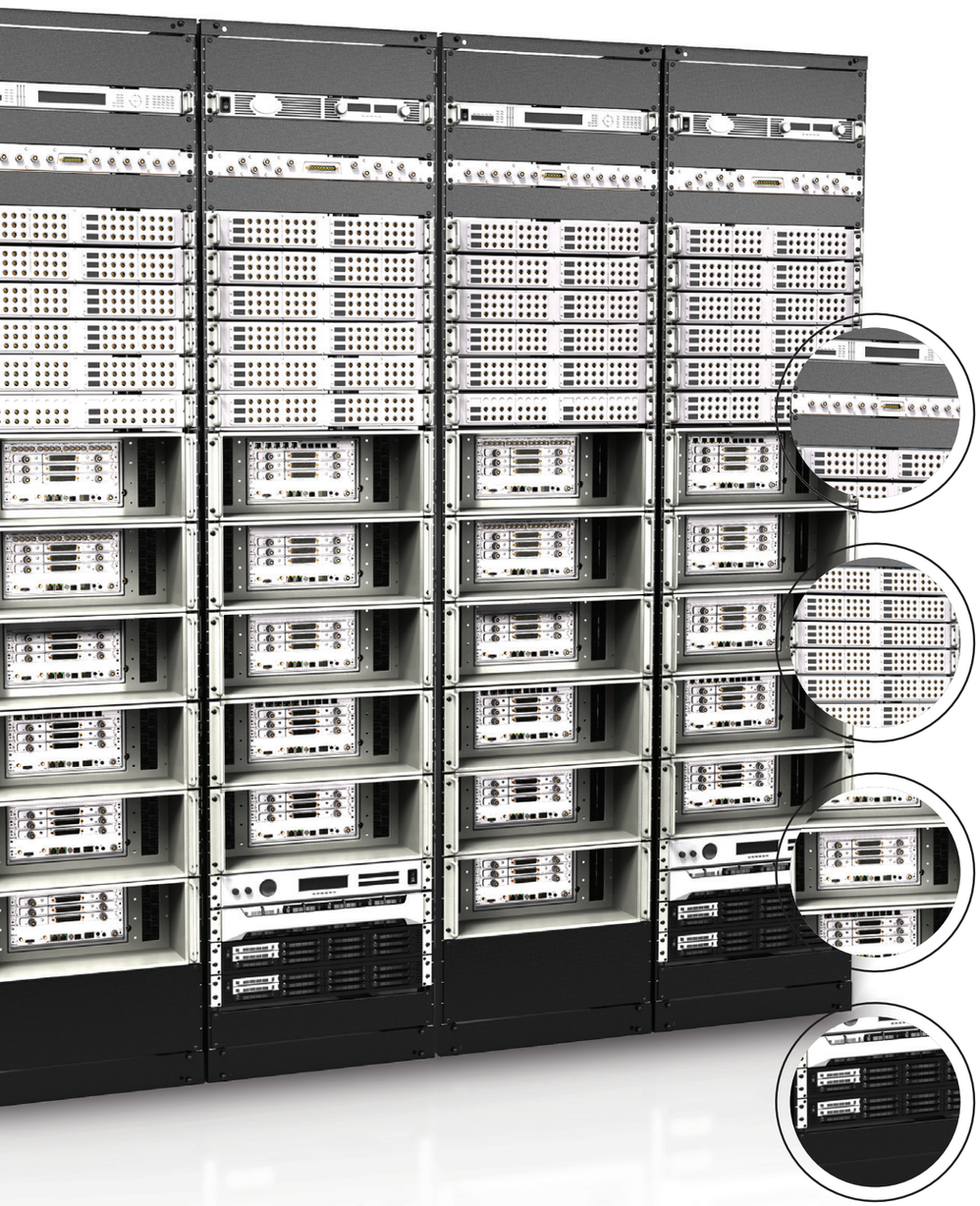
290071



MT12 CABLES

MINITERMINAL CABLES

NAME:	DESCRIPTION:	PQ11 G2	PQ12 G2	PQ20 G2	PQ30 G2	MT12	CONNECTOR 1	CONNECTOR 2	LENGTH	CURRENT RATING	REF:
005K	The 005K is a standard length serial cable. It connects an MT12 MiniTerminal to the serial port of all power supply and controller boards	●	●	●	●	●	7-way Lemo (FGG.0B.307) with green bend relief	7-way Lemo (FGG.0B.307) with green bend relief	2 m	N/A	291005
024K	The 024K is a variable length serial cable. It connects an MT12 MiniTerminal to the serial port of all power supply and controller boards	●	●	●	●	●	7-way Lemo (FGG.0B.307) with green bend relief	7-way Lemo (FGG.0B.307) with green bend relief	Variable (max. 5 m)	N/A	291024



Power Supply Distribution boards

Buffered outputs

Mainframes with Modules

Server

MOBILE AND RACKMOUNTS

SEATFRAME

The SF10 optimally secures a 2, 3, 4 or 6-slot Mainframe and notebook onto a car seat for mobile measurements. It consists of machined aluminum members which can be adjusted to optimally fit the seat, Mainframe and notebook. To prevent sideways movement, once placed on the seat, the side and rear feet can be adjusted to best hug the seat. The rear SeatFrame handle can also be adjusted to push against the seat's backrest to prevent it flipping over. It is strapped to the seat using the safety belt.

A notebook is placed on an adjustable platform mounted above the PAK MKII which can fit any notebook size. It is fastened into position by restraining posts which can easily be loosened to remove the notebook. Multiple settings and adjustments allow the notebook to be placed in the position that best suits the user. The SeatFrame is ergonomically designed, easy to carry and extremely robust.

MAINFRAME SUPPORT:	250056	SEATFRAME:	250019

NOTEBOOK PLATFORM: 250055

MR10

