INVASIVE BLOOD PRESSURE MONITORING
# WHO WE ARE

## HYBYMED® IBPM SYSTEM

### HYBYMED® IBPM KITS
- Hybymed® Single Pressure Monitoring Kits
- Hybymed® Double Pressure Monitoring Kits
- Hybymed® Triple Pressure Monitoring Kits
- Hybymed® Neonatal/Pediatric Pressure Monitoring Kits

## HYBYMED® IBPM PLUS SYSTEM

### HYBYMED® IBPM PLUS KITS
- Hybymed® Single Pressure Monitoring Kits with Closed Blood Sampling
- Hybymed® Double Pressure Monitoring Kits with Closed Blood Sampling
- Hybymed® Triple Pressure Monitoring Kits with Closed Blood Sampling
- Hybymed® Quadruple Pressure Monitoring Kits with Closed Blood Sampling
- Hybymed® Neonatal/Pediatric Pressure Monitoring Kits with Closed Blood Sampling
- Hybymed® Closed Blood Sampling Kit

## HYBYMED® BOARDS AND CABLES

### HYBYMED® BOARDS AND CABLES
- Hybymed® Contact Boards with integrated Monitor Cable
- Hybymed® Contact Boards
- Hybymed® Holders and Dummy Transducers
- Hybymed® Monitor Cables with Metal push-pull connector
HYB IS A HIGH-TECH COMPANY

We have over four decades of internationally recognized experience in the research and development of thickfilm hybrid circuits, pressure sensors and electronics for various applications.

We provide a full range of services covering the entire process from development to batch production.

We create custom-made products based on anticipating the needs of our customers, our experience in selling our own products and development and manufacturing for known customers.

STATE-OF-THE-ART TECHNOLOGY

Thick-film hybrid technology is in Hyb since 1972.
This technology is one of the best technologies to build sensors, electronic circuits and other electronic components. It was developed to serve the military, aerospace and medicine purposes. Thickfilm technology allows the manufacturer to fine tune some parameters and so allows adjustments for special customer requests. The Hybymed® transducer is built on thick-film hybrid technology.

Hyb is one of the pioneers of the wireless technology in the field of IBPM.

The Hybymed® IBPM wireless system is build around a standard Bluetooth™ technology.

INVASIVE BLOOD PRESSURE MONITORING

Since 1982 Hyb develops and produces disposable blood pressure transducers.

Now Hyb presents to the market its new state-of-the-art IBPM system:

• Hybymed® blood pressure system with integrated disposable pressure transducers directly contacted onto a reusable Hybymed® contact board
• Hybymed® closed, needleless blood sampling system
• Hybymed® innovative wireless system for transmission of blood pressure signal from a patient to a monitor

QUALITY

Hyb’s Quality system is certified according to:

ISO 9001:2008
ISO 14001:2004
ISO 13485:2003
Hybymed® IBPM system

HMT23
HYBYMED® DISPOSABLE BLOOD PRESSURE TRANSUDER

PRODUCT ADVANTAGES

• Disposable cordless transducer
• Easy click contacting of transducers
• Transducers are directly contacted onto a reusable contact board, with only one cable connection to a monitor

TECHNICAL SPECIFICATION

• Modern chip technology for an accurate registration of value
• Pre-calibrated sensor with constant electrical parameters (sensitivity, linearity, zero stability)
• Sensitivity: 5 μV/V/mmHg ±2%
• Zero Drift with Time: < or equal to ±1.0 mmHg/8 hours
• Dielectric gel barrier

PATIENT & USER BENEFIT

• Transducer set ensures accurate and reliable data for continuous monitoring of patient’s blood pressure
• Reduces cables
  • cordless transducer
  • only one cable outlet from a contact board to a monitor
• Economic, user and environmentally friendly system of reusable contact board

STOPCOCK

• 4-way stopcock
• Red, blue, yellow or white T-handle

FLUSH DEVICE

• Continuous Flow Rate Flush Device 3 ml: 3 ml/h (±1 ml/h) at 300 mmHg
• Continuous Flow Rate Flush Device 30 ml: 30 ml/h (±10 ml/h) at 300 mmHg
• Fast flow: >125 ml/min at 300 mmHg
INVASIVE BLOOD PRESSURE MONITORING TRANSDUCERS

