

HARWIN

WORLD - CLASS PERFORMANCE

High-Reliability Connectors | Industry Standard Connectors
Board Level EMC Shielding | PCB Hardware

22/1/2018

HARWIN

EZ-Boardware products



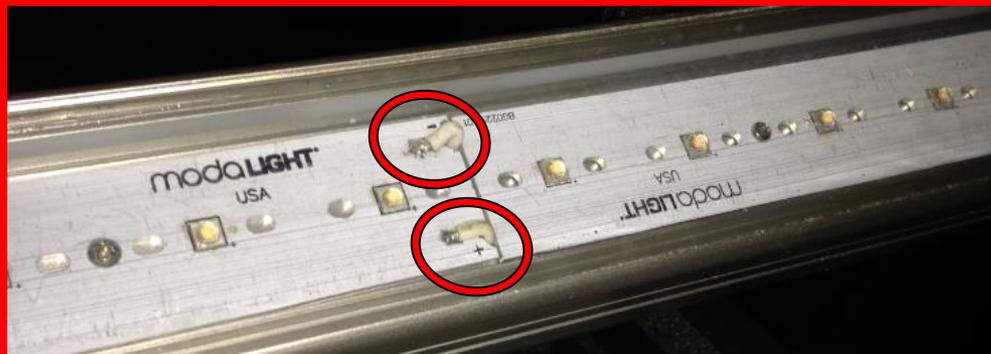
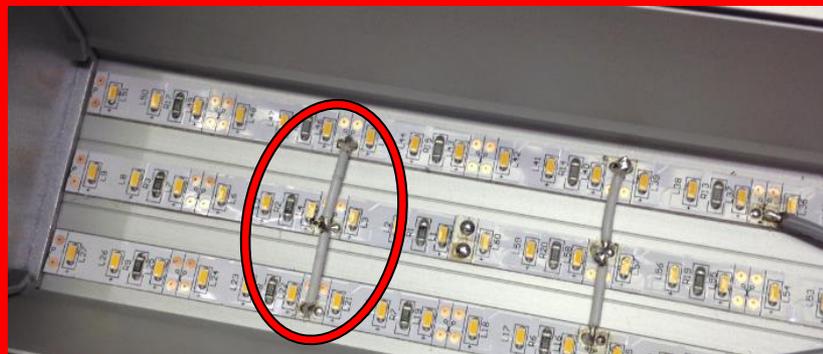
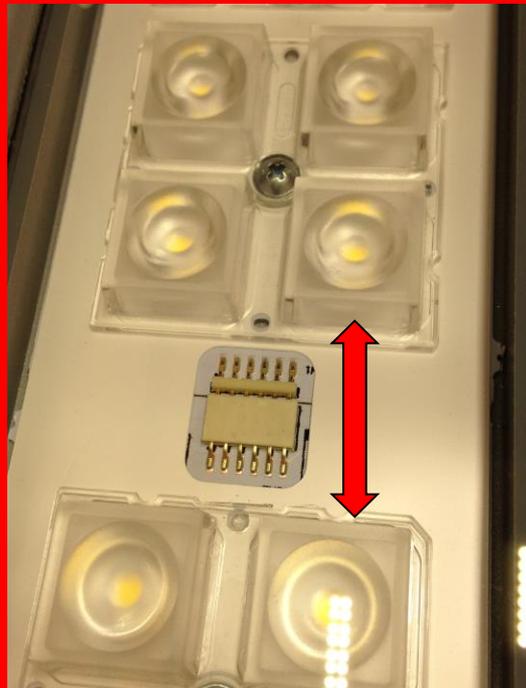
>Focus on high volume NPI's that reduce design costs