The MR10 is a compact Mobile Rack that distributes all measuring channels from the Mainframe front-end to BNC connectors on the left-hand side of the Mobile Rack. The BNC connectors are easily accessible and simplify cabling for Mobile measurements.

WHERE USED:

- The MR10 can support up to 170 voltage and ICP® channels as well as additional Tacho input channels
- When sensor cabling needs to be simplified by accepting only BNC connectors
- When neat sensor configuration is needed for a Mobile measurement
- With any ICP® based sensor commonly used to measure vibration, acceleration, force or pressure
- With any voltage source up to ±10 V in voltage input mode

250061

RACKMOUNT FOR MF04, MF06 AND MF10

The RM04, RM06 and RM10 are compact, machined aluminum Rack Mounting Kits which house 4, 6 and 10-slot PAK MKII Mainframes in 19 inch racks. The Mainframe has specifically been recessed in each Mounting Kit to ensure that all cables are contained behind the rack's front face. These cables can then be routed to the left and right sides of the Mainframe. At the rear, a horizontal brace provides a mounting point for cable connector flanges should this be required. This is particularly useful in cases where a conversion of connector types is required between those used by the PAK MKII and those used by the testing facility. The sides and rear of the Mounting Kit have been left open to allow air to enter from the bottom of the rack to properly cool each Mainframe.

RM04

DIMENSIONS:	
width:	482.6 mm
depth:	476.9 mm
height:	134.2 mm

RM04 houses an MF02, MF03 or MF04 Mainframe

290054

RM06

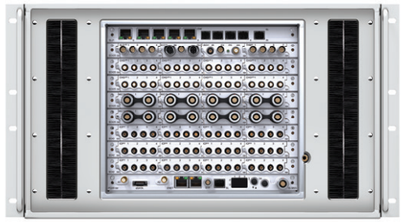
DIMENSIONS:	
width:	482.6 mm
depth:	556.9 mm
height:	177.2 mm

RM06 houses an MF06 Mainframe

290020

RM10

DIMENSIONS:	
width:	482.6 mm
depth:	556.9 mm
height:	265.2 mm



RM10 houses an MF10 Mainframe

290053

SMRM20

The SMRM20 is a panel designed to house various SubModules in a 19 inch rack.

