

# CONNECTORS

A LOOK INTO THE PRODUCTS, TECHNOLOGIES  
AND SOLUTIONS SHAPING THE MARKET

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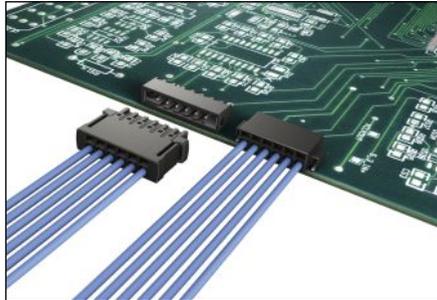
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## PCB connectivity solutions facilitate design, lower assembly costs

PCB designers and manufacturers face multiple challenges. Device makers want more performance for less cost, even smaller or three-dimensional boards so they can shrink their products further. It's all do-able because leading component manufacturers like HARTING continue to deliver new functionality, flexibility and efficiencies in products like these two complementary HARTING innovations: The discrete wire-to-board *har-flexicon*<sup>®</sup> series with fast connection technology and the in-box *har-flex*<sup>®</sup> lineup for board-to-board and cable-to-board connectivity. Together, they cover the complete spectrum from device connectivity and internal device wiring to board-to-board connectors. Both make possible greater PCB performance, density and design flexibility while lowering assembly time and costs for a lower all-in cost of the board.

*har-flexicon*<sup>®</sup>

### *har-flexicon*<sup>®</sup> promotes PCB miniaturization

HARTING *har-flexicon*<sup>®</sup> connectors and terminal blocks fall in two main size groupings:

- 1) the traditional 3.5 mm–5.08 mm pitches with standard contact spacing and screw or push-in (spring cage) termination and SMC (Surface Mount Compatible) termination to the board;
- 2) filling the evolving niche for finer pitch, a 2.54 mm pitch connector and terminal blocks with push-in termination and 2–12 contacts and a 1.27 mm pitch connector with IDC termination that caters to the radical miniaturization of PCB termination, both pitch sizes being full SMT design.

The key differentiator for all *har-flexicon*<sup>®</sup> components is user-friendly handling and robust connectivity whatever the termination technology. IDC, for example, is simple, fast, reliable, tool-free termination for single wires. The 1.27 and 2.54 sizes include a robust hold down to assure secure fixing to the board, a primary concern for the designer specifying SMT connectors. The 2.54 also includes a positive latching system between male and female components. *har-flexicon*<sup>®</sup> device side connectors in sizes 3.5 mm–5.08 mm can be directly wired to create a horizontal or vertical terminal block with high vibration and shock resistance. If high current is required,

the 5.08 is rated up to 17.5A for the terminal block and 15A for the two-piece connector. The SMC (through hole) termination connectors come in a box with dry bag (MSL 2a) while the full SMT-ready connectors are delivered in tape and reel packaging (MSL 1). For automated assembly, PCB makers can place and reflow *har-flexicon*<sup>®</sup> device side components along with all other board components – capacitors, resistors, integrated circuits, etc. – in a single SMT or SMD production run as opposed to separate steps using reflow and wave solder processes.

### *har-flex*<sup>®</sup> optimizes PCB space utilization

HARTING *har-flex*<sup>®</sup> connectors are space-saving and economical, suitable even for the smaller production runs typical of today's industrial devices. With *har-flex*<sup>®</sup>, designers no longer are limited to connecting PCBs to one another using a backplane, a rigid format difficult to adapt to unconventional device layouts. *har-flex*<sup>®</sup> allows them to create different combinations of mezzanine and mother-to-daughtercard applications. The universally compatible *har-flex*<sup>®</sup> board-to-board family comes in straight and angled versions as well as pre-assembled cables so designers can optimize utilization of board space whatever the height, spacing or processing requirements. *har-flex*<sup>®</sup> connectors offer advantages like increased packaging density based on a 1.27 mm grid and SMT termination for manufacturing efficiency along with continuous scalability by even number of contacts from six to 100. Mezzanine card connectivity gives PCB designers the flexibility to think three-dimensionally rather than two-dimensional about board architecture. Mezzanine card stacking can serve as an extension of the host daughtercard, creating more flexibility in the design of the end product or as a low-cost strategy to address machine obsolescence or the need to expand capacity. HARTING *har-flex*<sup>®</sup> connectors can be used in mezzanine applications to create PCB separation distances between 8 mm and 13.8 mm, achieved with combinations of four different connector heights.

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Relax, tomorrow has already been tested.  
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**Reduce the number of needed components and save space.**

HARTING, first established in 1945, delivers unrivaled reliability, efficiency, performance and innovation.

With HARTING you have a partner who ensures you dependable connections that stand the test of time.



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