



# Mini Modular Rectangular Connectors

- High density up to 1000 signal Ø 0.60mm contacts.
- · Modularity mixed signal, power, coaxial contacts.
- Clip contact retaining system.
- Metallic shell.
- Cable clamp 12 to 25mm.
- Centered jackscrew extractor.
- 5000 mating cycles with the threaded jackscrew.
- 15000 mating cycles with the 1/2 turn jackscrew.
- Contact safety : 1mm

"Hypertac<sup>®</sup> high density mini-modular connectors" use a concept system based on the building block principle. They offer a large range of combinations available in a single connector frame.

Therefore, the user is capable of selecting the connector that fulfils the exact requirements with off-the-shelf components.

Two of the main advantages of the Hypertac<sup>®</sup> contact are its low insertion/extraction forces and pin & socket wiping action. In this application the user is able to assemble a significantly large number of contacts into a connector which is still able to mate and unmate smoothly and easily.

The H series can be built up for the following:

- Rack and panel applications
- Standard
- With keying system
- With locking systems
- With floating mounting
- Cable applications
  - Hooded with rounded or flat cable security clampsWith jack screws
- Programming applications

The system is composed of two basic elements: the modules and the frames.

1. The modules are the connector elements of the system. Contacts are housed in small plastic blocks. All contacts are removable for easy assembly and repair. The width of each module block is designated in units (1 unit = 2.54mm, 1/10 inch).

Module	Ρ	H-E	NH	Т	С	Μ	Н	Е	V
N-Unit	1	1	2	2	4	4	4	4	4
Capacity	/5A	5A	1A	9A	25A	50A	5A	5A	50 V

2. The frames keep the modules in position. They range from a basic frame consisting of 2 side rails and 2 end caps to more complex versions with jackscrews, hoods, cable clamps, etc...

All frames are available in various lengths to conform to almost any combination of modules. Although any length is possible, we suggest ordering one of the standard lengths for optimum delivery and price. This can be accomplished by filling in any empty spaces with blank modules.

H series, specially designed connectors, provide high reactivity, flexibility and cost saving by eliminating the extra cost and delay of custom tooling.



# **Ordering Information**

VALID FOR SIMPLE COMPOSITIONS (modules of same type)	H C - 5 01 13 40 19
FAMILY	
HOUSING TYPE	
MODEL	
Standard model  M  DIN 43659 shell  B  Shielded EMC  N  Dielectric hood (plug  L  Reinforced - Inox hood - (plug only)  R  Reversed polarity (c	
Single row without extractor jackscrew	
5 Single row with extractor jackscrew	
Single row with 1/2 turn jackscrew	
Double row without strengthened central bar	
5 Double row with strengthened central bar	
MODULE ARRANGEMENT	
O1      Module P      14      Module NH      12      Module H	O6      Module M      17      Module H-U
16      Module H-E      02      Module T      07      Module C	15 Module V
For mixed composition :fill in «H Module Configurator» formulary and CONNECTOR TYPE - POLARITY	a send it to HYPERTAC SA
03 Plug* 04 Receptacle* 06 Extens	sion* * without contacts
	e Extension Note: code 12, 23, 33 are
	Extension only available with model <b>R</b>
TERMINAL STYLE	
20      Crimp      40      Solder      53      Wrap	u 1.20
<b>30</b> Straight <b>51</b> Wrap u 0.60	
NUMBER OF PITCHES	
07 to 35      Single row (from 7 to 35 pitches)	
38 to A5      Double row (from 19 to 55 pitches)	
SHIELDED RING (Valid only for H-B plug)	
A      Ø 22mm      B      Ø 19mm      C      Ø 15mm	

# Module P



- Crimp contacts will be shipped unassembled



### Module NH



Ø 1.5 5.08 4.84 4.70 0 0 0 0 0 6 5.08 0 30 Ø 2.75 4.70 Ξ 01.20 34.60

0151171-30ROG (pin) 0151092-30RG0 (socket)

**REF. 40** Solder cup up to 13 AWG 0150911-40ROG (pin) 0150912-40RG0 (socket)

**REF. 53** Wire wrap 0150921-53ROG (pin) 0150922-53RG0 (socket)

Contact Material			oper alloy			
Plating reference		Ni >	Ni >1mm+Au> 0,25mm			
	on	on mating surface only.				
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Module designations						
Terminal	Crimp	Straight	Solder	Wire		

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Terminal	Crimp	Straight	Solder	Wire
style		dip solder	cup	wrap
Male	TMR	TMD	TMS	TMY
Female	TFR	TFD	TFS	TFY

