

MISSION-CRITICAL
INTERCONNECT
SOLUTIONS

Glenair®



Glenair
SIGNATURE SERIES

יום עיון מחברים אלקטרו-מכניים

גלנאייר ישראל - ערן אגמי

11.4.2024

www.Glenair.co.il

Connector ?

Basic Terms knowledge

- Plug and Receptacle
- Mating & Unmating
- Pin & Socket (male & Female gender only)
- Circular & Rectangular
- Threaded, Bayonet, Push Pull, Quick Disconnect.

מחבר ?

מושגים בסיסיים

- קבוע נייד, שקע תקע
- חיבור ניתוק
- מגע זכר ומגע נקבה (לא מעיד על סוג המחבר)
- עגול ומלבני
- הברגה, רבע סיבוב, דחיפה ומשיכה, חיבור/ניתוק מהיר

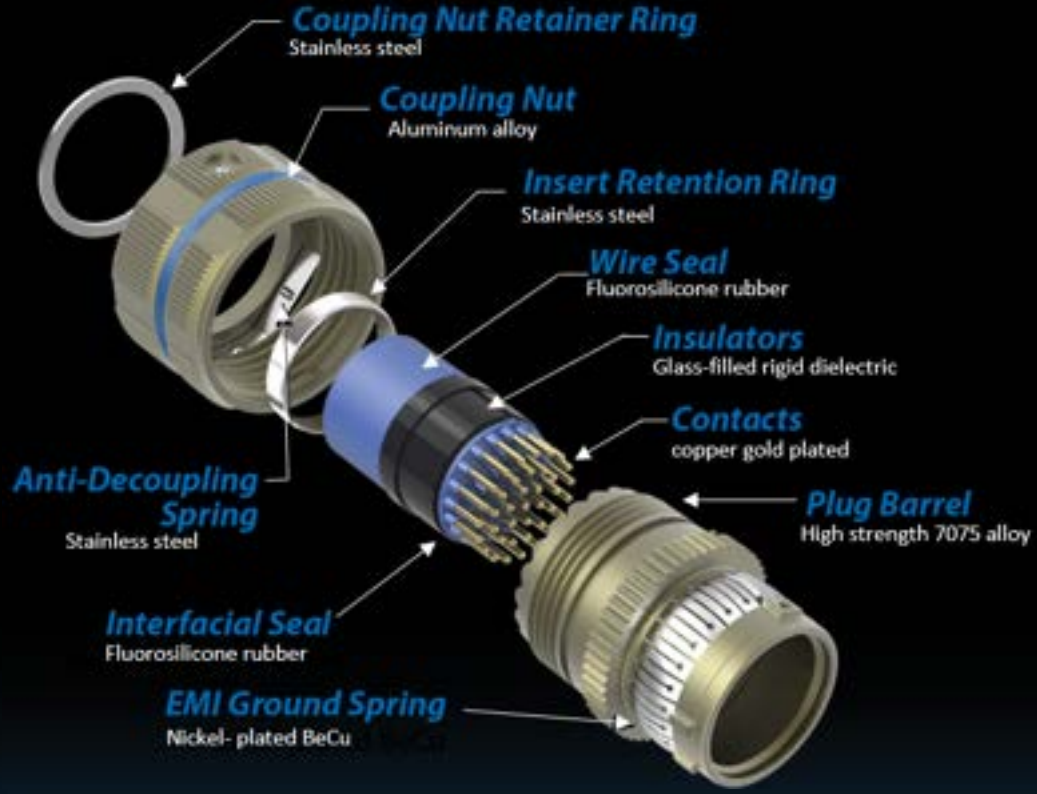
Glenair
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SERIES
806
MIL-AERO



**Series 806 Mil-Aero: the New Standard in Micro
Miniature Circular Connectors for Harsh Applications**

מבנה המחבר Plug



מבנה המחבר Receptacle



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כתיבת מפרט למחבר

באילו מקרים נידרש בכתיבת מפרט למחבר?

