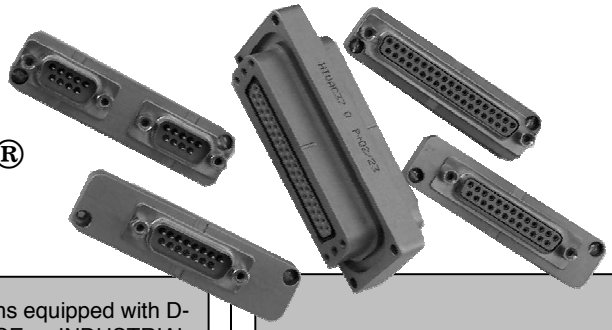
HIVAC ®



HIVAC® Series Connectors are feedthroughs equipped with D-Subminiature Adapter Connectors for SPACE or INDUSTRIAL vacuum applications.

The HIVAC® Connector configuration requires three separate units to function properly. The center unit is the feedthrough. This feedthrough requires two adapter units, one for the atmospheric side and one for the vacuum side.

Both sides of the feedthrough contain four threaded mounting holes and an o-ring groove. These redundant features allow either side of the connector to be mounted toward the vacuum, giving the customer the ultimate in flexibility.

The feedthrough has always Female/Female contacts.

The contact type of Adapter Connector is always as male next to the feedthrough and the other sides are according to the Customer request, Male/Male or Male/Female for the normal density, and for the high density it is systematically Male/Female.

A feedthrough has 5 types of insulators: 37 or 50 contacts for normal D and 44, 62 and 104 contacts for high D.

An Adapter Connector allows several combinations with a feedthrough.

The advantage of this system is that it allows the user the flexibility to purchase a single feedthrough and use it with a variety of adapters.

HIVAC® series connectors utilize precision machined contacts for strength and durability. The materials and finishes, as well as the technical characteristics of the HIVAC® series connectors, conform to MIL-DTL-24308, Goddard and SPACE-D32 specifications.

All HIVAC® Series connectors are 100 % leak tested after fabrication.

MATERIALS AND FINISHES

Insulator:	Glass-filled DAP per ASTM-D-5948 or polyester glass-filled per ASTM D 5927, UL94V0, ASTM E-595, NASA-RP-1124.
Contacts:	Precision machined copper alloy.
Posiband Spring Clip:	BeCu (Copper alloy).
Contact Plating:	0,000050 inch (1,25 microns) gold over copper plate.
Shells:	Brass with 0,000050 inch (1,25 microns) gold over copper plate or stainless steel.
Housing:	Aluminium alloy, golden brown conversion coating.
O-ring:	Viton (fluorocarbon). Other material per request. One mounting and one for spare part.

ELECTRICAL CHARACTERISTICS AT SEA LEVEL

Contact Current Rating:	7,5A nominal, size 20 5A nominal, size 22
Initial Contact Resistance:	0.005 ohms maximum.
Proof Voltage:	1000 V r.m.s.
Insulator Resistance:	5 G ohms.
Clearance And Creepage Distance:	0.039 inch (1,0 mm) minimum.
Working Voltage:	300 V r.m.s.
Residual Magnetism for Space Flight Versions :	Consult factory.