WHERE USED:
• 1 SMRM20 provides housing for any SubModule. The number of SubModules that can be housed will depend on the type and width of the SubModule being used.
• Designed according to a 1 U form factor for mounting in 19 inch racks
• Accepts any SubModule type
• The SMRM20 provides a convenient and neat location for placing SubModules connected to a PAK MKII Mainframe mounted in a rack

250060

CABLES

CABLES

MAINFRAME POWER CABLES

NAME	DESCRIPTION	PQ11 G2	PQ12 G2	PQ20 G2	PQ30 G2	LAMBDA POWER SUPPLY	CIGARETTE LIGHTER	COAXIAL POWER SUPPLY	MEAN WELL POWER SUPPLY	PSDP10	PP1U10	CONNECTOR 1	CONNECTOR 2	LENGTH	CURRENT RATING	REF NO
214K	The 214K is a standard length power cable for powering combined power supply and controller boards from a car cigarette lighter	●	●	●	●	–	●	–	–	–	–	4-way Lemo (FGG.1B.304) with black bend relief	Cigarette lighter plug	2 m	15 A	291214
230K	The 230K is a standard length power cable for powering combined power supply and controller boards from a Mean Well power supply	●	●	●	●	–	–	–	●	–	–	4-way Lemo (FGG.1B.304) with red bend relief	4-way female DC power supply	1 m	15 A	291230
231K	The 231K is a variable length power cable for powering combined power supply and controller boards from a Mean Well power supply	●	●	●	●	–	–	–	●	–	–	4-way Lemo (FGG.1B.304) with red bend relief	4-way female DC power supply	Variable	15 A	291231
216K	The 216K is a standard length power cable for powering combined power supply and controller boards from a desktop power supply (e.g. a TDK Lambda UP36-12)	●	●	●	●	●	–	–	–	–	–	4-way Lemo (FGG.1B.304) with black bend relief	2 stackable banana plugs, 1 red and 1 black	2 m	20 A	291216
221K	The 221K is a variable length power cable for powering combined power supply and controller boards from a desktop power supply (e.g. a TDK Lambda UP36-12)	●	●	●	●	●	–	–	–	–	–	4-way Lemo (FGG.1B.304) with black bend relief	2 stackable banana plugs, 1 red and 1 black	Variable	20 A	291221
223K	The 223K is a standard length power cable for powering combined power supply and controller boards from a PSDP10. Alternatively, the 223K can also be used to supply power to a DCAT PAK MKII from a PP1U10	●	●	●	●	●	–	–	–	●	●	4-way Lemo (FGG.1B.304) with black bend relief	4-way Lemo (FGG.1B.304) with black bend relief	3 m	20 A	291223

SYNCLINK CABLES

NAME	DESCRIPTION	PQ11 G2	PQ12 G2	PQ20 G2	PQ30 G2	SL21	CONNECTOR 1	CONNECTOR 2	LENGTH	CURRENT RATING	REF NO
003K	The 003K is a standard length Fiber Optic cable used for SyncLink. It connects all power supply and controller boards to a synchronization engine (the SL21). The 003K can also be used to connect an SL21 to another SL21 in a cluster	●	●	●	●	●	Fiber Optic SC	Fiber Optic SC	0.5 m	N/A	290053
004K	The 004K is a standard length Fiber Optic cable used for SyncLink. It connects all power supply and controller boards to a synchronization engine (the SL21). The 004K can also be used to connect an SL21 to another SL21 in a cluster	●	●	●	●	●	Fiber Optic SC	Fiber Optic SC	5 m	N/A	290054