אין סיבה לכתוב מפרט כאשר המחבר קטלוגי או מפרט אזרחי/צבאי כבר קיים

- במידה ולא קיים או לא מצאנו מחבר בשוק העונה על כל הדרישות
- במידה וקיים מחבר אבל המפרט שלו אינו עונה על כל הדרישות ניתן לכתוב מפרט גישור, במפרט שכזה נציין את המק"ט ונתרכז רק בנושאים הרלוונטיים שאינם מכוסים ע"י המפרט
- כאשר נרצה מספר יצרנים לאותו הפריט נייצר מפרט דרישות מחייבות לתאימות מלאה ביניהם
- מצבים בהם הלקוח מחייב מחבר ייעודי וייחודי לתוכנית, או כאשר דורשים שליטה מלאה ברכיבים מכל סיבה

איך כותבים מפרט למחבר?

הדרישות נגזרות מן המערכת ומוסיפים דרישות ספציפיות למחבר



Page 11 of 34

CONNECTORS, ELECTRICAL, RECTANGULAR,
MICROMINIATURE
BASED ON TYPE MEM

ESCC Detail Specification No. 3401A29

Issue: 19

January 2022



Document Condition: European Space Agency - see <https://esa.europa.eu>

■ דרישות מבחינה סביבתית

■ דרישות מכניות ונתונים הקשורים בחוויית המשתמש

■ דרישות חשמליות, אופטיות ופרוטוקולים למיניהם

■ מפרטים שיש לעמוד בהם מבחינת איכות ו/או חומרים



Glenair Israel

בדיקות הנדרשות להוכחת עמידה במפרט

בדיקות מחברים ייגזרו מן המפרט אך יותאמו גם לתקנים עולמיים ייעודיים למחברים

- תקנים עולמיים, אזוריים או צבאיים, לעיתים יציינו דרישות ספציפיות למחברים
- מעבדות בעלות ניסיון במחברים ידעו להכווין לסוג הבדיקה הנדרשת
- לעיתים לא נידרש בבדיקה מכיוון שבדיקה דומה כבר נעשתה וניתן יהיה לאשר זאת כך

דוגמא למפרט בדיקות סביבתיות

Category	Test Type	Passing Requirement	What does it test?
	Altitude Immersion, pressure cycling, saltwater	Passing DWV and IR afterward	sealing function of mated connector and wire entry
Environmental	Altitude, low temp, 100,000 ft, -4°C	Passing DWV, IR during exposure	effectiveness of grommet and interface seals
	High Temperature Life, 200°C, 1000 hours	Pass Humidity afterward	Simulates accelerated aging.
	Thermal Shock, Ice water to 90°C water	No Damage. Maintain hermeticity	Hermetic glass sealing surviving rapid expansion and contraction.
	Thermal Cycling, -65° to 200°C	No visible damage	non-metallic insulating material functioning at temp extremes .
	Humidity, 240 hours,	Passing DWV and IR	effectiveness of elastomeric seals against water vapor (permeability)
	Salt Spray, 500 hours	No corrosion, no exposure of base metal	Accelerated aging corrosion resistance of metallic material
	Firewall, direct flame, 20 minutes	No flame passing through, electrical function	Ability of plug connector and conduit to withstand direct flame
	Fluid immersion - fuel, hydraulic, coolant, solvent	Passing DWV and IR	non-metallic material's surviving applicable chemical exposures
	Hermeticity(Air Leakage), 10^{-7} cc/sec	EIA-364-02	functionality of hemetically glass sealed assembly
	Sand and dust	Passing Coupling / decoupling	connector's ability to mate and un mate in sandstorm condition
SO ₂ + salt mist, 336 hours (not required by 38999)	No corrosion, no exposure of base metal	connector metallic resistance to sulfur dioxide from fuel exhaust	