Harwin LED clip and bars

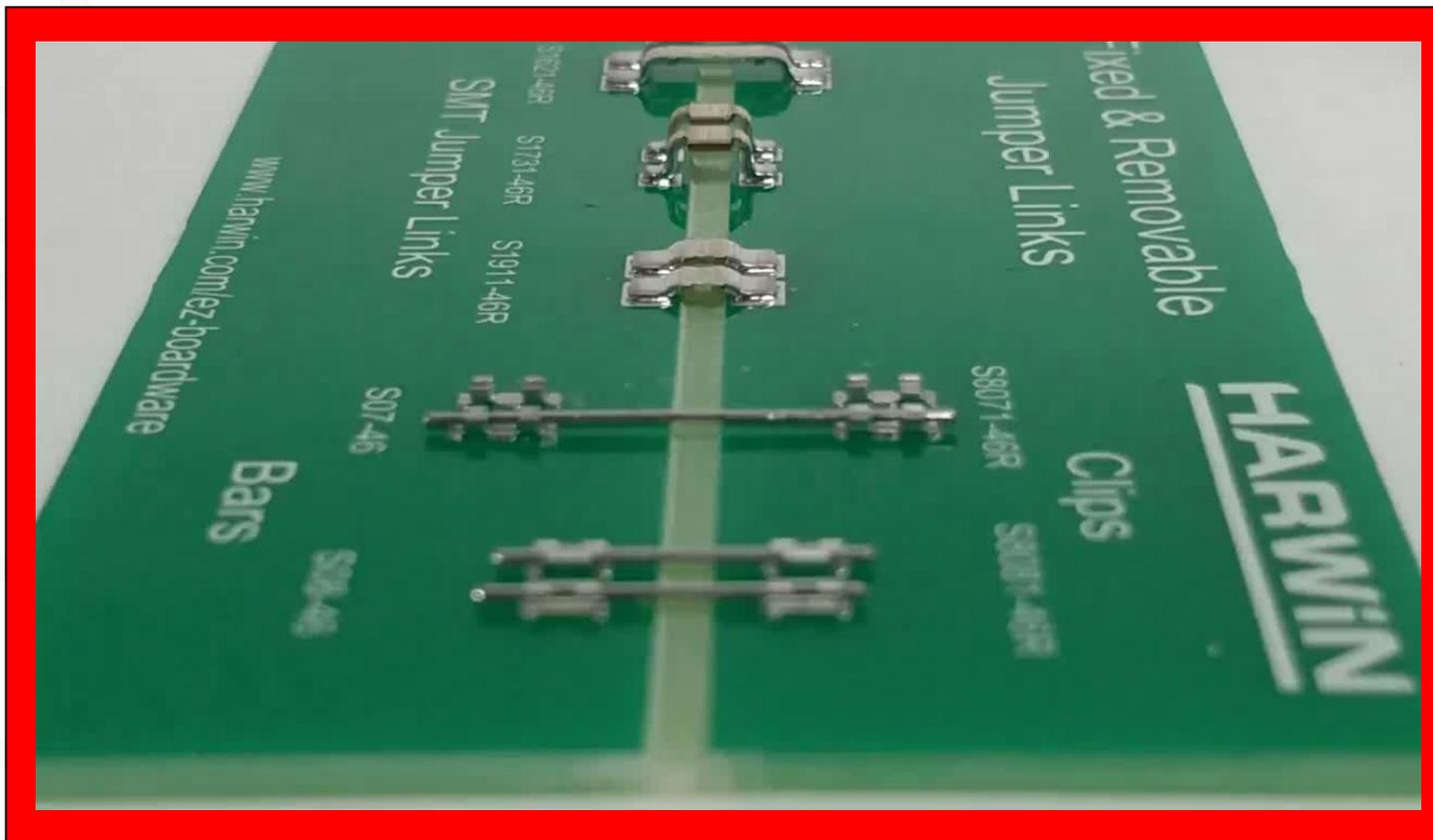
Modular design strategies



Competitors



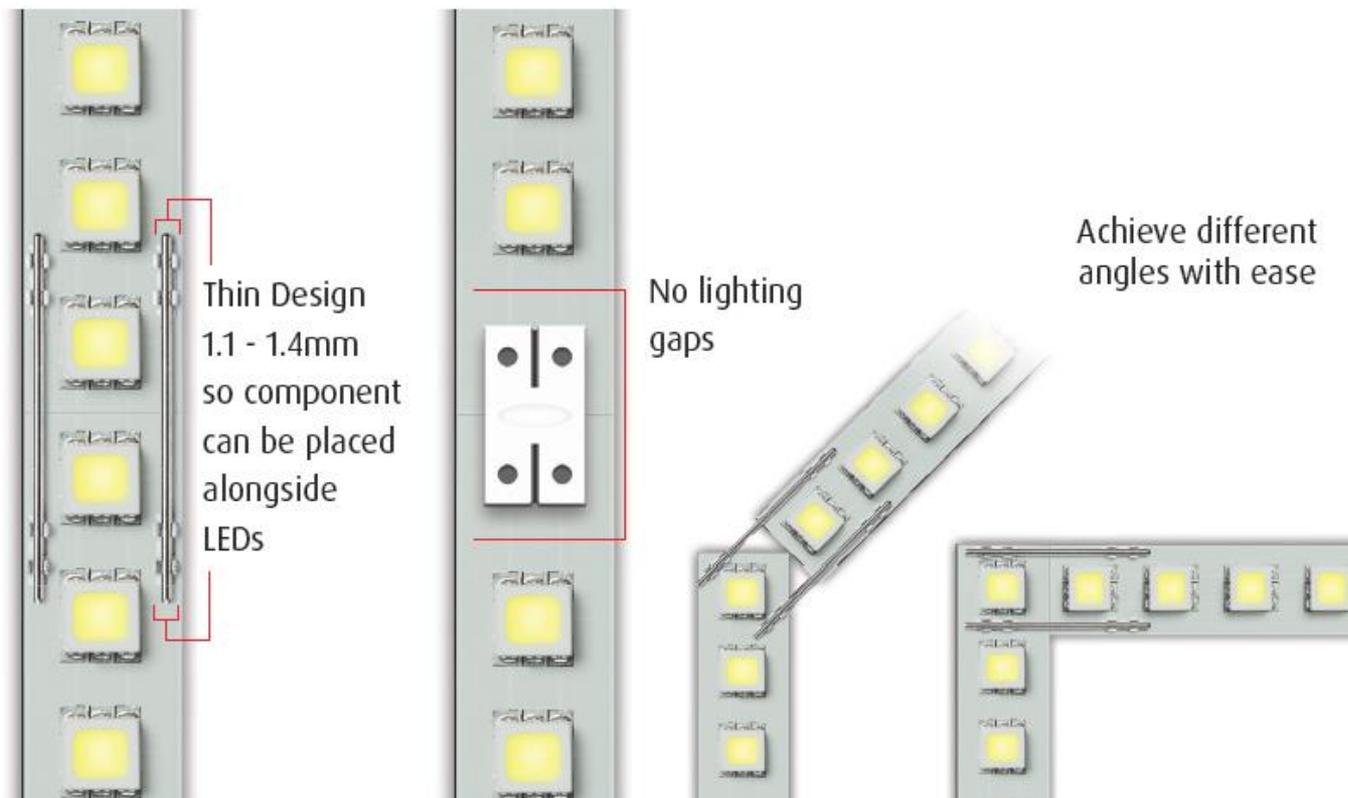
The Harwin "Clip and Bar" removable jump links



<https://www.youtube.com/watch?v=9MI3bKOh10g>



Low profile - **1mm / 0.84mm** height to minimise shadow effects



Clip Connectors Made for the LED Professional



Eliminate the need and cost of hand soldering



Eliminate the need for cutting wires



Design tips are available from Harwin to achieve maximum current flow for your design



Clips supplied in tape and reel packaging with pick and place areas to automate production and to reduce costs



New flyer / email PDF to help you!

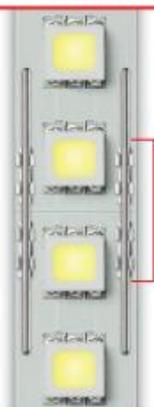
Low profile - 1mm / 0.84mm height to minimise shadow effects



Thin Design 1.1 - 1.4mm so component can be placed alongside LEDs



No lighting gaps caused by the difference in distance of LED positioning when using clip connectors in modular designs

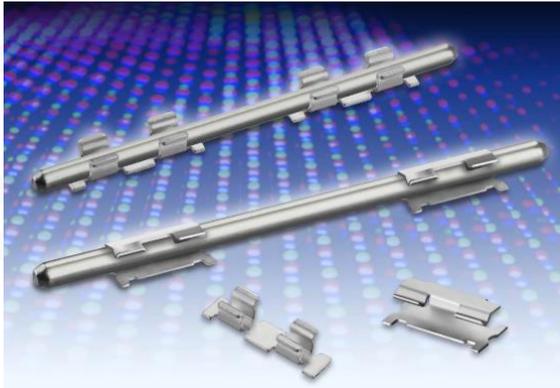


Achieve best current level rating using our S8071-46R and S07-46 (short bar) combination alongside placing clips close to the edge of the PCB



Achieve different angles with ease

Test report



HARWIN

Harwin test report summary

Report 1459 Current testing of the Harwin "Clip and Bar" removable jump link connectors

Report number: 1459
Revision: 1
DUT: S8071-66K, S8081-66K, S07-66, S08-66.

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Report 1459

Current testing of the Harwin "Clip and Bar" removable jump links

1. Introduction

1.1. Scope

The Harwin "Clip and Bar" removable jump link connectors are mainly aimed at the LED market for the use with LED PCB strips.

A big problem for manufacturers of LED lighting is the temperature rise that can be caused by current flow in the connectors between the PCBs.

APCB will dissipate heat from its components, hence any current rating on a component should relate to the real world scenario of being soldered on a PCB.

This document explains current testing of the Harwin "Clip and Bar" removable jump link connectors that was performed on two different PCB strips that were purchased from K5 components. They were of a single sided PCB, and an aluminium backed PCB. Both of these types of PCB are commonly used in the LED lighting industry.

"WOTF" - it is common in the industry that PCBs are attached to metal fixings for direction of light. This would lead further in dissipating heat, hence this would enable even more current to flow through the Harwin LED "Clip and Bars" than explained in this test.

1.2. Summary

The Harwin "Clip and Bars" produced results from 3 amps to 14 amps depending on the setup. In summary of these results, this type of connector should be considered for almost any application in the LED strip lighting industry. See conclusion for further details.

1.3. Publicity of this document

This document is for public distribution.

1.4. Further references

A brief summary of this report is available on the Harwin website www.harwin.com under test report number R10550X.

2. Test setup

2.1. Facilities

Tests were recorded in the QA lab of Harwin PLC UK.

2.2. Device Under Test (DUT)

Four separate Harwin components were tested. These were the:

S8071-66K - shown in figure 1

S8081-66K - shown in figure 2

S07-66 - shown in figure 3

S08-66 - shown in figure 4

The specifications and technical drawings as per the 1st of December 2016 are shown in Appendices A1, A2, and A3.

All components are taken from batch number 754715.

Harwin North America S: +1 602 890 5325 F: +1 602 890 5326
Harwin Europe S: +44 (0) 21 6231 6545 F: +44 (0) 21 6231 6546
Harwin Asia S: +61 8 779 4999 F: +61 8 779 4998
Issue 1 | Batch 19/12/2016 | (C) Harwin 2016 | Page 3 of 20

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Report 1459

Current testing of the Harwin "Clip and Bar" removable jump links

2.3. Test fixture PCBs

The DUTs were attached to two different PCBs. They are the following:

HARWIN

Report 1459

Current testing of the Harwin "Clip and Bar" removable jump links

Document revision summary for report 1459

Revision	Date approved	Description
1	19/12/2016	First release

Tests:

- DC current VS temperature

Report author: Robert John Webber

Test engineer: Robert John Webber

Checked by: Sam Bennett

Contact: rwebber@harwin.co.uk

Date: 19/12/2016.

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Report 1459

Current testing of the Harwin "Clip and Bar" removable jump links



Figure 1 - The S8071-66K Clip



Figure 2 - The S8081-66K Clip



Figure 3 - The S07-66 Bar



Figure 4 - The S08-66 Bar

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Report 1459

Current testing of the Harwin "Clip and Bar" removable jump links

2.4. Other test equipment

The fixtures are used in the test set-up as shown in Table 1.

Markets

Designers in all industries can face difficulties in connecting PCB's in parallel. The Lighting Industry in particular chose a number of costly ways in mating LED arrays.

architectural lighting - Display Lighting - Lighting Assemblies - Industrial Assembly

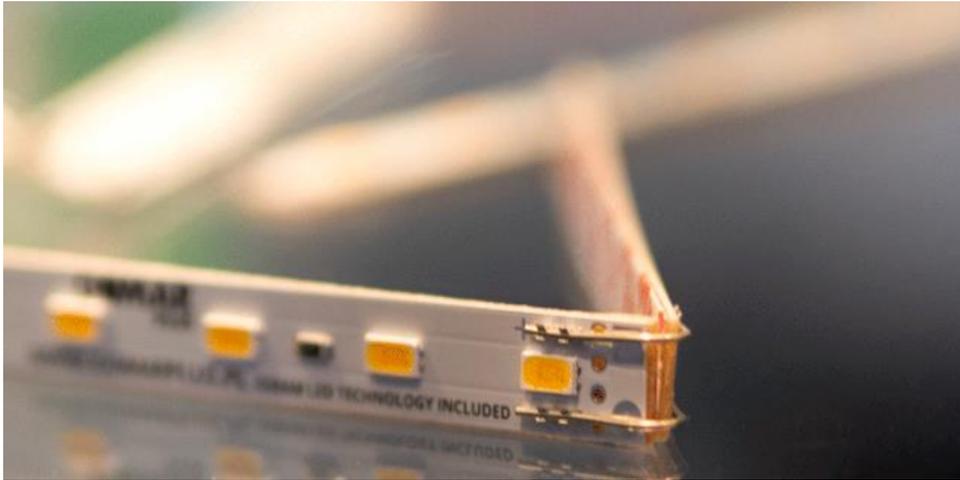


LED Profiles
system for
LED lighting
producer www.klusdesign.eu

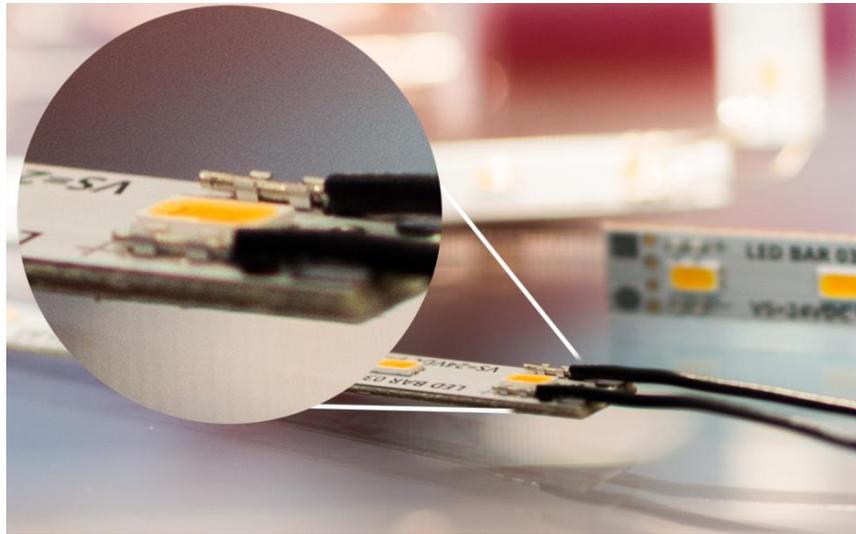
What about Curved LED displays?