**PARAMETER**
- Sensitivity
- Input Impedance
- Output Impedance
- Zero Thermal Effect
- Unbalance
- Thermal Coefficient Span
- Zero Drift with Time
- Non-Linearity and Hysteresis
- Operating Temperature
- Operating Pressure Range

**VALUE**
- 5 μV/V/mmHg, ±2% (typically <±1%)
- 270 to 4500 Ohms
- 270 to 450 Ohms
- < or equal to ±0.3% mmHg/°C
- ±25 mmHg
- ±0.1%/°C
- < or equal to ±1.0 mmHg/8 hours after 5 min. warm-up to operating temperature
- ±1% of reading or ±1 mmHg
- 15°C to 40°C
- -50 to +300 mmHg

**HYBYMED® CONTACT BOARDS**
- Two- or four-fold reusable contact boards
- Gold plated contacts are easily cleaned with a clean and dry cloth
- Unused port(s) should be protected using a dummy transducer
- Each port is marked for a pressure channel

**HYBYMED® MONITOR CABLES, HOLDERS AND DUMMY TRANSDUCER**
- monitor cable
- holder
- dummy transducer (protective cover)

**QUALITY**
**ADMINISTRATION SET**

Special set for pressure monitoring:
- Single-, two-, three- or quadruple-line macro administration set
- Plastic spike
- Dropper (in accordance with ISO 8536-4, 20 drops = 1 ml ± 0.1)
- Flexible lower section of drip chamber permits rapid adjustment of fluid level
- 15 μm fluid filter in accordance with ISO 8536-4
- Tubing length approx. 150 cm (60’’)
- Roller clamp
- Lock fitting

**PRESSURE TUBINGS**

- PVC tubes, DOP free
- Ø1.5 x Ø2.7 mm transparent
- Red, blue, yellow or without stripes

**ADDITIONAL STOPCOCKS IN-LINE**

- 4-way stopcock
- Red, blue, yellow or white T-handle

**PACKAGING AND STERILIZATION**

- Standard or custom-made kits
- ETO sterilization

**CUSTOM-MADE KITS**

- Hybymed® IBPM kits can be designed and packed on customer needs and specification.
Hybymed® IBPM system

HMS with HMT23
HYBYMED® SINGLE PRESSURE MONITORING KITS

DESCRIPTION:

- Hybymed® pressure transducer HMT23 with 3 ml/h flush device and 4-way stopcock
- Macro administration set: X = 150 cm (60”)
- Pressure tube: A = 200 cm (78”)

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>REF</th>
<th>MPQ</th>
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<tbody>
<tr>
<td>red handle and red stripe tube</td>
<td>HMS 1 A2 23TT R303</td>
<td>50416021</td>
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</table>
**DESCRIPTION:**

- Hybymed® pressure transducer HMT23 with 3 ml/h flush device and 4-way stopcock
- Macro administration set: $X = 150$ cm (60”)
- Pressure tubes:
  - $A = 170$ cm (67”)
  - $B = 30$ cm (12”)
- Additional 4-way stopcock

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>red handle and red stripe</td>
<td>HMS 1 B3 23TT R303</td>
<td>51043021</td>
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<tr>
<td>tube</td>
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<tr>
<td>blue handle and blue stripe</td>
<td>HMS 1 B3 23TT B303</td>
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<tr>
<td>tube</td>
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</table>
DESCRIPTION:

- Two Hybymed® pressure transducers HMT23 with 3 ml/h flush device and 4-way stopcock
- Macro administration set:
  X = 150 cm (60’’), Y = 25 cm (10’’)
- Pressure tubes:
  A = 170 cm (67’’)
  B = 30 cm (12’’)
  C = 170 cm (67’’)
  D = 30 cm (12’’)
- Two additional 4-way stopcocks

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<tr>
<th>MODEL</th>
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<tbody>
<tr>
<td>HMS 2 E4 23TT X303</td>
<td>51045021</td>
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</tbody>
</table>
**DESCRIPTION:**

- Three Hybymed® pressure transducers HMT23 with 3 ml/h flush device and 4-way stopcock
- Macro administration set:
  - X = 150 cm (60’’), Y = 25 cm (10’’)
- Pressure tubes:
  - A = 170 cm (67’’)
  - B = 30 cm (12’’)
  - C = 170 cm (67’’)
  - D = 30 cm (12’’)
  - E = 170 cm (67’’)
  - F = 30 cm (12’’)
- Three additional 4-way stopcocks