SENSOR AND SIGNAL CABLES USED WITH MODULES

NAME	DESCRIPTION	WSB42 G2	WSB42X G2	MIC42X G2	CHG42S G2	ALO42S G2	ICP42 G2	ICT42 G2	IRG42 G2	ICM42S	ALOP10	BBOX10	CONNECTOR 1	CONNECTOR 2	LENGTH	CURRENT RATING	REF NO
001K	The 001K is a standard length sensor cable used to connect deflection bridge sensors to WSB42 G2 and WSB42X G2 Modules	●	●	–	–	–	–	–	–	–	–	–	7-way Lemo (FGG.0B.307) with blue bend relief	7 unconnected wires (brown, red, orange, yellow, green, blue, black)	2 m	N/A	291001
008K	The 008K is a variable length sensor cable used to connect deflection bridge sensors to WSB42 G2 and WSB42X G2 Modules	●	●	–	–	–	–	–	–	–	–	–	7-way Lemo (FGG.0B.307) with blue bend relief	7 unconnected wires (brown, red, orange, yellow, green, blue, black)	Variable	N/A	291008
010K	The 010K is a standard length signal cable that disconnects the shield of an MIC42X G2 Module	–	–	●	–	–	–	–	–	–	–	–	7-way Lemo (FGG.1B.307) with black bend relief	7-way Lemo (PHG.1B.307) with black bend relief	300 mm	N/A	291010
013K	The 013K is a standard length signal cable that connects a CHG42S G2 Module to a BNC socket	–	–	–	●	–	–	–	–	–	–	–	10 - 32 Microdot	BNC plug	1 m	N/A	291013
023K	The 023K is a standard length cable that connects an ALO42S G2 Module to an ALOP10 SubModule	–	–	–	–	●	–	–	–	–	●	–	4 7-way Lemo (FGG.0B.307)	Male 37-way D-sub	3 m	N/A	291023
025K	The 025K is a standard length signal cable that converts the SMB output of a Module to a BNC output	–	–	–	–	–	●	●	●	–	–	–	SMB socket	BNC plug	1 m	N/A	291025
035K	The 035K is a standard length signal cable that connects an ICM42S monitor output to a BBOX10 input	–	–	–	–	–	–	–	–	●	–	●	16-way Lemo (FGG.1B.316) with no bend relief	16-way Lemo (FGG.1B.316) with no bend relief	4 m	N/A	291035

MICROPHONE ARRAY AK320

ARRAY AK320

ARRAY SPECIFICATIONS:	
Diameter:	• 0.87 m
Weight:	• 6.5 kg (without stand)
Array geometry:	• 2-dimensional 5-arm spiral geometry • Smart distribution on a circular array shape • Reduction of side lobe directivity effects
Number of microphones:	• 36 (1/4 inch ICP® microphones)
Frequency range:	• 500 Hz – 10 kHz (for sound localization)
Measuring distance:	• 0.5 m – infinity
Camera:	• Industrial USB camera Lumenera Lu175
Stand:	• Sachtler Tripod