Use of wire:



Also solves the end terminal issue



Marketing Activity

Any questions so far?



ADD TO CALENDAR



15 - 16 NOVEMBER 2017 | EXCEL, LONDON





Sycamore Contact



A socket aimed at the sensor market



PCB Mounted Sensor modules



Often placed in sockets





A real world example

> The Honeywell carbon Monoxide sensor

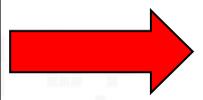


Honeywell Carbon Monoxide sensor

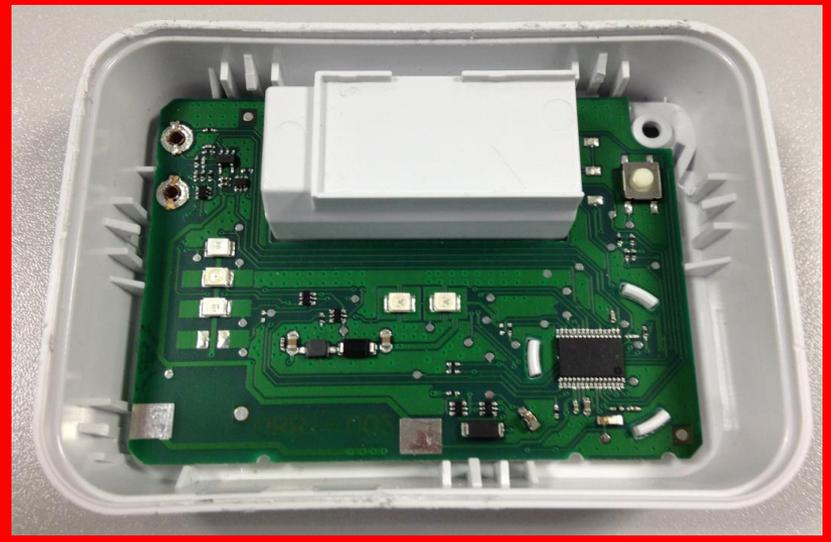
Input



Carbon Monoxide sensor



Amplification/processing



Output



Speaker alarm





Honeywell Carbon Monoxide sensor

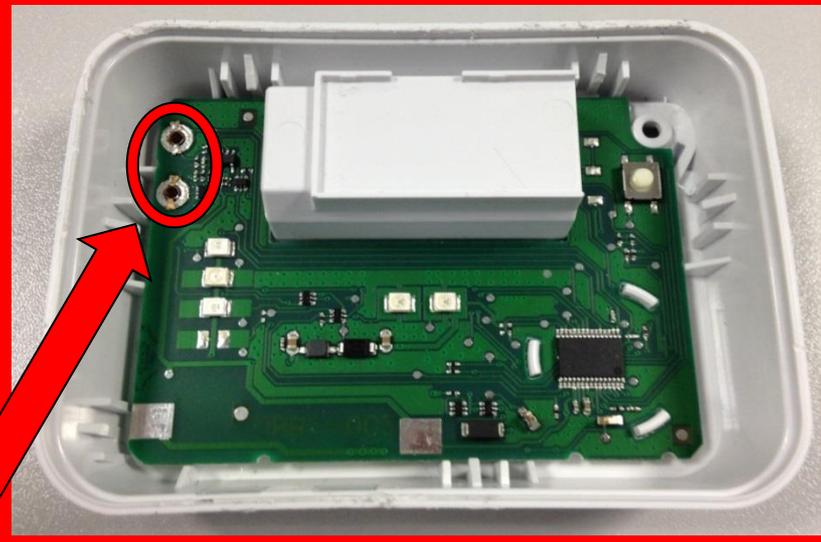
Input



Carbon Monoxide sensor



Amplification/processing

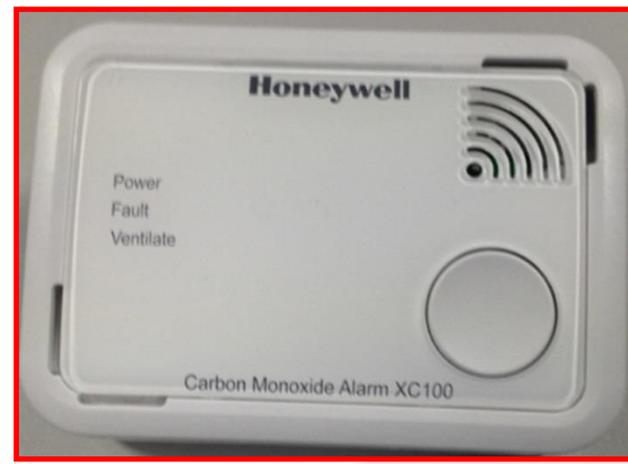


Output



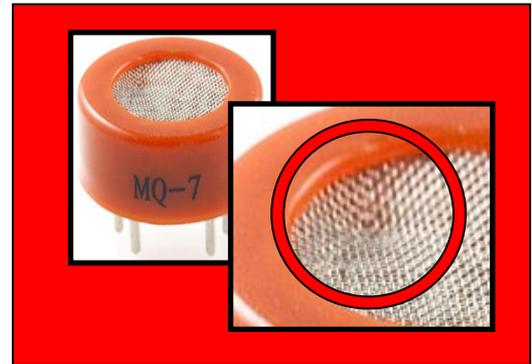
Speaker alarm

Business opportunity:



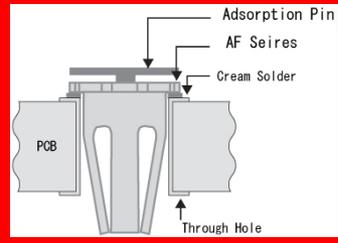
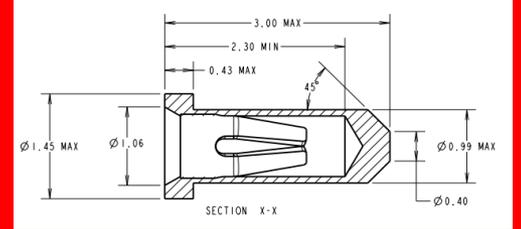


Why use a socket?