<table>
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<tr>
<th>MODEL</th>
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<th>MPQ</th>
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<tbody>
<tr>
<td>HMS 3 F4 23TT X303</td>
<td>51055021</td>
<td>20</td>
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</tbody>
</table>
**DESCRIPTION:**

- Hybymed® pressure transducer HMT23 with 30 ml/h flush device and 4-way stopcock
- Pressure tube: A = 60 cm (24”)
- Two additional 4-way stopcocks

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<th>DESCRIPTION</th>
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<tr>
<td>white handle and neutral tube</td>
<td>HMS N A3 23TT W330</td>
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Hybymed® IBPM Plus System

HMS BS
HYBYMED® CLOSED BLOOD SAMPLING SYSTEM

PRODUCT ADVANTAGES

• Closed, needle free in-line blood sampling system
• Added in-line to the arterial blood pressure monitoring set
• Standardizes blood sampling techniques for consistency, accuracy and safety
• Easy, one-hand (un)screwing the reservoir cap
• Sampling of undiluted blood
• Easy Flush

TECHNICAL SPECIFICATION

• 2 ml reservoir
• A closed stopcock, integrated with a Swabbable Luer Activated Valve

PATIENT & USER BENEFIT

• Reduces blood waste
• Minimizes the risk of IV line contamination and protects patient from exposure to bloodstream infections
• Protects hospital staff from unnecessary exposure to blood
HYBYMED® CLOSED BLOOD SAMPLING COMPONENTS

RESERVOIR

• 2 ml reservoir can be mounted directly on a contact board
• Simple unscrewing the cap of reservoir enables the user to draw exact clearing volume of captured blood through IV line into the reservoir and enhances patient’s safety

SAMPLING SITE

• Single in-line sampling site
• A closed stopcock, integrated with a Swabbable Luer Activated Valve, allowing for maintenance of a fully closed system through the entire use of the stopcock, as well as eliminating needle stick injuries when using a stopcock
• Needle free connection provides safety for health care personal and patients by preventing needle-stick injuries and contamination
• Closed system - automatic closure after usage, preventing exposure of the fluid path to the atmosphere
• Swabbable surface enabling aseptic administration and sampling

QUALITY

Hybymed® IBPM Plus system

HMS BS with HMT23
HYBYMED® SINGLE PRESSURE MONITORING KIT WITH CLOSED BLOOD SAMPLING

DESCRIPTION:

- Hybymed® pressure transducer HMT23 with 3 ml/h flush device and 4-way stopcock
- Hybymed® closed blood sampling system, 2 ml reservoir
- One sampling site
- Macro administration set: X = 150 cm (60’’)
- Pressure tubes:
  A = 15 cm (6’’)
  B = 170 cm (67’’)
  C = 30 cm (12’’)

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<tr>
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<tr>
<td>HMS BS 1 B4 23TT R303</td>
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</tbody>
</table>
**DESCRIPTION:**

- Two Hybymed® pressure transducers HMT23 with 3 ml/h flush device and 4-way stopcock
- Hybymed® closed blood sampling system, 2 ml reservoir
- One sampling site
- Macro administration set: X = 150 cm (60’’), Y = 25cm (10’’)
- Pressure tubes:
  - A = 15 cm (6’’)
  - B = 170 cm (67’’)
  - C = 30 cm (12’’)
  - D = 170 cm (67’’)
  - E = 30 cm (12’’)
- One additional 4-way stopcock

<table>
<thead>
<tr>
<th>MODEL</th>
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<tr>
<td>HMS BS 2 E5 23TT X303</td>
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</table>
DESCRIPTION:

- Three Hybymed® pressure transducers HMT23 with 3 ml/h flush device and 4-way stopcock
- Hybymed® closed blood sampling system, 2 ml reservoir
- One sampling site
- Macro administration set:
  \[X = 150 \text{ cm (60'')}, \ Y = 25 \text{ cm (10'')}\]
- Pressure tubes:
  \[A = 15 \text{ cm (6'')}, \ B = 170 \text{ cm (67'')}, \ C = 30 \text{ cm (12'')}, \ D = 170 \text{ cm (67'')}, \ E = 30 \text{ cm (12'')}, \ F = 170 \text{ cm (67'')}, \ G = 30 \text{ cm (12'')}\]
- Two additional 4-way stopcocks