570005

INDIVIDUAL ARRAY AK320 MICROPHONES

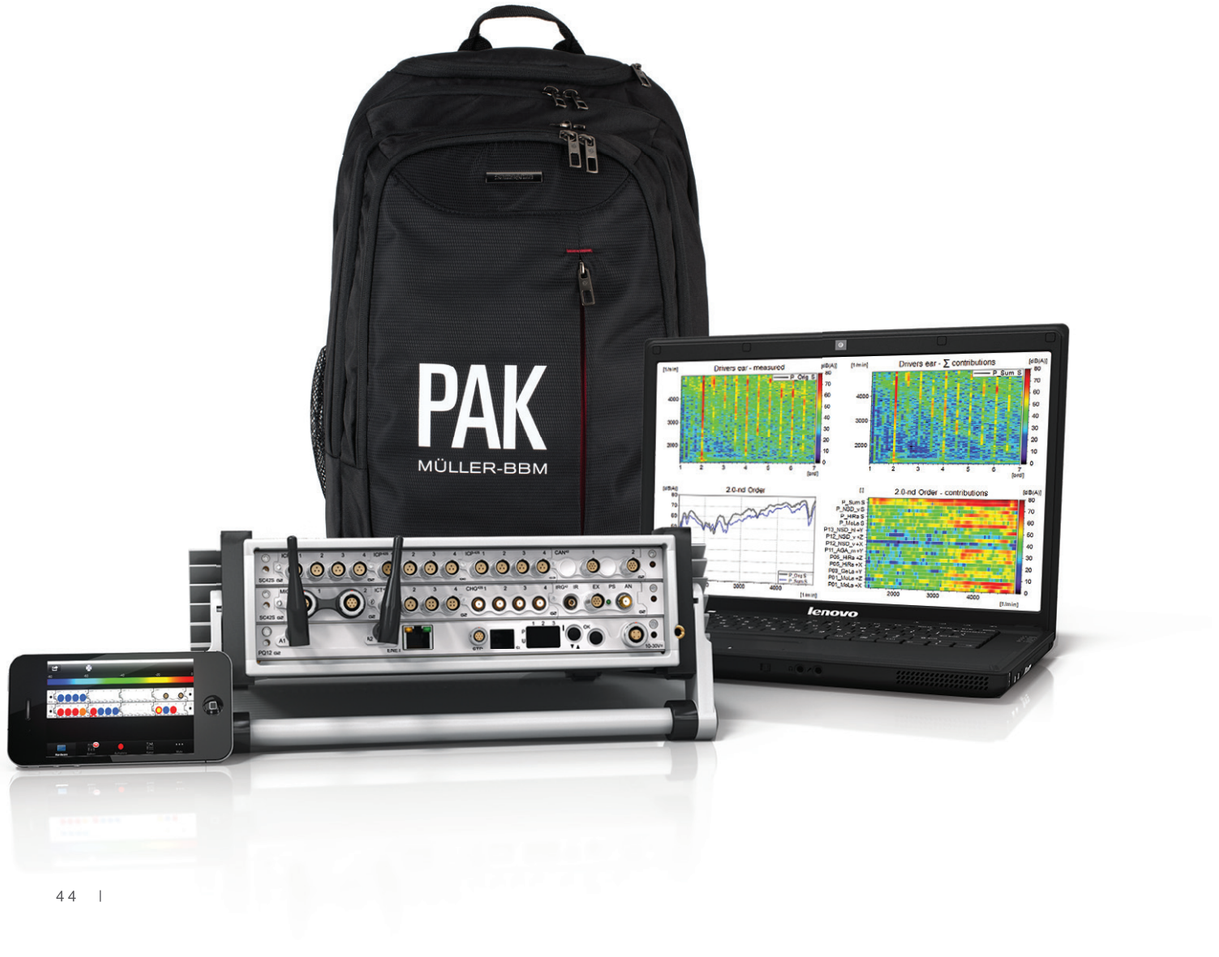
SPECIFICATIONS FOR INDIVIDUAL ARRAY MICROPHONES	
Model:	• Microtech Gefell M 360
Transducer type:	• Electret pressure transducer
Conditioning:	• ICP®, current powered
Diameter:	• 1/4 inch
Frequency range:	• 20 Hz – 20 kHz
Dynamic range:	• 35 dB(A) – 130 dB(A)
Sensitivity:	• 10 mV/Pa
Connector:	• SMB-Connector

570009

CAMERA

SPECIFICATIONS FOR INDIVIDUAL ARRAY MICROPHONES	
Model:	• Lumenera Lu175
Sensor:	• 1.3 M Pixel image sensor
Interface Connector:	• High-speed USB 2.0 (480 Mbits/sec)
Resolution/Frame Rate:	• 1280 x 1024, up to 30 fps • 640 x 480, up to 100 fps
Power Requirements:	• USB bus power
Dimensions:	• 2.25” x 3.85” x 1.56”

570010



TRAVEL

SUITCASES

Protective rigid cases for transportation over long distances are available for all Mainframe sizes. These robust cases are made of HPX® high-tech plastic and are water, dust and air proof. Depending on the interior configuration of the transportation case, users have a secure place not only for a PAK MKII system, but also for cables, sensors and even a notebook. Smaller cases may be taken on board an airplane as hand luggage.

• For MF02 Mainframes	290031
• For MF02 Mainframes incl. Laptop	290032
• For MF03 Mainframes incl. Laptop	290072
• For MF03 & MF04 Mainframes	290063
• For MF04 & MF06 Mainframes incl. Laptop	290064
• For MF10 Mainframes	290065

BACKPACK

Backpacks are recommended for a highly mobile situation, snuggly fitting a troubleshooting 2-slot based system and a 17 inch laptop.