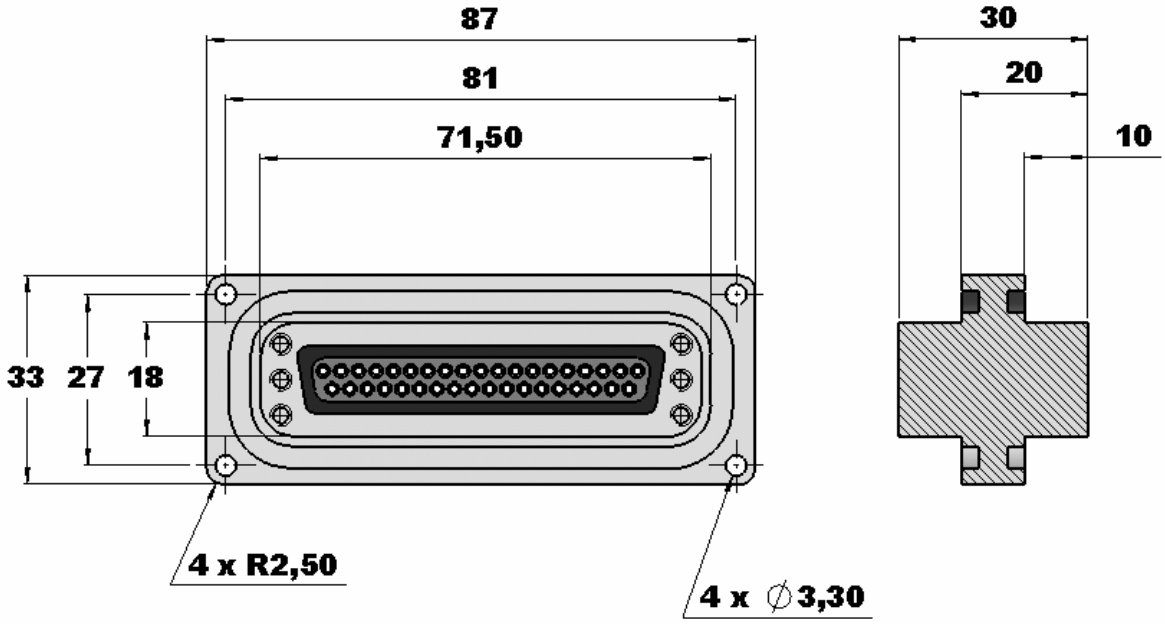
MECHANICAL CHARACTERISTICS

Fixed Contacts:	Size 20 Contact: 0,040 inch (1,02mm) mating diameter. Female Posiband contact: Closed entry design Size 22 Contact: 0,030 inch (0,76mm) mating diameter. Female Posiband Contact: Closed entry design.
Contact Adapter:	Male to female.
Contact Retention In Insert:	9 lbs. (40 N).
Shells:	Male shells may be dimpled for EMI/ESD ground paths.
Polarization:	Trapezoidally shaped shells.
Mechanical Operations:	500 operations, minimum, per IEC 60512-5.

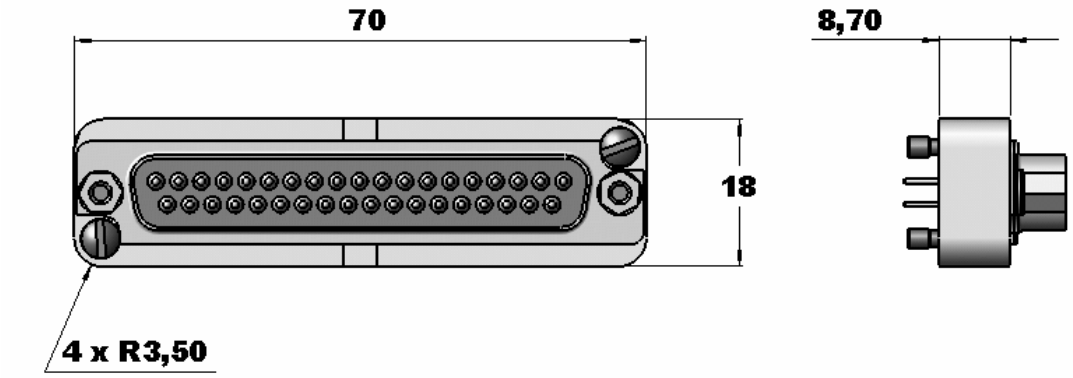
CLIMATIC CHARACTERISTICS

Temperature Range:	-40 to +85°C. The temperature range can be expended under certain conditions. Consult factory.
Helium Leak Rate At Ambient temperature:	$< 5x10^{-9}$ mbar.l/s under a vacuum of $1.5x10^{-2}$ mbar.
Outgassing Non-Metallic Material:	Total Mass Loss **– TML < 1 %.** Collected Volatile Condensable Materials – **CVCM < 0,1 %.**