<table>
<thead>
<tr>
<th>MODEL</th>
<th>REF</th>
<th>MPQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMS BS 3 F3 23TT X303</td>
<td>51046021</td>
<td>10</td>
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</tbody>
</table>
**DESCRIPTION:**

- Four Hybymed® pressure transducers HMT23 with 3 ml/h flush device and 4-way stopcock
- Hybymed® closed blood sampling system, 2 ml reservoir
- One sampling site
- Macro administration set:
  - X = 150 cm (60’’), Y = 25 cm (10’’)
- Pressure tubes:
  - A = 15 cm (6’’)
  - B = 170 cm (67’’)
  - C = 30 cm (12’’)
  - D = 170 cm (67’’)
  - E = 30 cm (12’’)
  - F = 170 cm (67’’)
  - G = 30 cm (12’’)
  - H = 170 cm (67’’)
  - I = 30 cm (12’’)
- Three additional 4-way stopcocks

<table>
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<tr>
<th>MODEL</th>
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<tbody>
<tr>
<td>HMS BS 4 H4 23TT X303</td>
<td>50520021</td>
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**DESCRIPTION:**

- Hybymed® pressure transducer HMT23 with 30 ml/h flush device and 4-way stopcock
- Hybymed® closed blood sampling system, 2 ml reservoir
- One sampling site
- Pressure tubes:
  - A = 15 cm (6”)
  - B = 170 cm (67”)
  - C = 30 cm (12”)
- Two additional 4-way stopcocks

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<tr>
<th>MODEL</th>
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<tbody>
<tr>
<td>HMS BS N K4 23TT R330</td>
<td>51047021</td>
<td>20</td>
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</tbody>
</table>
DESCRIPTION:

• Hybymed® closed blood sampling system, 2 ml reservoir
• One sampling site
• Pressure tubes:
  A = 15 cm (6”)
  B = 170 cm (67”)
  C = 30 cm (12”)
• Compatible with various types of pressure transducers available on the market

<table>
<thead>
<tr>
<th>MODEL</th>
<th>REF</th>
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</tr>
</thead>
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<tr>
<td>HMS BS K2 R102TT R1E2</td>
<td>50468021</td>
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</table>
Hybymed® Boards and Cables

HMT20 BM, HMAH AND HMACMT
HYBYMED® CONTACT BOARDS, HOLDERS
AND MONITOR CABLES

**DUMMY TRANSDUCER**
- Protects unused port on the contact board

**CONTACT BOARDS**
- Two- or four-fold reusable contact board
- Golden plated contacts
- Connecting cable:
  - 300 cm cable with one to four monitor specific connectors
  - 30 cm cable with general purpose push pull metal connector
- The contact board is used simultaneously:
  - as organizing board for Hybymed® disposable transducers
  - as electrical connecting element between a transducer and a monitor connecting cable
HYBYMED® HOLDERS & HYBYMED® MONITOR CABLES

**HYBYMED® HOLDERS**

- Basic holder:
  - contact board can be mounted on a holder in vertical or horizontal position

- Advanced holders:
  - solid metal construction
  - special developed clamping fixtures to adjust the position on the contact board in all direction
  - screw clamp and spherical joint

- A contact board is easily placed on or removed from the holder with a click and slide move

**HYBYMED® MONITOR CABLES**

- Cables are fitted with one to four monitor connectors to monitor inputs and with a push-pull connector to the contact board push-pull connector