### Accessories

Crimp tool:	S-085
Positioner:	S-086
Extraction tool:	SD-0150000005

Notes :

- For empty block, order TH

- Crimp contacts will be shipped unassembled



# Module H



Ø 1.20 mm contacts

### **General Specifications**

•	
Current Rating	5 amps
Contact Resistance	< 3 milliohms
Extraction Force	40 -120 gr.
Contact Life Cycles	>100,000
Dielectric Withstanding	
Voltage	6000 V RMS
Insulation Resistance	> 5 x 10 <sup>3</sup> Megohms
Temperature Rating	-55°C +125° C
Insulator	Glass filled nylon
Contact Material	Copper alloy
Plating reference	Ni >1mm+Au> 0,25mm
-	on mating surface only.

Module designations				
Male	HM	_		
Female	HF	-		

Notes :

- For empty block, order MH

## Module C

- Width is 4 units
- 2 Hypertac<sup>®</sup> Power up to 25 ampers contacts
- Ø 3.50mm contacts

### Male Ø 4.50 Hole Ø 3.50 D 13.00 11.00 13.00 17.50 24.00 11.00 17.50 Hole Ø 3.50 Ø 4.50 10.16 $\bigcirc$ $\bigcirc$

Female

### **General Specifications**

-		
Current Rating	25 amps	
Contact Resistance	< 0.80 milliohms	
Extraction Force	250 -1000 gr.	
Contact Life Cycles	>100,000	
Dielectric Withstanding		
Voltage	5000 V RMS	
Insulation Resistance	> 5 x10 <sup>3</sup> Megohms	
Temperature Rating	-55°C +125° C	
Insulator	Glass filled nylon	
Contact Material	Copper alloy	
Plating reference	Ni >1mm+Au> 0,25mm	
	on mating surface only.	
	- *	

Module designations				
Male	CM			
Female	CF			

Notes :

- For empty block, order MH

12.70 30.00



### Module M

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 Width is 4 units
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2 Hypertac<sup>®</sup> Power up to 50 ampers contacts

Ø 3.50mm contacts



General Specifications			
Current Rating	50 amps		
Contact Resistance	< 0.60 milliohms		
Extraction Force	1370 -2500 gr.		
Contact Life Cycles	>100,000		
Dielectric Withstanding			
Voltage	5000 V RMS		
Insulation Resistance	> 5 x 10 <sup>3</sup> Megohms		
Temperature Rating	-55°C +125° C		
Insulator	Glass filled nylon		
Contact Material	Copper alloy		
Plating reference	Ni >1mm+Au> 0,25mm		
	on mating surface only.		

Module designations				
Male	MM			
Female	MF			

Notes :

- For empty block, order MH

- Crimp contacts will be shipped unassembled

12.70 30.00

## Module H-U

Width is 5 units

### Currently in development (Consult us about availability)



### Notes :

- Width can be reduced on request

- For contacts, contacts arrangements, cavities feasability and P/N please consult us.

### UNIVERSAL MODULE

Module without cavities for specific customer's applications.

Several modules could be assembled together to increase width and to make enlarged cavities following customer wishes. Example shown on hereunder drawing.



# Module V-R & V-S

- **General Specifications COAXTAC** Male **Terminal Style** Ref.40(Solder) Ref.20(Crimp) Nominal impedance 50 ohms Frequency Range DC 3 GHz with RG316 10 ith D 3.27 7.38 .38 6.35 6.35 0 0 0 0 Female 13.00 11.20 5.10 30.00 Cabling notice Accessories crimp (R) & (R1) Solder (S) Inner contact Outer contact RG405 T-Flex 405 Crimp tool: M22520/2.01 Crimp tool: M22520/10.01 Cable RG316& RG316DB Positioner: T1957 Die Set: T1958 (RG316) Socket S-50302 S50301 S50307 T2019 (RG316DB) Pin: S-50304 S50303 S50308 Extraction tool: T1982
- Width is 2.5 units

4 Hypertac<sup>®</sup> contacts (on both signal & ground)

			DC 18 GHz with	n RG405.	
Temperature Ra	ating		-55°C to 125°C		
Materials			Brass Beryllium Copper		
			PTFE Fluorocar	bon	
Center Contacts			Gold over nickel		
Housings			Over copper		
Wire			Gold over nicke	į	
Voltage Standir	ng Wave Ratio		(DC to 3GHz) 1	.20: 1 Max.	
(based on RG4	05 semi rigid ca	ble)	(3GHz to 18GHz) 1.50: 1 Max.		
<b>RF</b> Tranmission	Loss		0.50 dB Max.@18 GHz		
Insulation Resis	stance		5,000 megohms min.		
<b>Dielectric Withs</b>	tanding Voltage		500 VRMS		
Contact Resista	ance inner Conta	act	8 miliohms Max.		
Contact Resista	ance outer Cont	act	2 miliohms Max	ζ.	
Extraction Forc	e		42.5 - 170g Ma	x., 85g average	
Contact life cyc	les		> 25,000		
	Module		Contact	Cable	
	VMR	YC	X0315-004H	RG316	
	VMRDB	YC	X0315-018H	RG316DB	

