

The Anybus CompactCom M40 for POWERLINK is a complete communication module which enables your products to communicate on an Ethernet POWERLINK network. The module supports fast communication speeds, making it suitable also for high-end industrial devices.

By implementing the CompactCom concept into your product line, you will have instant access to any other industrial network by simply plugging in another Anybus



### Why worry about networking?

Once you have implemented the Anybus CompactCom concept, you don't have to worry about network upgrades or certifications. HMS takes care of the network maintenance, so you can focus on your products.

### If you need fast POWERLINK communication

The Anybus CompactCom M40 enables fast communication between your device and POWERLINK (process data latency is less than 15  $\mu$ s through the module).

The module comes with an integrated Ethernet hub implemented in the module's NP40 chip and supports multiplexing and PollResponse Chaining. It has a response time of 1 $\mu$ s (time from PollRequest to PollResponse) and a synchronization jitter of max. 1 $\mu$ s.

### Features and benefits

- A complete, interchangeable communication module with connectors.
- Short in-design with free assistance from HMS ensures a fast time to market.
- Pre-certified for network compliance (enables faster network certification).
- Fast data transfer: Up to 1490 bytes of process data in each direction.
- Very low latency <15  $\mu$ s.
- Event-based interface method enables easy to access input and output data at any time.
- Fast, event-based application hardware interfaces: 8/16-bit parallel and high speed SPI. I/O (shift register interface) is also available.
- One hardware platform for all Ethernet versions. Simply download new firmware to enable communication with another network for example PROFINET or EtherCAT.
- Firmware management tool enables easy download via serial connection.
- Clock-synchronous operation.
- Solid security: Mandatory software signatures prevent unauthorized software to be downloaded to the module. Furthermore, encryption is used to prevent illicit copying.

### CompactCom 40-series

The M40 is part of the Anybus CompactCom 40-series — communication products in chip, brick and module formats. These are all built on the Anybus NP40 processor making them especially suitable for modern and demanding industrial applications.



### Innovative mounting

The Anybus module plugs into a CompactFlash™ connector which is integrated onto the host PCB. HMS offers a CompactFlash connector specifically tailored for the CompactCom module.



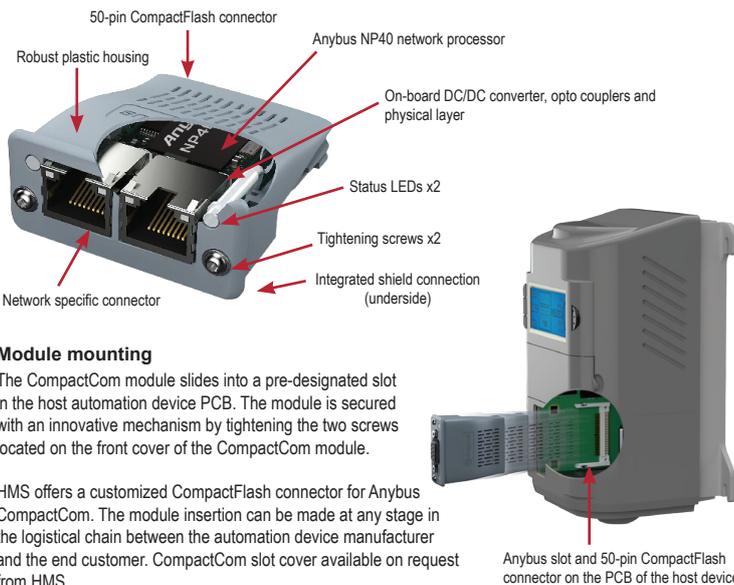
### Best-in-class processor

The M40 is equipped with the best network processor on the market according to independent analyst firm Frost & Sullivan.

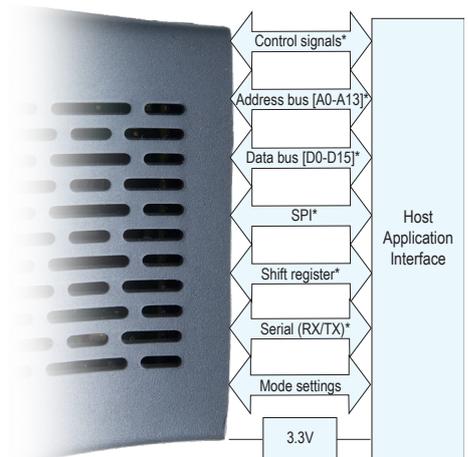
# Technical specifications

Technical Details	
Dimensions (L • W • H)	52•50•22 mm, 2.04•1.97•0.86" 51•37•16 mm, 2.01•4.46•0.63" (modules without housing)
Protection class	IP20
RoHS Compliance	Yes
Galvanically isolated network interface	Yes
Application interfaces	- 8/16-bit parallel (30 ns access) - High speed SPI, baudrate configurable up to 20 MHz - I/O (shift register interface, cyclical update time 82 µs) - UART (for backwards compatibility with 30-series, max 625kbps)
Profile support	Generic
Ethernet features	- Transparent socket interface (40-series technology enables higher throughput) - Support of HTTP forwarding via socket interface - Integrated 2-port hub - IT functions (FTP server, E-mail client, web server with SSI support and JSON functionality)
LED indicator	Integrated on front (with housing), via application interface (without housing). Indicates Module Status and Network Status.
Certifications	
UL, cUL	Yes
Network conformance	Yes
CE - Declaration of Pre-Conformity	
Emission EN 61000-6-4	EN55016-2-3 Radiated emission EN55022 Conducted emission
Immunity EN 61000-6-2	EN61000-4-2 Electrostatic discharge, EN61000-4-3 Radiated immunity, EN61000-4-4 Fast transients/burst, EN61000-4-5 Surge immunity, EN61000-4-6 Conducted immunity.
Electrical Characteristics	
Power requirements	3.3 VDC, +/- 0.15 VDC
Environmental Characteristics	
Operating temp	-40 to 70 °C, -40-158 °F -40 to 85 °C, -40-176 °F (modules without housing)

POWERLINK-specific technical highlights
<b>Integrated HUB.</b>
<b>The module is capable of participating as an isochronous Controlled Node (CN) in EPL networks.</b>
<b>100 Mbit/s, half duplex.</b>
<b>Supports Async MTU size up to 1500 bytes.</b>
<b>Supports Process Data Object (PDO) for real-time data transfer.</b>
<b>Supports a PDO size of 1490 bytes.</b>
<b>Supports static as well as dynamic mapping.</b>
<b>Ring redundancy.</b>
<b>Supports "Generic mode"</b> (The module will forward all object requests >= 0x2001 to the host application making it possible for the host application to implement profiles on its own.)
<b>Sync functionality on POWERLINK (sync signal on SoC).</b>
<b>Firmware update over POWERLINK network.</b>
<b>Supports dynamic process data remapping from the network.</b>
<b>Process Data Objects (PDOs) for I/O exchange and Service Data Object (SDO) for explicit messaging.</b>
<b>Cycle times down to 200 µs.</b>
<b>Support for 57343 ADIs.</b>
<b>Process data sizes up to 1490 bytes.</b>



Block diagram



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