HIVAC® FEEDTHROUGH DIMENSIONS

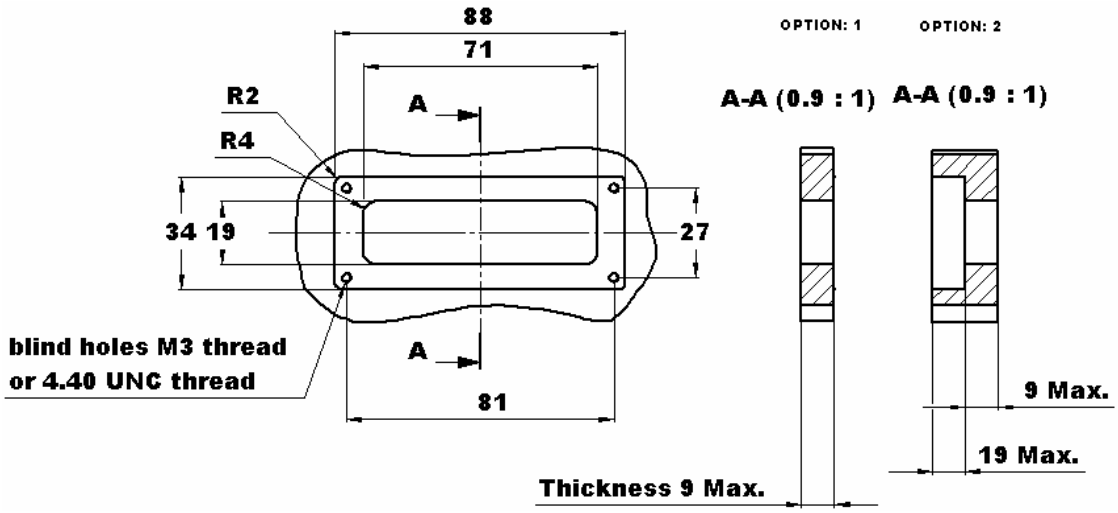


HIVAC® ADAPTER DIMENSIONS

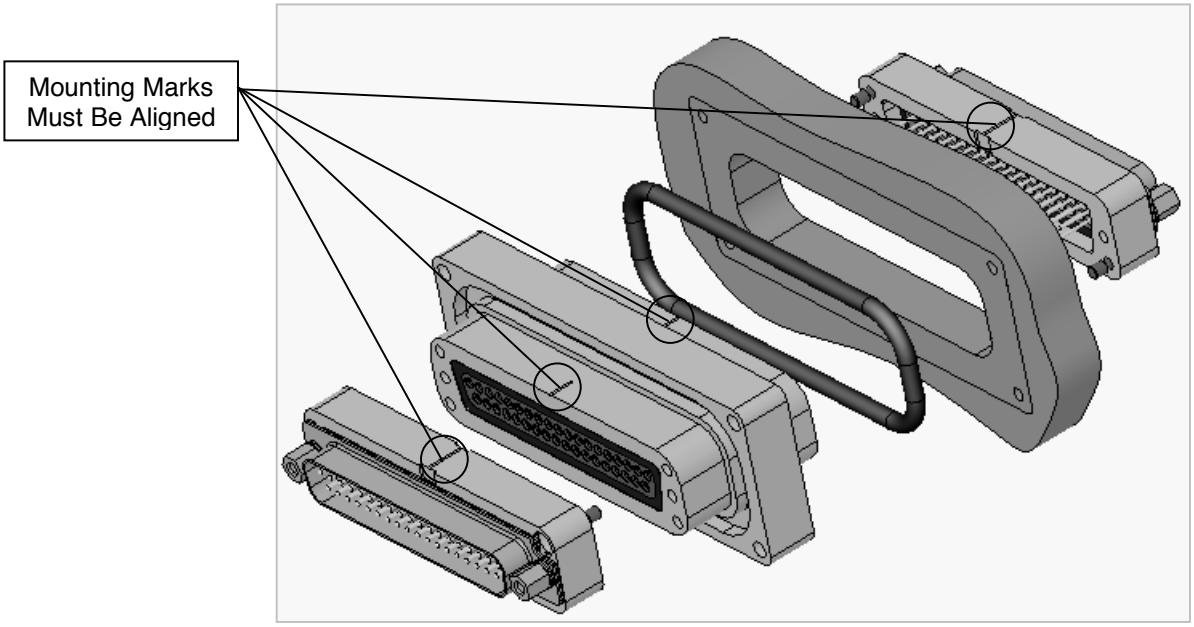


All dimensions are in mm.
All dimensions are subject to change.

HIVAC® FEEDTHROUGH PANEL CUTOUT INFORMATION



HIVAC® FEEDTHROUGH AND HIVAC ADAPTER MOUNTING



All dimensions are in mm.
All dimensions are subject to change.

ORDERING INFORMATION – CODE NUMBERING SYSTEMS

FEEDTHROUGH PART-NUMBERS

STEP	1	2	3		4
EXAMPLE	HIVAC	37	.0	-	S****

STEP 1 – BASIC SERIES
HIVAC FEEDTHROUGH

STEP 2 – CONNECTOR VARIANTS
Normal density
37-50
High density
44-62-104

STEP 3 – TYPE OF CONTACTS LAYOUTS
0 : Normal density
1 : High density

STEP 4 – SPECIAL OPTIONS
Consult Sales Department

ADAPTER PART-NUMBERS

STEP	1	2	3	4	5		6
EXAMPLE	HIVAC	37	.25	M	G	-	S****

STEP 1 – BASIC SERIES
HIVAC ADAPTER

STEP 2 – HIVAC FEED-THROUGH
Normal density
37-50
High density
44-62-104

STEP 3 – HIVAC ADAPTER CONTACT VARIANTS
Normal density with 37 variant
9-2X9-15-25-37
Normal density with 50 variant
9-2X9-15-25-50
High density with 44 variant
15-26-44
High density with 62 variant
62
High density with 104 variant
78-104