iviodule	Contact	Caple
VMR	YCX0315-004H	RG316
VMRDB	YCX0315-018H	RG316DB
VFR	YCX0315-002AH	RG316
VFRDB	YCX0315-019AH	RG316DB
VMS	YCX0315-003H	∫ RG405 or
VFS	YCX0315-001AH	<b>L</b> T-Flex405

### Module V-P

Width is 2.5 units







4 Hypertac<sup>®</sup> contacts (on both signal & ground)

### **General Specifications**

Current Rating	25 amps		
Contact Resistance	< 1.5 milliohms		
Extraction Force	85 - 482 gr.		
Contact Life Cycles	>100,000		
Dielectric Withstanding			
Voltage	500 V RMS		
Insulation Resistance	>10 <sup>₄</sup> Megohms @ 500 VDC		
Temperature Rating	-55°C +105° C		
Insulator	Nylon		
Contact Material	Copper alloy		
Plating (on mating surface only.) Ni >1mm+Au> 0,25mm			

C	A	
Module	Contact	Crimp too
VMS	YCX025-024H	Positioner
VFS	YCX025-031AH	Extraction

Accessories				
Crimp tool:	M309			
Positioner:	T1981			
Extraction tool:	T1982			







### SEQUENCE OF MODULES

### Receptacle





### Frame HC up to 320 contacts

- Jackscrew extractor
- Allow 3 units for jackscrew
- Single row, rack & panel with keys
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 7, 11, 15, 19, 23, 27, 31 & 35 unit lengths.
- Up to 320 contacts on 2.54 x 2.54 centers
- Mated length 68.50



Notes :

- (1) See panel mounting dimensions page
- (2) Standard length for p.c. boards
- (3) For thicker chassis, specify longer studs consult us
- See ordering information, page

### Frame HB up to 350 contacts

- Single row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 7, 11, 15, 19, 23, 27, 31 & 35 units lengths
- Up to 350 contacts on 2.54 x 2.54 centers
- Mated length 23.50



Notes : (1) See panel mounting dimensions page See ordering information page



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# Frame HD up to 350 contacts



- Push, 1/4 turn locking hardware
- Single row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 7, 11, 15, 19, 23, 27, 31 & 35 unit lengths
- Up to 350 contacts on 2.54 x 2.54 centers
- Mated length 23.50



Notes:

(1) See panel mounting dimensions page See ordering information page

## Frame HG up to 350 contacts

- Float mounting [Max. radial play 0.60]
- Single row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 7, 11, 15, 19, 23, 27, 31 & 35 unit lengths
- Up to 350 contacts on 2.54 x 2.54 centers
- Mated length 25.20





Dimensions are in mm





11.00

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APRIL 2005





## Frame HH up to 350 contacts

- Float mounting with heavy duty guides
- Max. radial play 1.25
- Single row, rack and panel with keying
- Built-in pin protection н.
- 36 possible keying combinations
- Standard sizes: 7, 11, 15, 19, 23, 27, 31 & 35 unit lengths
- Up to 350 contacts on 2.54 x 2.54 centers .
- Mated length 26.50



Notes:

(1) See panel mounting dimensions page See ordering information page

### Frame HJ Plug with up to 320 contacts



M2.5

Units	11	15	19	23	27	31	35
Y	50.64	60.80	70.96	81.12	91.28	101.44	111.60
Z	22.47	27.55	32.63	37.71	42.79	47.87	52.95

- Hooded with cable clamp Ø12.5 to 25mm
- Jackscrew extractor
- Allow 3 units for jackscrew
- Single row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 11, 15, 19, 23, 27, 31 & 35 unit lengths
- Cable clamp will hold 80 to 320 conductors of 22 to 28 AWG
- Plug HJ mates with receptacle type HC or extension HJ
- Up to 320 contacts on 2.54 x 2.54 centers
- Mated length 92.50



