

# Crane Sockets Meet PC/104 Standard

CINCINNATI, OHIO

SALES BULLETIN SB-0600

## Embedded Applications On The Rise

Judging by the increase in the number of sample requests and orders received at Crane for **MATP** Square Tailed Sockets, there appears to be a significant rise in the number of PC/104 applications in use. Dedicated and embedded systems seem to be popping up everywhere.

PC's are being used as controllers within vending machines, laboratory instruments, communications devices, and medical equipment, to name a few examples. One Crane customer is using an embedded system to detect and detonate land mines in Bosnia. That's one application we're happy to be a part of!

## The PC/104 Standard

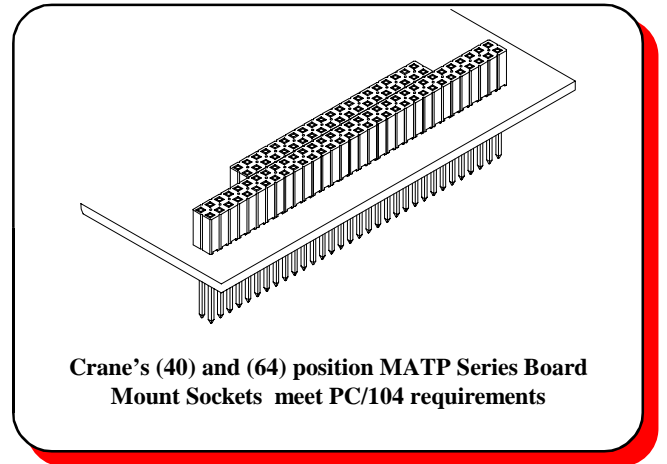
Although PC/104 modules have been manufactured since 1987, a formal specification was not published until 1992. Since then, interest in PC/104 has skyrocketed. Companies using PC/104 "module stacks" within their products frequently create their own application-specific modules. In the majority of these applications, the modules are **SELF-STACKING**. Since the design does not utilize backplanes or card cages, **STACKTHROUGH** board mount sockets are required.

## Crane Parts Meet PC/104 Spec

As part of their PC/104 specification, IEEE identified three connectors to be used in the application. They are:

PC/104 CONNECTORS		
ITEM	POSITIONS	VERSION
J1/P1	2 x 32	Stackthrough Socket
J2/P2	2 x 20	Stackthrough Socket
J1	2 x 32	Non-Stackthrough Socket

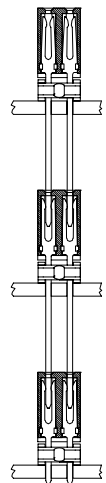
Crane's new **MATP** Series Board Mount Sockets feature a **SQUARE TAIL** (versus the rectangular tail of standard sockets) and meet the requirements of the **PC/104** spec. The applicable Crane part numbers are in the following table.



Crane Sockets Meeting PC/104 Spec		
ITEM	POSITIONS	CRANE PART NUMBER
J1/P1	2 x 32	MATP 64 DS-CQ-ACT
J2/P2	2 x 20	MATP 40 DS-CQ-ACT
J1	2 x 32	MATP 64 DS-GQ-ACF

## Plating and Height Differences

On the J1/P1 and J2/P2 sockets, the Crane part number calls out a plating designator of "C" (MATP64DS-**CQ**-ACF). This letter specifies a plating thickness in the contact area of 15u gold, with 3-5u gold flash on the tail. Since the tail has been flashed with gold, it can be inserted through the PCB into another **MATP** Square Tail socket. This stackthrough option can be repeated for as many module stacks as needed (see illustration at right).



NOTE: The plating on the tail of the J1 socket is tin/lead since this is the non-stackthrough socket that gets soldered to the PCB.

## LIF Version Available

Due to the high pin counts involved, many designers prefer to use a low insertion force socket. This option, which features a low insertion force while maintaining the required normal force on the mating pin, is available from Crane as well. Simply substitute an "L" for the "P" in the part number prefix (specify **MATL** instead of **MATP**).

MATP Standard Insertion		MATL Low Insertion	
Insertion Force Per Contact	5.0oz	Insertion Force Per Contact	2.5oz
Withdrawal Force Per Contact	3.0oz	Withdrawal Force Per Contact	1.5oz

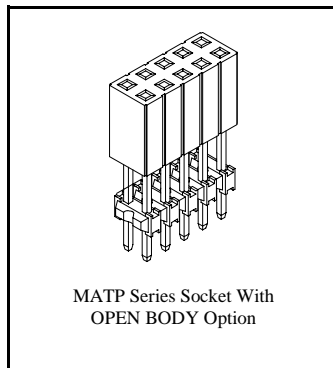
## Great For Elevated Applications Too!

While the primary users of Crane's **SQUARE TAIL** socket will be those people using embedded-PC architecture, other users will include anyone who needs to elevate sockets (for use with LED displays, for example), or accomplish **ULTRA HIGH** board stacking combinations. When used with Crane's "railroad track" style headers (**MPEG** Series), mate-able board stacking combinations over two inches in height are achievable.

## OPEN BODY: A Cost Effective Option

Crane's MATP Series Sockets are available in ten standard heights – 0.400" to 0.835" – as well as **SOLID STACK** and **OPEN BODY** configurations. Solid stack versions are excellent where pins need to be protected. For applications that do not require this protection, an Open Body version will help reduce expense.

Crane's **MATP** Series Sockets are available direct from Crane Connectors, as well as authorized distributors nationwide. Elevated sockets with the square tail run about four cents a line in quantity for 15u gold; rectangular tail sockets are 10% less. Delivery is 2-3 weeks ARO based on quantity. For more information, contact Crane Customer Service.



## PRODUCT SPECIFICATIONS

CATEGORY	MATP SERIES	MATL SERIES	
Insulator Material	GF Polyester	GF Polyester	
Contact Material	Phos Bronze	Phos Bronze	
Current Rating	3 Amp Cont.	3 Amp Cont.	
Oper. Temp Range	-55C to 125C	-55C to 125C	
Plating -- Mating	15u Gold	15u Gold	
Contact Resistance	<10 milliohms	<10 milliohms	
Insulation Resistance	5000 Megohms	5000 Megohms	
DWV	1000 VAC RMS	1000 VAC RMS	
Flammability Rating	UL94V-O	UL94V-O	
Contact Insertion Depth	NOM	0.230"	0.230"
	MIN	0.120"	0.120"
	MAX	0.245"	0.245"
Insertion Force	5.0 oz Avg	2.5 oz Avg	
Withdrawal Force	3.0 oz Avg	1.5 oz Avg	
Insulator Color	Black	Black	
Plating Options	<b>L</b>	10u Au Mating Tin/Lead Tail	10u Au Mating Tin/Lead Tail
	<b>G</b>	15u Au Mating Tin/Lead Tail	15u Au Mating Tin/Lead Tail
	<b>C</b>	15u Au Mating Au Flash on Tail	15u Au Mating Au Flash on Tail
	<b>H</b>	30u Au Mating Tin/Lead Tail	30u Au Mating Tin/Lead Tail
	<b>M</b>	50u Au Mating Tin/Lead Tail	50u Au Mating Tin/Lead Tail
	<b>T</b>	Tin / Lead	Tin / Lead
Quality Program	ISO 9001	ISO 9001	

NOTE: 50u gold may be subject to minimum order requirements.

*For more information  
about Crane products and services, visit our  
website at ...*

**[www.cranecollectors.com](http://www.cranecollectors.com)**