STEP 4 – ADAPTER GENDER
M : Male contact

S : Female Posiband

MM-SS: Use only with 37.2X9 and 50.2X9 Hivac Adapter

MS : Use only with 37.2X9 Hivac Adapter

For normal density : 2 Male Hivac Adapters or 1 Male Hivac Adapter with 1 Female Hivac Adapter

For high density : 1 Male Hivac Adapter with 1 Female Hivac Adapter

STEP 5 – TYPE OF APPLICATIONS
G : Gold for Space version
D : Gold and Dimpled for Space Version
S : Stainless-steel for Space version
Residual magnetism, consult factory

STEP 6 – SPECIAL OPTIONS
Consult Sales Department

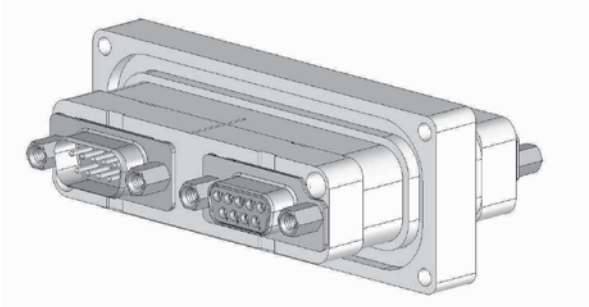
RECAPITULATIVE PART-NUMBERS
With All Adapter Variants

HIVAC Adapter	←	HIVAC Feedthrough	→	HIVAC Adapter
HIVAC37.9M*		**HIVAC37.0**		HIVAC37.9S*
HIVAC37.9M*				HIVAC37.9M*
HIVAC37.9S*				HIVAC37.9S*
HIVAC37.2X9MS*				HIVAC37.2X9SM*
HIVAC37.2X9MS*				HIVAC37.2X9MS*
HIVAC37.2X9MM*				HIVAC37.2X9SS*
HIVAC37.2X9MM*				HIVAC37.2X9MM*
HIVAC37.2X9MM*				HIVAC37.2X9MS*
HIVAC37.2X9MM*				HIVAC37.2X9SM*
HIVAC37.2X9SS*				HIVAC37.2X9SS*
HIVAC37.2X9SS*				HIVAC37.2X9MS*
HIVAC37.2X9SS*				HIVAC37.2X9SM*
HIVAC37.15M*				HIVAC37.15S*
HIVAC37.15M*				HIVAC37.15M*
HIVAC37.15S*				HIVAC37.15S*
HIVAC37.25M*				HIVAC37.25S*
HIVAC37.25M*				HIVAC37.25M*
HIVAC37.25S*				HIVAC37.25S*
HIVAC37.37M*				HIVAC37.37S*
HIVAC37.37M*				HIVAC37.37M*
HIVAC37.37S*				HIVAC37.37S*

HIVAC Adapter	←	HIVAC Feedthrough	→	HIVAC Adapter
HIVAC50.9M*		**HIVAC50.0**		HIVAC50.9S*
HIVAC50.9M*				HIVAC50.9M*
HIVAC50.9S*				HIVAC50.9S*
HIVAC50.2X9MM*				HIVAC50.2X9SS*
HIVAC50.15M*				HIVAC50.15S*
HIVAC50.15M*				HIVAC50.15M*
HIVAC50.15S*				HIVAC50.15S*
HIVAC50.25M*				HIVAC50.25S*
HIVAC50.25M*				HIVAC50.25M*
HIVAC50.25S*				HIVAC50.25S*
HIVAC50.50M*				HIVAC50.50S*
HIVAC50.50M*				HIVAC50.50M*
HIVAC50.50S*				HIVAC50.50S*
HIVAC44.15M*		**HIVAC44.1**		HIVAC44.15S*
HIVAC44.26M*				HIVAC44.26S*
HIVAC44.44M*				HIVAC44.44MS*
HIVAC62.62M*		**HIVAC62.1**		HIVAC62.62S*
HIVAC104.78M*		**HIVAC104.1**		HIVAC104.78S*
HIVAC104.15M*				HIVAC104.15S*
HIVAC104.104M*				HIVAC104.104S*

** Type of application: G, D or S (See Code Numbering System).*
*** For high density: 1 Male HIVAC adapter with 1 Female HIVAC adapter.*

Example: HIVAC37.2x9MS



Example: HIVAC50.2x9MMS