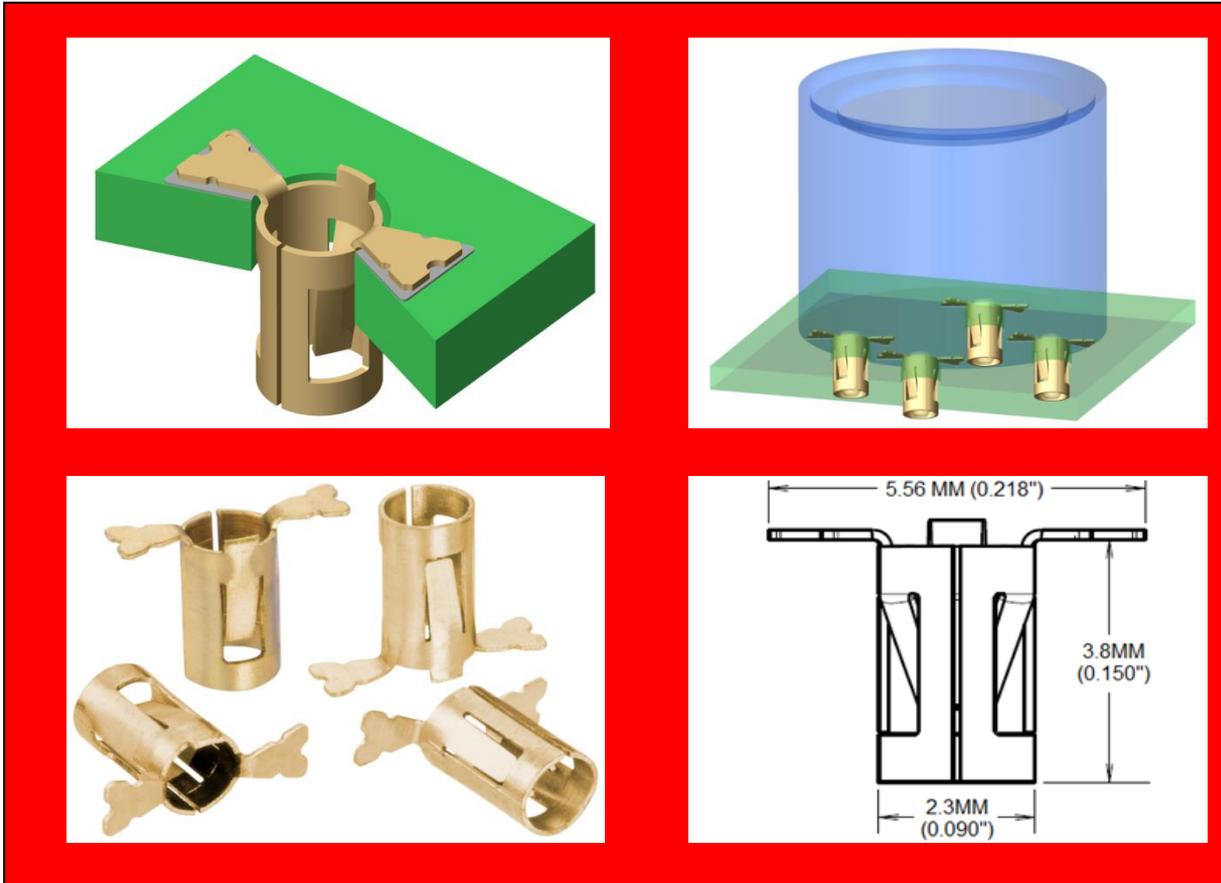


Competition





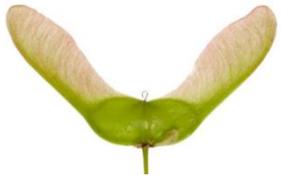
The Sycamore contact



Through hole PCB mounted socket
– to retain pins

> *Patent pending*

HARWIN

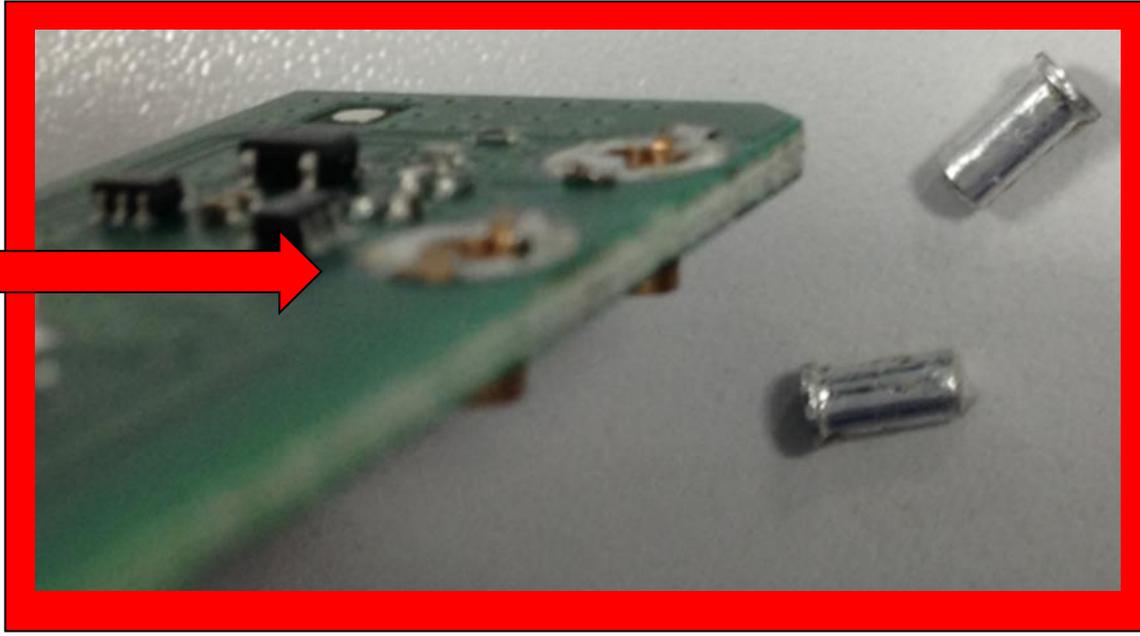
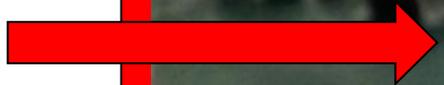




Honeywell Carbon Monoxide sensor



Business opportunity:
The sycamore
contacts are drop in
replacements



Surface Mount PCB Sockets

Markets



HARWIN

The requirement for single connections or high-reliability odd-form modules can appear in any application, and the SYCAMORE Contact range from Harwin has the variety required to meet these needs.

- Fire and Security
- Gas Detection
- Home Automation
- Modular Systems
- Handheld Equipment

ARCHER

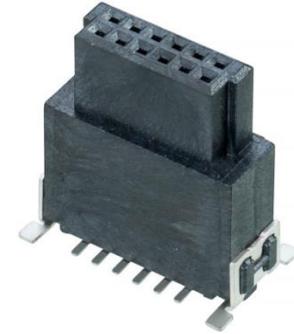
KONTROL



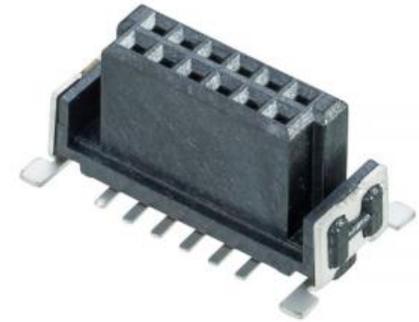
Robust Board-to-Board Connectors for
Industrial Applications

Archer Kontrol

What is it



>A new mid range of connectors



Archer Kontrol

Why have we introduced it

- >Customers like Gecko, Datamate, and M300.*
- >But price makes it impossible to consider.*
- >The existing Archer range does not have the appropriate level of reliability or robustness of our high reliability range which is what attracts customers to these Harwin products.*
- >Archer Kontrol will solve this.*

Harwin's existing connector range:

M
2
0

M
2
2

A
R
C
H
E
R

STD Ind

ARCHER
KONTROL

M
3
0
0

D
A
T
A
M
A
T
E

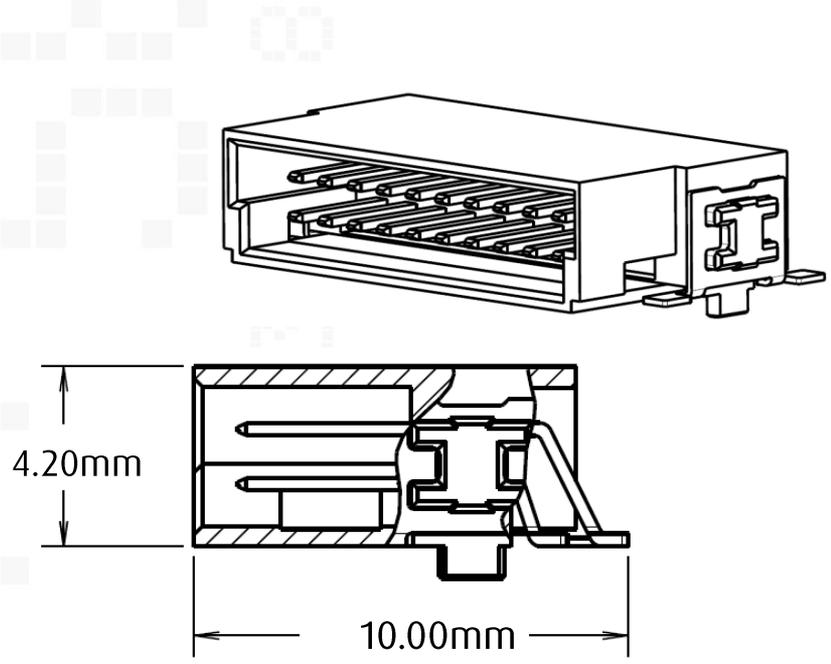
G
E
C
K
O

Hi Rel

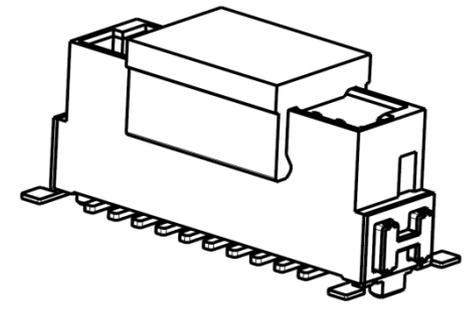
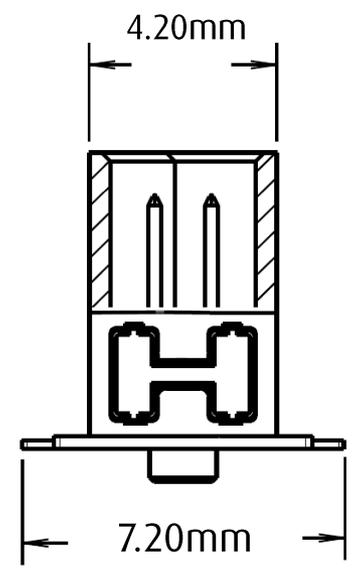
Durability / Reliability