Notes: (1) See panel mounting dimensions page See ordering information page

- Mating face cover H\_-- A n units





# Frame HJ extension with up to 320 contacts

Extension







- Hooded with cable clamp Ø12.5 to 25mm
- Jackscrew extractor
- Allow 3 units for jackscrew
- Single row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 11, 15, 19, 23, 27, 31 & 35 unit lengths
- Cable clamp will hold 80 to 320 conductors of 22 to 28 AWG
- Mates with plug type HJ
- Up to 320 contacts on 2.54 x 2.54 centers
- Mated length 142



 See panel mounting dimensions page See ordering information page

# Frame HK up to 320 contacts





- Hooded with cable clamp Ø12.5 to 25mm
- Jackscrew extractor
- Allow 3 units for jackscrew
- Single row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 7, 11, 19, 23, 27, 31 & 35 unit lengths
- Cable clamp will hold 40 to 320 conductors of 22 to 28 AWG
- Mates with receptacle type HC
- Up to 320 contacts on 2.54 x 2.54 centers
- Mated length 92.50



Notes: (1) See panel mounting dimensions page See ordering information page



### Frame HR up to 320 contacts





- Hooded for programming applications
- Jackscrew extractor .
- Allow 3 units for jackscrew
- Single row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 7, 11, 15, 19, 23, 27, 31 & 35 unit lengths
- Mates with receptacle type HC
- Up to 320 contacts 2.54 x 2.54 centers
- Mated length 92.50



Notes:

- (1) See panel mounting dimensions page
  - See ordering information page
- Mating face cover H\_-- A

### Frame HOM up to 585 contacts



- Ruggedized version using H modules in DIN 43652 metal panel housings & hoods. Frame for modules is made from Aluminium.
- 3 sizes of shell are proposed
- Heavy duty environment with high density of H series. н.
- Coaxtac module compatible with HOM design.
- Male contacts protected by the plug design
- 7 module size can accept 260 «HC» 0.6 mm diameter contacts & 585 «HC» 0.4 mm diameter contacts.
- Half turn guick disconnect locking system.
- Medical white colour on request.
- Option: shielding.

Currently under development (Consult us about availability)







- 180° quick turn jack provides >15,000 mating cycles
- Great for test equipment, burn-in stands, security systems, medical equipment, etc...
- <1 second mating/unmating operation</li>
- Crimp, solder cup, dip solder, and wire wrap® terminations
- Provides 20-320 contacts in a single mating
- 5 to 50 amperes contact mixed to your needs
- Built-in pin protection
- Standard Frame sizes: 11, 15, 19, 23, 27, 31 & 35 unit lengths.

### Notes:

- (1) Standard length for p.c. boards
- (2) For thicker chassis, specify longer studs consult us
- HCY or HJY plug mates with HCY receptacle
- See ordering information page

HCY frame







**HJY frame** 



# **Receptacle HCY**

Plug

SEQUENCE OF MODULES

SEQUENCE OF MODULES





Units	11	15	19	23	27	31	35
Х	35.56	45.72	55.88	66.04	76.20	86.36	96.52
Y	50.64	60.80	70.96	81.12	91.28	101.44	111.60
Z	22.47	27.55	32.63	37.71	42.79	47.87	52.95

# **H** Series



## Frame HL up to 1000 contacts

- Jackscrew extractor takes 5 modules space only for 35 to 55 unit lengths
- Double row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 19, 23, 27, 31 & 35 to 55 unit lengths
- Up to1000 contacts on 2.54 x 2.54 centers
- Mated length 110

### Notes :

- See panel mounting dimensions page
  Standard length for p.c. boards
- (3) For thicker chassis, specify longer studs consult us
- See ordering information page
- Mating face cover H\_-- 284 \_
  - n units



### 19 to 31 unit lengths Plug Receptacle 9.40 Plus X ļć Ó 30.00 76.25 60.95 76.25 70.65 60.96 65 6 72 2 .5 9 2.59 X (1) 35 to 55 unit lengths 9.4<u>0 Plus X</u> ó 30.00 76.25 60.95 76.25 70.65 60.96 65 72. 2.59 2.59 Ø20.00 X (1) Sequence of modules view from receptacle mating side 83.70 116.30 5.18 Plus X (1) 4.60 18.00 .50 (3 50 (4) 11.00 ▲ M 6 10.00





# **H** Series

# Frame HM up to 1000 contacts



- Hooded with cable clamp Ø16 to 50mm
- Jackscrew extractor takes 5 modules space only for 35 to 55 unit lengths
- Double row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 19, 23, 27, 31 & 35 to 55 unit lengths
- Mates with receptacle type HL
- Up to1000 contacts on 2.54 x 2.54 centers
- Possible double cable clamp, consult us
- Mated length 110