290068

TOOLS

ESD KIT (PORTABLE ANTI STATIC WORKSTATION)

A kit used to prevent damage to a PAK MKII caused by electro-static discharge (ESD). The kit consists of:

ESD KIT:	
• A static free rubber mat	• A straight grounding cord
• An adjustable wrist-strap and coil cord	• A packing wallet

290059

MODULE SCREWDRIVER

A 2.0 mm screwdriver with a hexagonal head used to insert or remove a Module from within a Signal Conditioning board.

290086

SC42 G2 SCREWDRIVER

A 2.5 mm screwdriver with a hexagonal head used to insert or remove a Signal Conditioning board from a PAK MKII Mainframe.

290087

CHASSIS GROUND SCREWDRIVER

A 4.0 mm screwdriver with a hexagonal head used to attach a chassis ground cable to a PAK MKII Mainframe.

290088

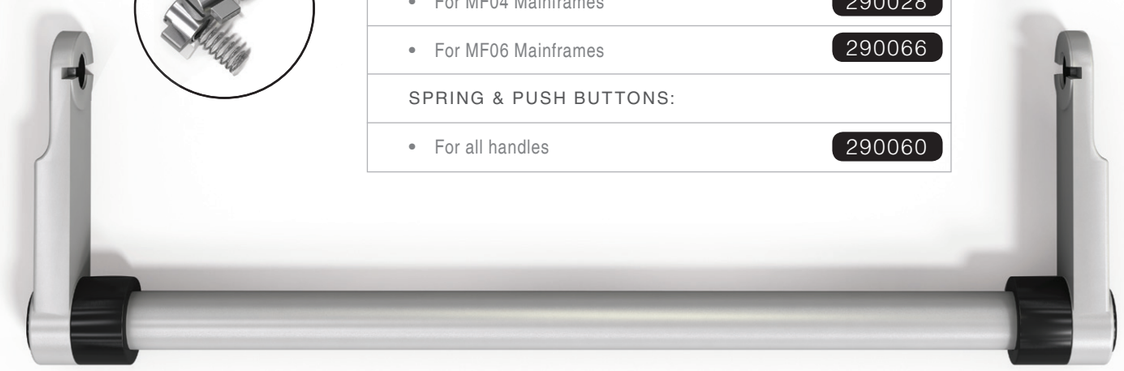
SPARES

MODULE SCREWS

MODULE SCREWS:	
• 6 mm screw for 41 and 42 series	290094

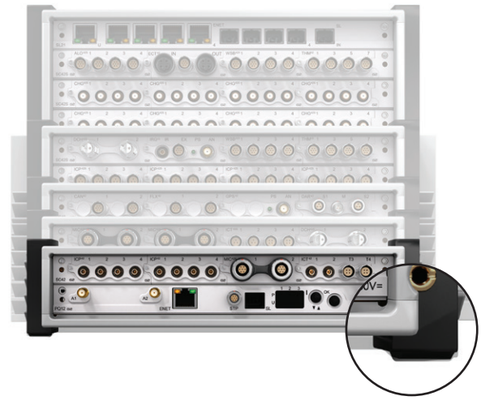
PACK OF 4

HANDLES, SPRING & PUSH BUTTONS



HANDLES WITH SPRING & PUSH BUTTONS:	
• For MF02 & MF03 Mainframes	290000
• For MF04 Mainframes	290028
• For MF06 Mainframes	290066
SPRING & PUSH BUTTONS:	
• For all handles	290060

FEET



FEET:	
• For MF02 Mainframes	290024
• For MF03 Mainframes	290038
• For MF04 Mainframes	290023
• For MF06 Mainframes	290014
• For MF10 Mainframes	290039