Price

Archer Kontrol Horizontal and Vertical

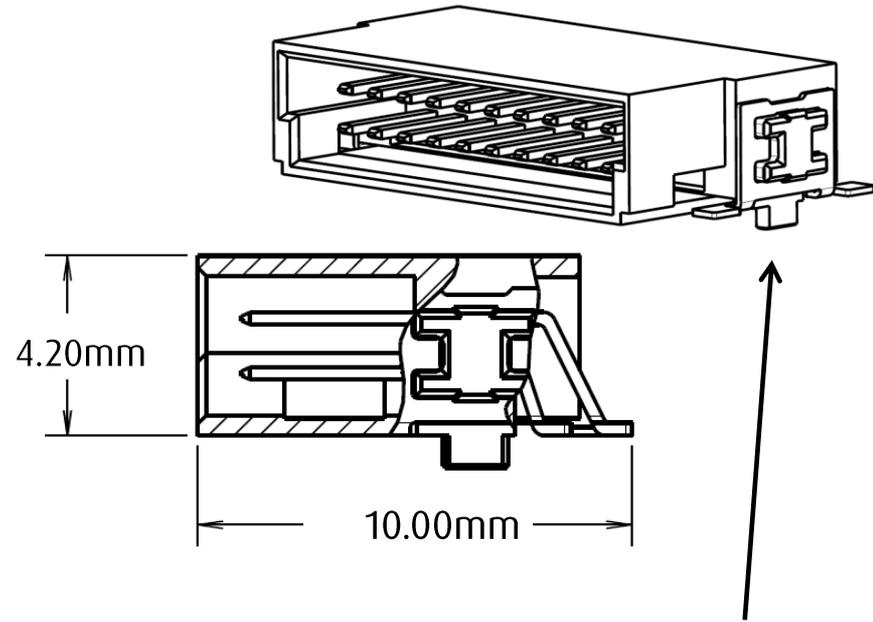
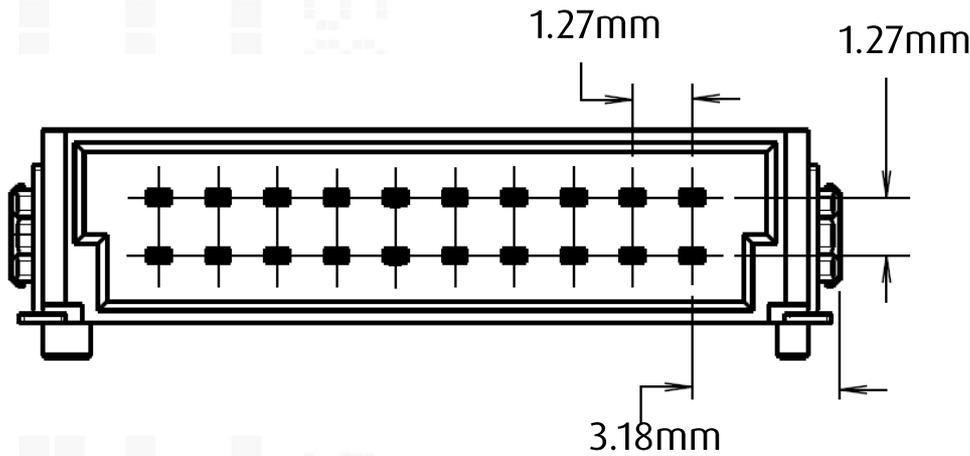


1 size

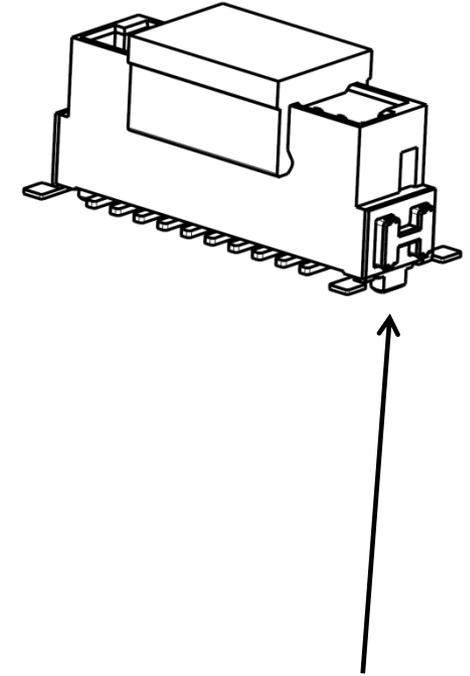
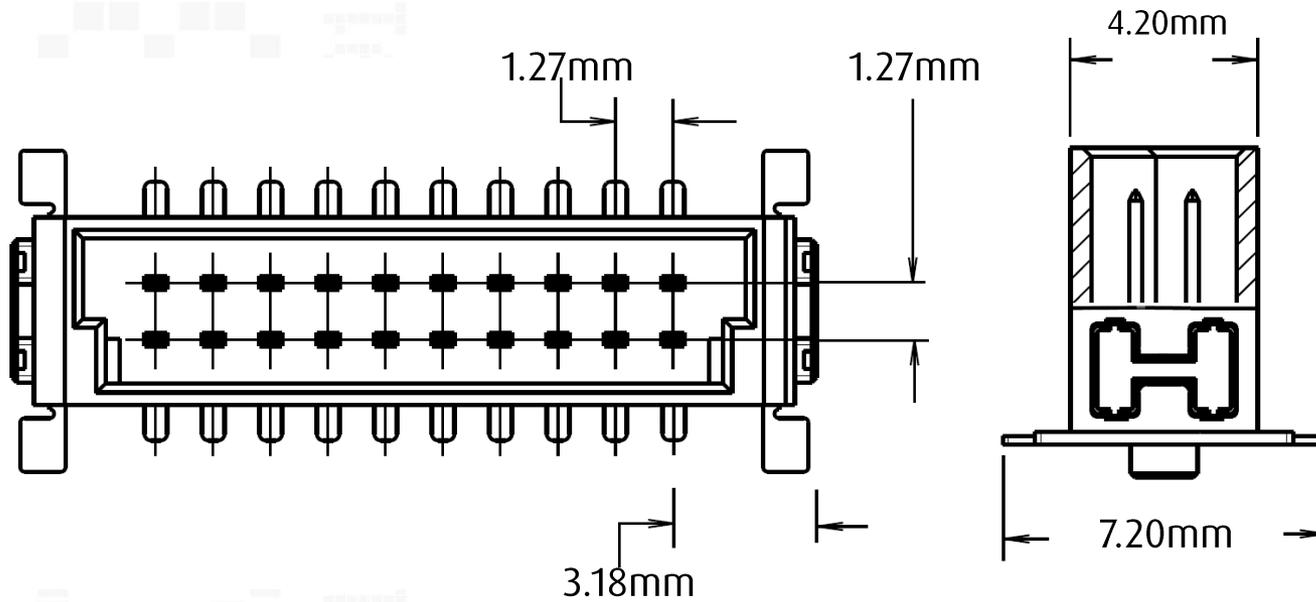