Plug

# 19 to 31 unit lengths

39.60 Plus X (1) 9.40 plus X (1) 9.60 plus X (

35 to 55 unit lengths

Sequence of modules view from plug mating side



### Notes :

- (1) See panel mounting dimensions page
- See ordering information page
- Mating face cover H\_-- 284
  - \_\_\_\_ n units



# Frame HJB

- Jackscrew extractor takes 3 modules space
- 1/2 turn jack takes 5 modules space
- Single row, rack and panel with keying
- Built-in pin protection
- 36 possible keying combinations
- Standard sizes: 07, 11, 15, 19, 23, 27, 31 & 35 unit lengths
- Up to 320 contacts on 2.54 x 2.54 centers
- Mated length 92.5

### **General Specifications**

Effective shielding	> 40 dB to 200 MHz
Temperature Rating	-55°C to 125°C
Materials	
Guiding, coding and locking system	Stainless steel
Central polarisation system	Stainless steel
Frame	Anodized aluminium, PBT,
	Polyamide, polycarbonate
Mating and unmating life cycles	5,000 with jackscrew
	15,000 with 1/2 turn jack
Sinuosidal vibrations	10Hz/2,000Hz-20g
Electrical discontinuity	< 20ns
Contact safety from extraction	1mm
Corrosion withstanding	96H (5% NaCL)
_	





### Frame HJB



Frame HCB

Receptacle





n/units	A
07	34.67
11	44.83
15	54.99
19	65.15
23	75.31
27	85.47
31	95.63
35	105.79

Notes :

- See ordering information page



# **Keying combination**

Mating side receptacle view



Mating side plug view

# **Sequences of modules**



Double row





# Panel mounting dimensions

For Single Row Frames

# Frames: HB, HC, HD



# Frame: HG







### Receptacle



# Frame: HL 19 to 31 pitches



Frame: HL 35 to 55 pitches



### MOUNTING DIMENSIONS

FRAME UNITS	Х	Y
7	25.40	50.80
11	35.56	60.96
15	45.72	71.12
19	55.88	81.28
23	66.04	91.44
27	76.20	101.60
31	86.36	111.76
35	96.52	121.92
39	101,60	
43	111,76	
47	121.92	
51	132.08	
55	142.24	

Notes :

42 N.cm torque for mounting Refer to individual frame type for standard length

Frame: HH



### MODULE COMBINATIONS (indicate the needed quantity of modules in the following cases) 2 hight voltage contacts (4 pitches) 10 contacts 5A Ø 0.60 (1 pitch) 5 contacts 9A Ø 1.50 (2 pitches) 0 0 0 0 . . . . . . . . 0 Qty Qty Qty Qty Qty Qty solder cup withstanding voltage 8 KV PH TH blank module blank module HM HF PMS solder cup, AWG22 PFS TMS solder cup, AWG13 TFS PMY wrapping j 0.60mm PFY TMY wrapping j 1.20mm TFY PMD straigth PFD TMD straigth TFD **PMR** crimp AWG26-22 PFR TMR crimp AWG20-14 TFR 10 buried contacts 5A Ø 0.6(1 pitch) 45 contacts 1A Ø 0.40 (2 pitches) (Currently in progress, consult us) 4 special contacts (2.5 pitches) H\_EM crimp AWG26-22 HMR crimp H-EF VMS solder cup coaxial VFS HFR AWG26 VMR crimp coaxial VFR 2 contacts Ø 3.50 (4 pitches) Universal module (5 pitches) VMRDB crimp coaxial VFRDB VMP crimp power 25A VFP $\bigcirc$ $\bigcirc$ Note: -VMR/VFR for RG316 cable CM CF H-U (consult us) power 25 A -VMRDB/VFRDB for RG316DB cable MM power 50 A MF FRAME (tick to indicate your choice) Single row Double row HB HG **HL** Receptacle (Plug & receptacle without jackscrew) HM Plug HD (Plug & receptacle with 1/4 turn jackscrew) HC (Receptacle with extractor jackscrew) HH (Floating mounting plug & receptacle) нı ΗК HOM (DIN 43659 shell) HR (Hooded plug) НЛ HKI HRL (Ruggerdized Stainless steel hood) HKN HJN **HRN** Dielectric hood) HJB (Shielded version) HCB (Shielded version) Standard (3 pitches) JACKSCREW TYPE RECEPTACLE PLUG (to tick) (to tick) 1/2 turn quick disconnect (5 pitches) Example for 15 pitches with std jackscrew : 2PMS/1MM/1HMR/1VMR/1PMS. HYPERTAC RESERVED SPACE: Will be completed by HYPERTAC with the part number for order issued from your choice above defined.

### H series module configurator