PACK OF 4

SCREW ASSEMBLY

SCREW ASSEMBLY:	290089

PACK OF 2

MBL

- For G2 series **251015**

VB10

- For G2 series **240014**

PLUGS

- Ethernet Plug **290091**
- SyncLink Plu **290090**

BATTERY KITS

- For MF02 Mainframes **290011**
- For MF03 & MF04 Mainframes **290078**
- For MF06 & MF10 Mainframes **290017**

* depending on the mainframe build

POWER SUPPLIES

EXTERNAL POWER SUPPLY 144 W: **230015**

- For MF02, MF03, and MF04 Mainframes
  - 144 W AC/DC Adaptor
  - 100 – 240 V AC Voltage Input
  - 15 V @ 9.6 A Fixed DC Voltage Output

EXTERNAL POWER SUPPLY 201 W: **230017**

- For MF06 Mainframes
  - 201 W AC/DC Adaptor
  - 100 – 240 V AC Voltage Input
  - 15 V @ 13.4 A Fixed DC Voltage Output

EXTERNAL POWER SUPPLY 260 W: **230005**

- For MF10 Mainframes
  - 100 – 240 V AC Voltage Input
  - 26 V @ 10 A Fixed DC Voltage Output

ANTENNAS: STANDARD

Standard with the PAK MKII. Meant for use in a laboratory environment. 2.4 and 5.1 GHz band

PACK OF 2

STANDARD ANTENNA:	290093
• SMA Monopole Antenna with a hinged base	
• Frequency: 2.4 – 2.5 GHz and 5.1 – 5.9 GHz	
• Gain: 2 dBi	
• VSWR: 1.92:1 max	
• Length: 62 mm	

ANTENNAS: GREATER GAIN

Optional for greater gain. Meant for use in applications where a longer range is required. 2.4 and 5.1 GHz bands

PACK OF 2

GREATER GAIN ANTENNA:	290095
• SMA Dipole Antenna with a hinged base	
• Frequency: 2.4 – 2.5 GHz and 5.1 – 5.9 GHz	
• Gain: 5 dBi	
• VSWR: 2.0:1 max	
• Length: 197 mm	

REQUEST A QUOTATION

Title: _____ Name: _____ Surname: _____

Company: _____ Department: _____

Address: _____

_____ Country: _____

Tel : _____ Email: _____

QUANTITY	ITEM	REF NO.
	SUBMODULES	
	BBOX10	290077
	BBOX10 CABLES - 019K	291019
	BBOX10 CABLES - 034K	291034
	BBOX10 CABLES - 224K	291224
	BBOX10 CABLES - 225K	291225
	BBOX10 CABLES - 226K	291226
	ALOP10	290078
	ALOP10 CABLES - 224K	291224
	ALOP10 CABLES - 225K	291225
	ALOP10 CABLES - 226K	291226
	OSMB10	290080
	ICPM10	250046
	ICPM10S	250050
	TBNC10 500	291040
	TBNC10 1200	290102
	TBNC30 500	231039
	TBNC30 1200	291038
	TBNC40 500	291041
	TBNC40 1200	291042
	TSMB10	290111
	ICMA10	290079
	ICTV11	290056
	FLXB20 300 (FlexRay™ or CANbus)	290070
	FLXB20 3000 (FlexRay™ or CANbus)	290085
	FLXB20 6000 (FlexRay™ or CANbus)	290109
	PSDP10	230011
	PSDP20	230013
	PSDP20 CABLES - 224K	291224
	PSDP20 CABLES - 226K	291226
	PSDP20 CABLES - 301K	291301
	THME10 Purple Thermocouple Connector	250051
	THMJ10 Black Thermocouple Connector	250027