3 sizes

Archer Kontrol Compact Size



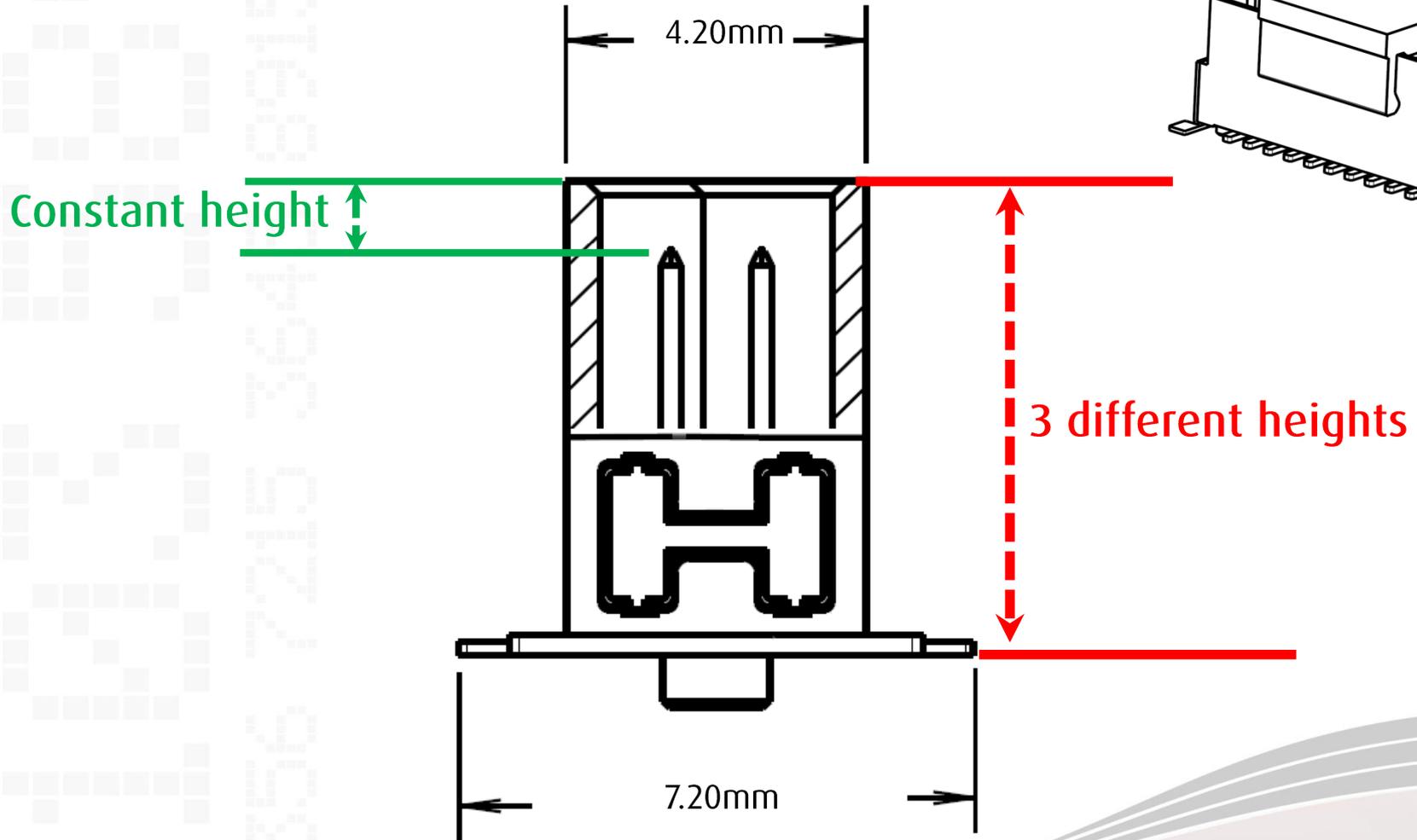
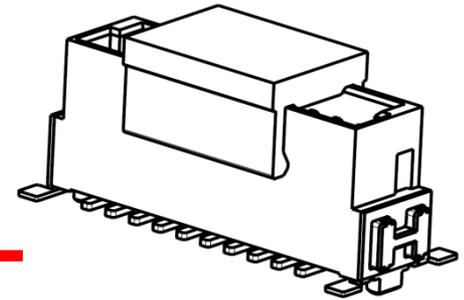
Archer Kontrol Compact Size



Locating pegs
(Assists in manufacture)



Archer Kontrol Vertical Model Range



Archer Kontrol Vertical Model Range



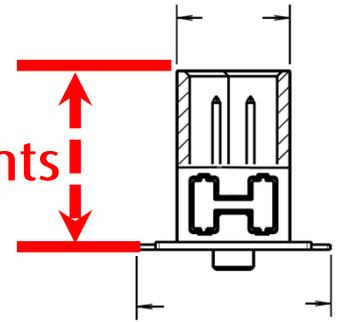
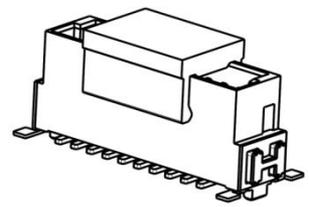
Female: 6.25mm
Male: 6.75mm



Female: 9.05mm
Male: 8.25mm



Female: 13.65mm
Male: 9.85mm



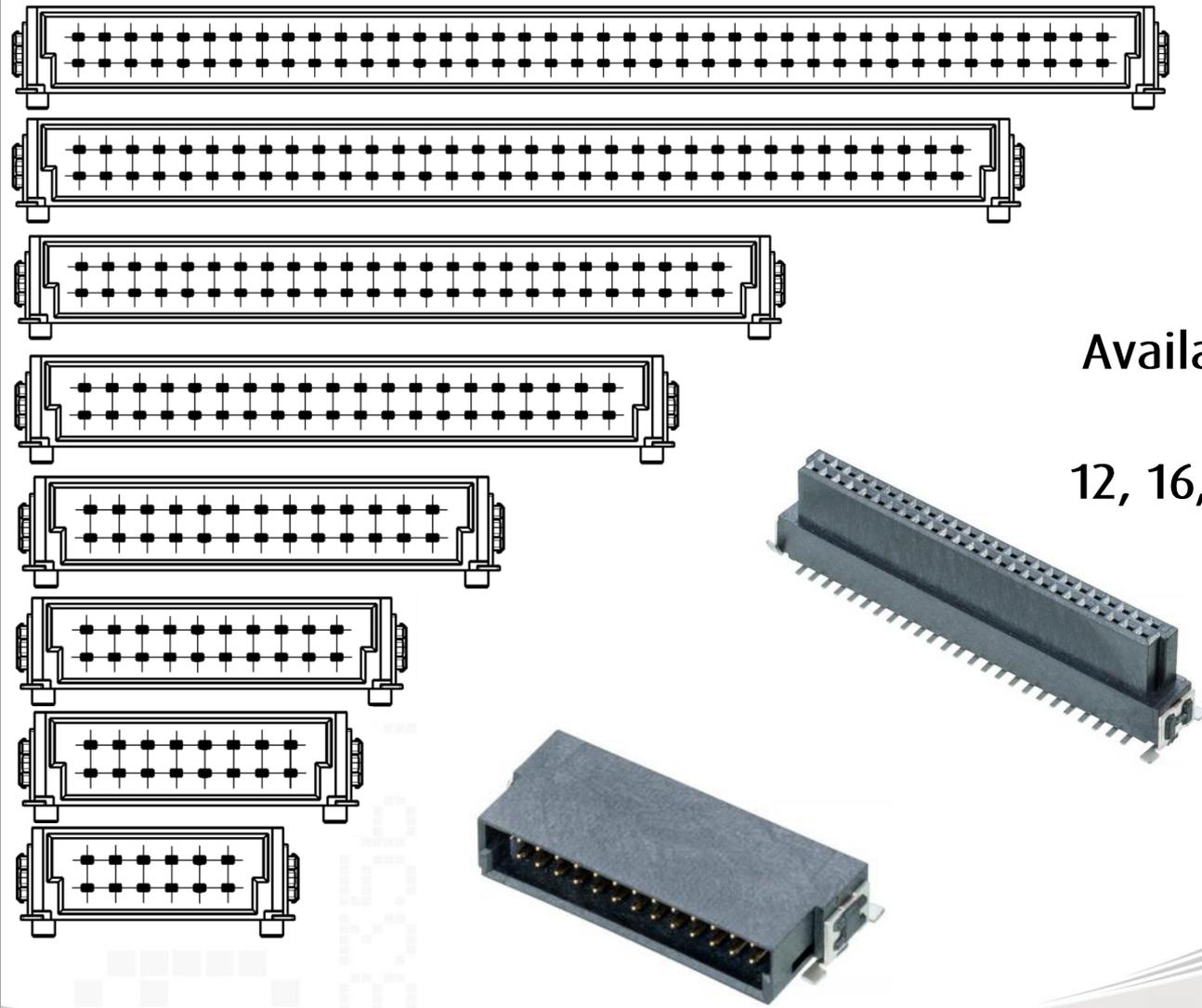
9 different Combinations available from 8.0mm to 18.5mm

Archer Kontrol Height combinations

		FEMALE			
		VERTICAL SMT			HORIZONTAL SMT
		6.25mm HEIGHT	9.05mm HEIGHT	13.65mm HEIGHT	
MALE	VERTICAL SMT	<p>6.75mm HEIGHT 8.00</p>	<p>8.25mm HEIGHT 9.50</p>	<p>9.85mm HEIGHT 11.10</p>	<p>11.25</p>
	<p>6.25mm HEIGHT 8.00</p>	<p>9.05mm HEIGHT 10.80</p>	<p>13.65mm HEIGHT 15.40</p>	<p>12.55</p>	
	<p>6.25mm HEIGHT 8.00</p>	<p>9.05mm HEIGHT 10.80</p>	<p>13.65mm HEIGHT 15.40</p>	<p>15.80</p>	