- Monitor connectors are monitor specific

- Standard and custom-made cable length
## HMT20 BM

**HYBYMED® CONTACT BOARDS WITH INTEGRATED MONITOR CABLE**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>REF</th>
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<tbody>
<tr>
<td>2-fold contact board with 300 cm integrated cable for HP monitor</td>
<td>HMT20 BM2 300HP</td>
<td>51019021</td>
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<tr>
<td>2-fold contact board with 300 cm integrated cable for Siemens monitor</td>
<td>HMT20 BM2 300SI 10</td>
<td>51017021</td>
<td>1</td>
</tr>
<tr>
<td>2-fold contact board with 300 cm integrated cable for Marquette monitor</td>
<td>HMT20 BM2 300MQ</td>
<td>51018021</td>
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<tr>
<td>2-fold contact board with 300 cm integrated cable for Biolight monitor</td>
<td>HMT20 BM2 300BL 04</td>
<td>51058021</td>
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<tr>
<td>2-fold contact board with 300 cm integrated cable for Honeywell monitor</td>
<td>HMT20 BM2 300HW 10</td>
<td>51060021</td>
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<tr>
<td>2-fold contact board with 300 cm integrated cable for Nihon Kohden monitor</td>
<td>HMT20 BM2 300NK 14ID</td>
<td>51061021</td>
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<tr>
<td>2-fold contact board with 300 cm integrated cable for Welch Allyn, Spacelabs monitor</td>
<td>HMT20 BM2 300WA 06</td>
<td>51082021</td>
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<tr>
<td>2-fold contact board with 300 cm integrated cable for Datex, GE monitor</td>
<td>HMT20 BM2 300DX 10</td>
<td>51081021</td>
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### HYBYMED® CONTACT BOARDS WITH INTEGRATED MONITOR CABLE

<table>
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<tbody>
<tr>
<td>4-fold contact board with 300 cm integrated cable for Siemens monitor</td>
<td>HMT20 BM4 300SI 10</td>
<td>51020021</td>
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<tr>
<td>4-fold contact board with 300 cm integrated cable for Marquette monitor</td>
<td>HMT20 BM4 300MQ 11</td>
<td>51057021</td>
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<tr>
<td>4-fold contact board with 300 cm integrated cable for HP monitor</td>
<td>HMT20 BM4 300HP 12</td>
<td>51039021</td>
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<tr>
<td>4-fold contact board with 300 cm integrated cable for Welch Allyn monitor</td>
<td>HMT20 BM4 300WA 06</td>
<td>51080021</td>
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</table>

One to four Contact boards with cables for other monitors are available upon request.
Hybymed® IBPM/IBPM Plus system

**HMT20 BM**
**HYBYMED® CONTACT BOARDS**

<table>
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<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>Hybymed® 2-fold contact board</td>
<td>HMT20 BM2</td>
<td>50053021M</td>
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<tr>
<td>30 cm general purpose push-pull metal connector</td>
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<table>
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<tbody>
<tr>
<td>Hybymed® 4-fold contact board</td>
<td>HMT20 BM4</td>
<td>50054021M</td>
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<tr>
<td>30 cm general purpose push-pull metal connector</td>
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**ACCESSORIES**

**HYBYMED® HOLDERS AND DUMMY TRANSDUCERS**

<table>
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<th>DESCRIPTION</th>
<th>MODEL</th>
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<tbody>
<tr>
<td>Hybymed® Holder for contact board</td>
<td>HMAH CB</td>
<td>50258021</td>
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<tbody>
<tr>
<td>Hybymed® CBS holder for CBS reservoir. To be attached directly on the contact board.</td>
<td>HMAH BSM</td>
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<thead>
<tr>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>Hybymed® dummy transducer for contact board</td>
<td>HMT20 DUMMY</td>
<td>50361021</td>
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<tr>
<td>IMAGE</td>
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<tr>
<td><img src="image1.png" alt="Hybymed® monitor cable with metal push-pull connector for Marquette monitor" /></td>
<td>Hybymed® monitor cable with metal push-pull connector for Marquette monitor</td>
<td>HMACMT 02MQ 300</td>
<td>50245021M</td>
</tr>
<tr>
<td><img src="image2.png" alt="Hybymed® monitor cable with metal push-pull connector for Datex monitor" /></td>
<td>Hybymed® monitor cable with metal push-pull connector for Datex monitor</td>
<td>HMACMT 02DX 300</td>
<td>50249021M</td>
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<tr>
<td><img src="image3.png" alt="Hybymed® monitor cable with metal push-pull connector for HP monitor" /></td>
<td>Hybymed® monitor cable with metal push-pull connector for HP monitor</td>
<td>HMACMT 02HP 300</td>
<td>50243021M</td>
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<tr>
<td><img src="image4.png" alt="Hybymed® monitor cable with metal push-pull connector for Siemens monitor" /></td>
<td>Hybymed® monitor cable with metal push-pull connector for Siemens monitor</td>
<td>HMACMT 02SI 300 10</td>
<td>50248021M</td>
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</tbody>
</table>

One to four channel monitor cables with metal push-pull connector are available upon request.

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