QUANTITY	CHAPTERS AND ITEMS	REF NO.
	THMK10 Green Thermocouple Connector	250016
	THMK10 Yellow Thermocouple Connector	250029
	THMT10 Blue Thermocouple Connector	250045
	THMT10 Brown Thermocouple Connector	250028
	THMU10 White Thermocouple Connector	250052
	THMP10	250025
	THMS10	250024
	THMV10	290118
	QBNC11 500	250044
	VICP10	250057
	GADGETS	
	MT12	290071
	MINITERMINAL CABLES - 005K	291005
	MINITERMINAL CABLES - 024K	291024
	MOBILE AND RACKMOUNTS	
	MAINFRAME SUPPORT	250056
	SEATFRAME	250019
	NOTEBOOK PLATFORM	250055
	MR10	250061
	RM04 for MF04 Mainframes	290054
	RM06 for MF06 Mainframes	290020
	RM10 for MF10 Mainframes	290053
	SMRM20 for SubModules	250060
	CABLES	
	POWER CABLES - 210K	291210
	POWER CABLES - 211K	291211
	POWER CABLES - 212K	291212
	POWER CABLES - 232K	291232
	POWER CABLES - 233K	291233
	POWER CABLES - 214K	291214
	POWER CABLES - 230K	291230
	POWER CABLES - 231K	291231
	POWER CABLES - 216K	291216
	POWER CABLES - 221K	291221
	POWER CABLES - 223K	291223
	SYNCLINK CABLES - 003K	290053
	SYNCLINK CABLES - 004K	290054
	SENSOR AND SIGNAL CABLES - 001K	291001

QUANTITY	CHAPTERS AND ITEMS	REF NO.
	SENSOR AND SIGNAL CABLES - 008K	291008
	SENSOR AND SIGNAL CABLES - 010K	291010
	SENSOR AND SIGNAL CABLES - 013K	291013
	SENSOR AND SIGNAL CABLES - 023K	291023
	SENSOR AND SIGNAL CABLES - 025K	291025
	SENSOR AND SIGNAL CABLES - 035K	291035
	MICROPHONE ARRAY AK320	
	ARRAY AK320	570005
	INDIVIDUAL ARRAY AK320 MICROPHONES	570009
	CAMERA	570010
	TRAVEL	
	SUITCASE - for MF02 Mainframes	290031
	SUITCASE - for MF02 Mainframes incl. Laptop	290032
	SUITCASE - for MF03 Mainframes incl. Laptop	290072
	SUITCASE - for MF03 & MF04 Mainframes	290063
	SUITCASE - for MF04 & MF06 Mainframes incl. Laptop	290064
	SUITCASE - for MF10 Mainframes	290065
	BACKPACK	290068
	TOOLS	
	ESD KIT	290059
	MODULE SCREWDRIVER	290086
	SIGNAL CONDITIONING BOARD SCREWDRIVER	290087
	CHASSIS GROUND LUG SCREWDRIVER	290088
	SPARES	
	MODULE SCREWS - 6 MM SCREW FOR 41 AND 42 SERIES	290094
	HANDLES, SPRING & PUSH BUTTONS - for MF02 & MF03 Mainframes	290000
	HANDLES, SPRING & PUSH BUTTONS - for MF04 Mainframes	290028
	HANDLES, SPRING & PUSH BUTTONS - for MF06 Mainframes	290066
	SPRING & PUSH BUTTONS - for all Mainframes	290060
	FEET - for MF02 Mainframes	290024
	FEET - for MF03 Mainframes	290038
	FEET - for MF04 Mainframes	290023
	FEET - for MF06 Mainframes	290014
	FEET - for MF10 Mainframes	290039
	SCREW ASSEMBLY	290089
	MBL - for G2 Series	251015
	VB10 - for G2 Series	240014

QUANTITY	CHAPTERS AND ITEMS	REF NO.
	PLUGS - ETHERNET PLUG	290091
	PLUGS - SYNCLINK PLUG	290090
	BATTERY KITS - for MF02 Mainframes	290011
	BATTERY KITS - for MF03 & MF04 Mainframes	290078
	BATTERY KITS - for MF06 & MF10 Mainframes	290017
	POWER SUPPLIES	
	EXTERNAL POWER SUPPLY 144 W - for MF02, MF03, and MF04 Mainframes	230015
	EXTERNAL POWER SUPPLY 201 W - for MF06 Mainframes	230017
	EXTERNAL POWER SUPPLY 260 W - for MF10 Mainframes	230005
	ANTENNAS	
	ANTENNA STANDARD	290093
	ANTENNA GREATER GAIN	290095

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