9 different vertical combinations available from 8.0mm to 18.5mm

Archer Kontrol Pin Counts

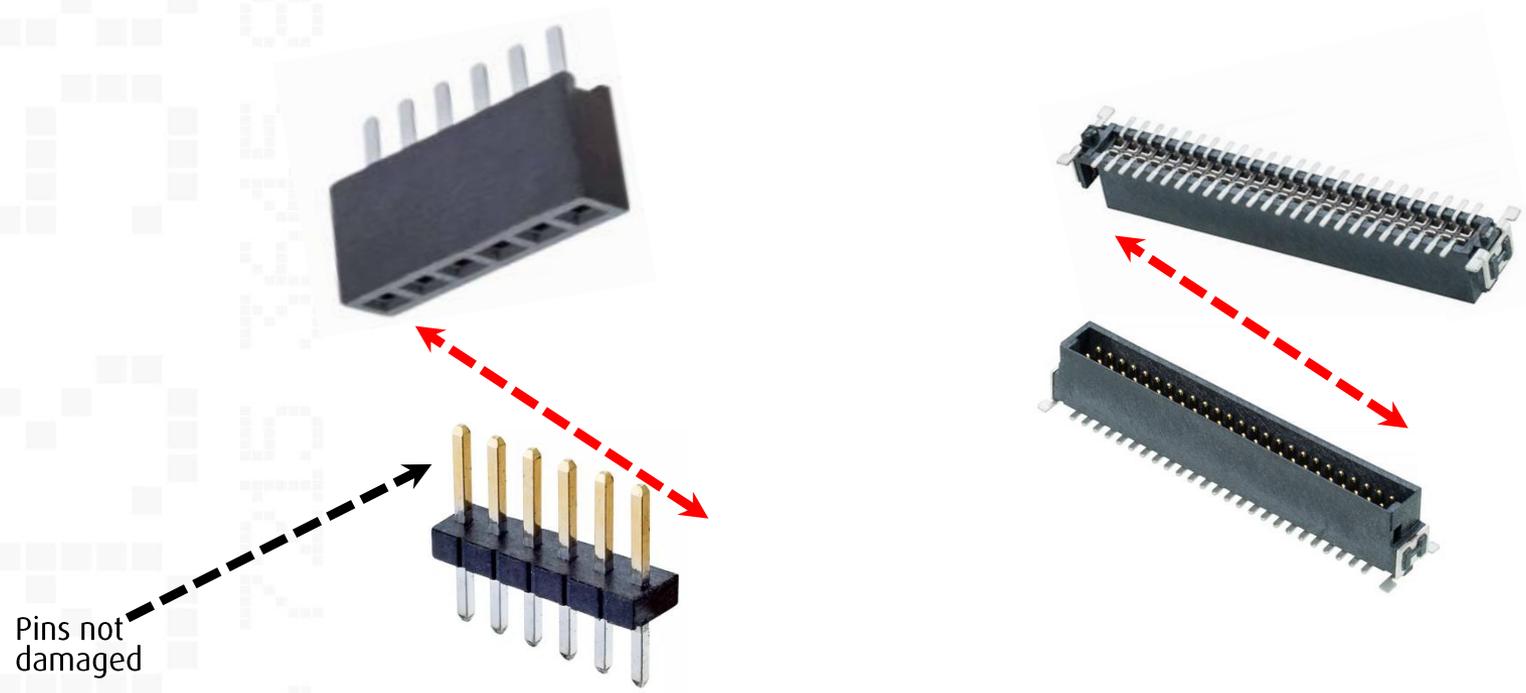


Available in 8 different pin counts:
12, 16, 20, 26, 40, 50, 68, 80

Why not a lower cheaper model like the existing Archer range?

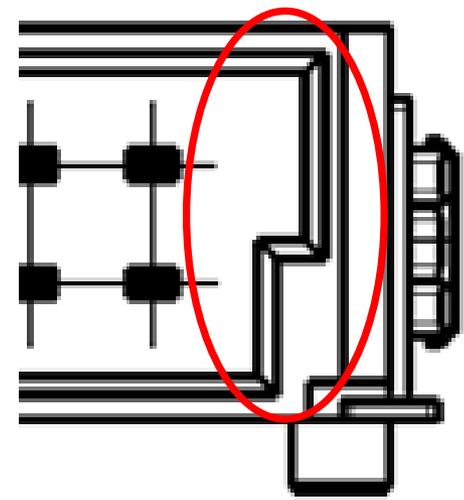
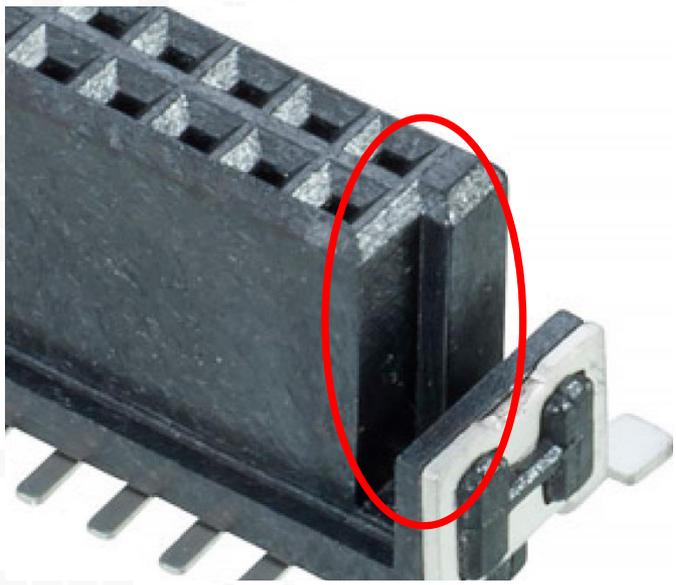
>The following features apply to the entire range

Archer Kontrol To Solve Misalignment and Blind Mating Issues



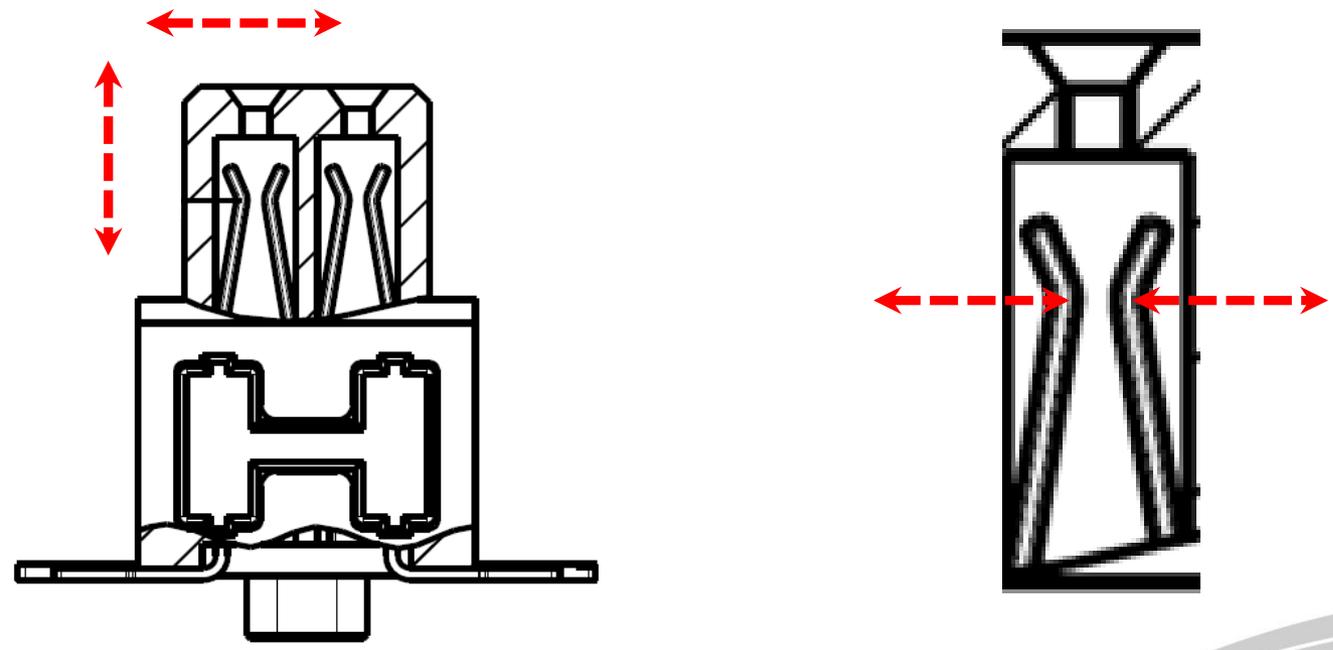
> Housing on housing initial contact

Archer Kontrol Polarization Feature

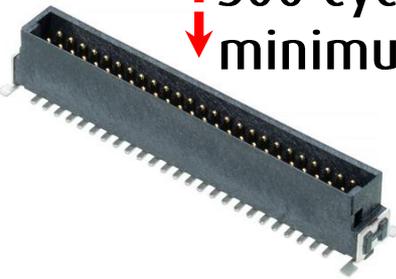


Archer Kontrol

Contact Point Allowing Movement



Archer Kontrol Physical Properties



Guaranteed to perform at 500 cycles minimum

Insertion force at 0.8N per contact
Withdrawal force at 0.2N minimum per contact

High temperature moulding, LCP rated to UL94V-0

Plating on contact pins 0.025µ min of gold over 2.03µ min of Nickel

Plating on SMD pins 2.51µ min of tin over 1.27µ min of Nickel

Temperature range
-55°C to +125°C

Archer Kontrol Electrical Properties



The connectors are tested to perform to 1.2 Amps per contact.