דוגמא למפרט בדיקות מכניות

Category	Test Type	Passing Requirement	What does it test?
Mechanical	Random Vibration, 43.7 G RMS @200°C	No Electrical or optical discontinuity, no decoupling or physical damage	Connector anti-decoupling feature resistance against temp relaxation and jet engine level vibration
	Shock(standard), 300 G	No discontinuity, no damage	Standard operating shock test.
	Shock(high impact), 1200 G	No discontinuity, no damage	Simultes surviving indirect detonation
	Pyrotechnic shock, 3000-25,000 G	No discontinuity, no damage	simulates Rocket staging separation and spacecraft re-entry
	Impact, 4 ft drop, 8 times	No Damage	composite connector ability to survive getting dropped on hard floor
	M28876 Crush test, 281 lbs, 7 cycles	Change in Optical transmittance during	capability of M28876 fiber optic connector to be run over by vehicles
	M28876 Cable Pull out force, 162 lbs, 10 minutes	Change in Optical transmittance during	M28876 fiber optic cable assembly ability to withstand cable pulling
	Bending moment, composite connector, 1000 lbs	No Damage	composite series III connector to withstand hanging weight

דוגמא למפרט בדיקות חשמליות

Category	Test Type	Passing Requirement	What does it test?
Electrical	Dielectric Withstanding Voltage, various	No Current leakage over 2 mA	Connector inserts to withstand short duration high AC voltage
	Insulation Resistance, 500 volts DC	5,000 MΩ minimum resistance	Detects cracks or contamination in the insulators
	Contact Resistance (Voltage Drop) per AS 39029	Variable size-dependent resistance limits	Performed after vibration and shock to detect damage to contacts
	AS 39029 contact Current carrying capacity	Temp Rise, resistance at current	Measures temperature rise from applying high level current
	EMI shielding effectiveness, 100K Hz-10 G Hz	85 dB @ 1,000 G Hz, 65 dB@10G Hz	Connector/cable assembly shielding electromagnetic interference
	Indirect Lightning Strike, 10,000 A	No Damage	Cable shield termination/backshell/connectors conducting lightning

דוחות בדיקה ומפרטים ניתן למצוא באתר גלנאייר

[Click here for Test Reports and Technical Information](#)



Smart Battery and Data Management for Soldier C4ISR Devices

Advanced Air Mobility / eVTOL Interconnect Solutions
Aerospace-Grade Connectors for Electric and Hybrid Aircraft

Navy / Shipboard Topside Interconnect Solutions
20840, 20876, 24738, and Other DCA / NAVSEA QPL Connector

Rugged Bayonet-Lock Industrial Power Connectors
Nuclear, Mining, Rail, and Military Vehicle Connectors

Mil-Spec Grade / Aerospace-Grade Connectors

Mil-Spec Qualified Circular Connectors and Seals
MS, DT, 3099N, SuperShield, Series 306, M2040 and M2041

Mil-Spec QPL and Signature Rectangular Connectors
Micro D • Nano • D-Sub • S-79 Micro-Crimp • HD Stack

Micro Miniature Circular Connectors for SWAP
Micro 30999 Mil Aero (3-00 Mighty Mouse, SuperFly), Nano

High-Speed Digital Connectors, Contacts and Cables
MS Aero Data Bus, Ruggedized Ethernet, USB, HDMI and more

Hermetic Seal Connectors: QPL Circular / Rectangular
Glaze for Metal Seal and Lightweight CODE RED Solutions

EMI / RFI Filter Connectors and EMP Suppression
Planar Array Power and Signal Filter Connectors, TVS Solutions

Technical Reference, Test Reports, and Compliance

- Quality System Certification
- Compliance, Accreditation, and Warranty Documentation
- Privacy Policy Statement
- Terms and Conditions of Sale
- Purchase Order - General Terms and Conditions
- **Test Reports and Technical Information**
- Connector / Backshell Materials and Finishes
- National Stock Number Cross Reference
- Military Standard Part Numbers Available From Glenair
- Glenair Video Library

Market Communications

- Catalog Library and Downloads
- Product Data Sheets

Glenair. MISSION CRITICAL INTERCONNECT SOLUTIONS

Test Reports and Technical Information

These reports are for information purposes only. GT Adaptors are not revision controlled. For more detailed information regarding our products, testing procedures, and complete test reports please contact the factory.