Contact resistance guaranteed to be $< 25\text{m}\Omega$

Insulation resistance at $1000\text{M}\Omega$ minimum

Voltage proof tested at 500V AC for 1 minute

Archer Kontrol Tape and Reel Packaging



The complete range offered in tape and reel ready for automated pick and place assembly

>All vertical models include pick and place caps

Archer Kontrol Key Messages

Across the entire range

- >Higher reliability (robustness, alignment features and durability)
- >Higher number of mating cycles
- >Higher Current rating
- >Higher Operating temperature
- >Tape and reel packaging

Archer Kontrol Typical Customers

Archer Kontrol

Key Market: Industrial

~~Aerospace, Military, Motorsport~~

~~Low cost Consumer~~

Why this target market?

Typically business to business products require:

Reliability and to be price competitive VS their competition.

Archer Kontrol

Typical customers

>Switch mode power supplies (SMPS)

OMRON

Industrial Automation

Switch Mode DIN Rail Panel Mount Power Supply, 3W,
5V dc/ 600mA

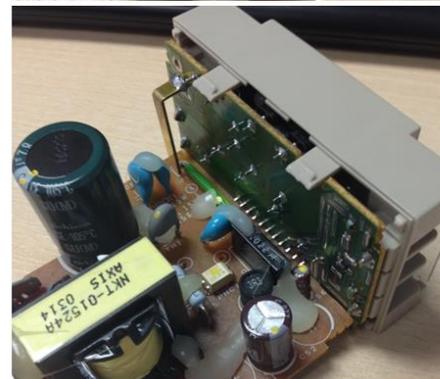
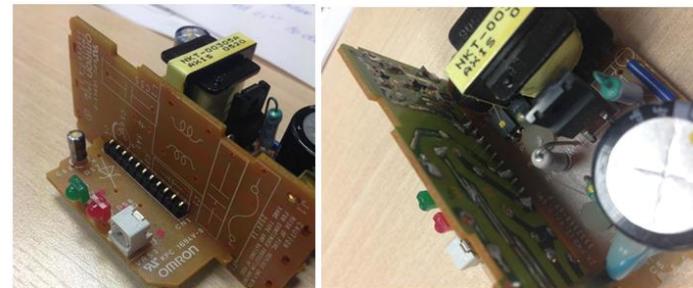
RS Stock No. 338-1374
Brand Omron
Mfr. Part No. S82K-00305



Image representative of range

Omron S82K-00305 power supply

11 way 2.54mm pitch right angled through board pin header, overall gold plated.

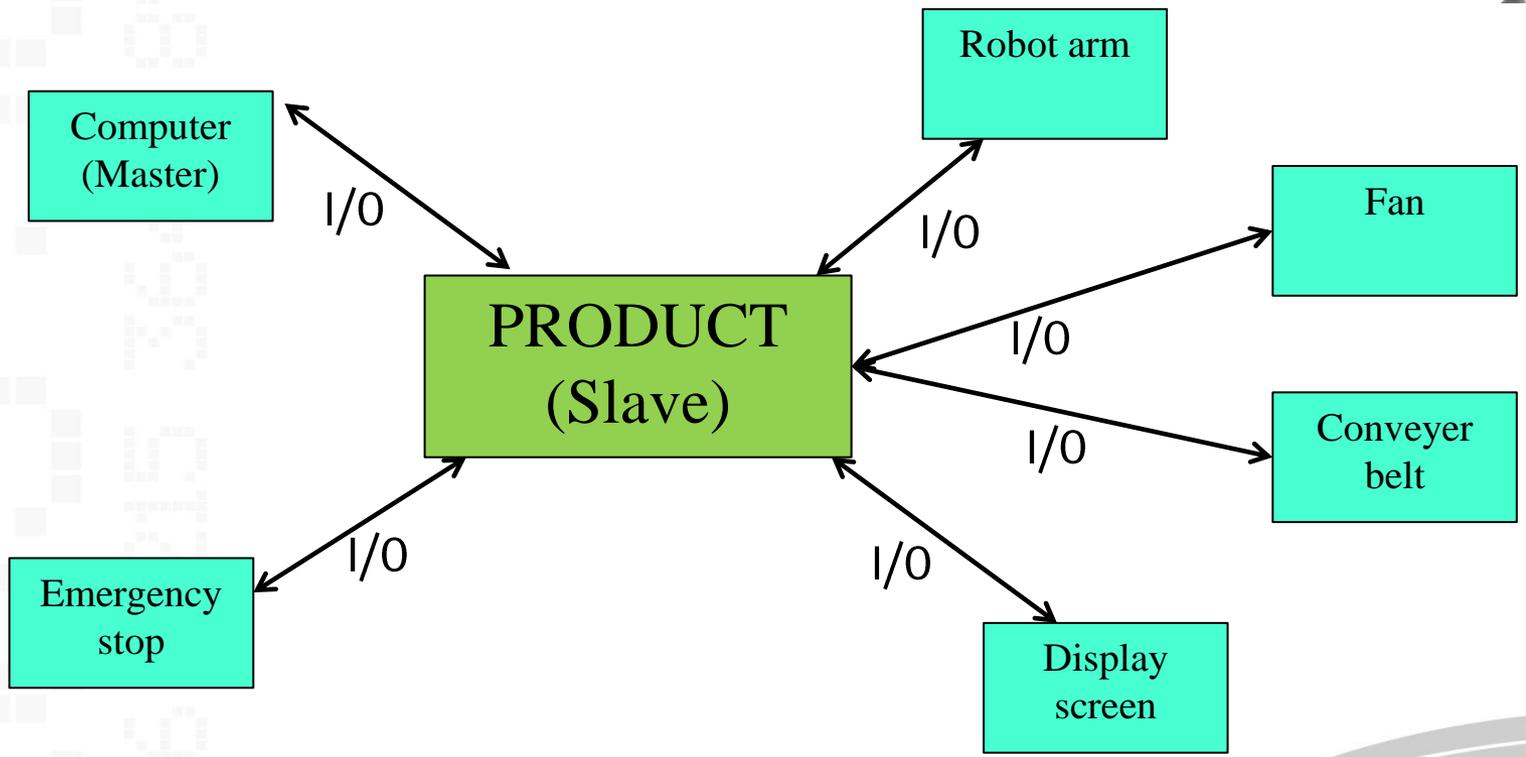


Archer Kontrol

Typical customers



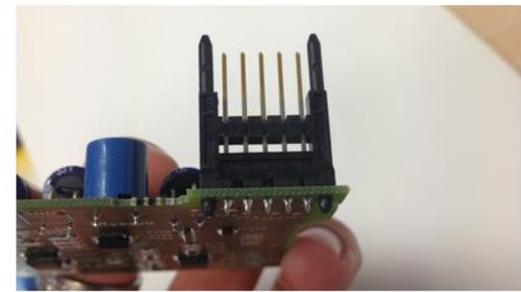
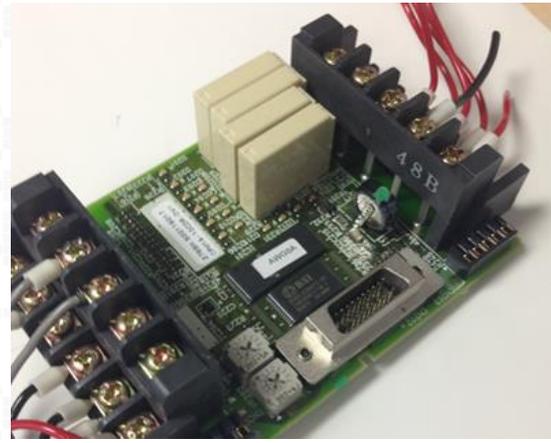
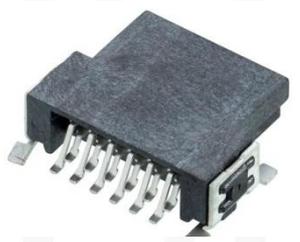
>Input/Output (I/O) programmable controllers



Archer Kontrol

Typical customers

>Input/Output (I/O) programmable controllers



Archer Kontrol Competitors

>A cross reference list is available for you all to use

Archer Kontrol Competitors

All that are listed below are :

The same general shape and available in tape and reel



- | | | |
|--------------|--------------------------|-------------------------------------|
| ERNI | - SMC 1.27 mm connectors | } Comprehensive range |
| MPE-Garry | - 714 – 715 series | |
| Harting | - harflex series | } No male tallest version |
| EPT | - One27 | } No male & female tallest versions |
| Major League | - SHS - SHM series | } All heights, less pin counts |
| Greenconn | - SBEC - GBEC series | |

} Offer different plating thicknesses:
 5u" (0.13um)
 15u" (0.38um)
 and 30u" (0.76um)

- Location pegs: *All the above pegs are designed for a Ø1.60 mm through hole*
 - EPT have one round peg and one ovoid peg.
 - Greenconn have one round peg and one D shape peg.
 - ERNI, Harting & MPE-Garry have two round pegs.
 - Major League shows pegs of different sizes on the Male Vertical SMT. i.e. - Ø1.50 + Ø1.00 mm. Others appear to be 2 round pegs of Ø1.50
 - Harwin have 1 ovoid and one D shape

Archer Kontrol Pricing

We are at least 20% lower than competition pricing, allowing us to be competitive in the marketplace.

For more details, please contact
quote@harwin.co.uk

Archer Kontrol

Full Launch 28th February 2018



27 February - 1 March 2018 // Nuremberg, Germany