[Technical Support](#)

Test Reports and Technical Information on this page...

- Application Notes
- Environmental Test Laboratory
- Technical Information
- Test Reports by Interconnect Series

Test Reports by Interconnect Series

- Series 22 High-Pressure Environmental and Hermetic Connector
- Series 22 SuperShield MS-DTL 30999 Type Connector
- Series 26 HHP-04 MS-DTL 24356 Type Connector
- Series 79™ Micro-Crimp Rectangular Connector
- Series 80 Mighty Mouse Micro Miniature Cylindrical Connectors and Cables
- Series 85 E1 D2NHL High-Speed Octal Contact
- Series 85 Verbalink™ High-Speed Connector
- Series 94 TapedShield Power Distribution Cable
- Series 107 Braided Ground Strap
- Series 170 HHS 021 800 13 Military-D Standard Connector
- Series 304 Micro Miniature Circular Connector
- Series 970 Power Strip™ Connector
- Series 972 PowerLine™ Backlog and Integrated Drive Connector
- Series C2-HD Backlog™ Board-to-Board Connector
- Series IT31 Onoblock™ Inboard E-Thread Connector
- EMISMP Filter Connector
- EMIRFI Factor Expandable Braided Shielding
- Glenair G82734 Wire, MIL Spec M22759 equivalent
- SE-Microseal, and mil/Space Interconnect
- Speedbender™ High-Speed 50G Connector
- STAR-PAN™ USB Hub and Power Distribution System



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מה חשוב לקחת בחשבון
כשבוחרים מחבר ?

שיקולים בבחירת מחבר



אורך חיים /
זמן פעולה נדרש

קיימת דרישה לסטנדרטים?

מי מרכיב את הכבל ?

משתמש סופי (כמידה ונדרש)

כמויות לפיתוח ולייצור

לו"ז - פיתוח וייצור

שיקולי עלויות

דרישות תאלמ"ג (EMI/EMP)

הגבלות בגודל, משקל ונפח

יש לקחת בחשבון גישה נוחה
לחיבור ולניתוק

מה עובר במחבר ?

- זרמים ומתחים גבוהים
- סיגנלים
- פרוטוקולים
- אופטיקה
- RF

כמות מגעים

מחבר נגדי/כבל/חוטאים /

סיבים הוגדרו מראש ?

- כן
- לא

דרישות אטימות

- סביבתי
- IP67
- הרמטי
- מצב פתוח/מצב סגור

סוג החיבור הנדרש

- חיבור עיוור
- חיבור/ניתוק מהיר
- הכרעה
- חיבור עם כלים

מספר חיבורים וניתוקים

- מי מחבר ומנתק
- גישה למחבר

סוג האפליקציה

- אווירית
- יבשתית
- ימית
- חללית

מיקום באפליקציה

- פנימי
- חיצוני

תנאי סביבה

- טמפרטורה
- רעידות/הלמים
- לחות/מלח

דרישות ציפוי וחומרים

- עמידות סביבה
- חוזק מכני
- תקנים נדרשים RoHS
- תאימות גליונית

סוג האפליקציה

חללית



אווירית



ימית



יבשתית



מיקום באפליקציה

COMMERCIAL AIRCRAFT

Electrical Wiring Interconnect Systems

Aircraft Zones and Glenair Signature Series Interconnect Technologies

This interconnect design and application guide is broken down into traditional aircraft zones as defined in RTCA/DO-160. Interconnect technology for individual sections and equipment sets within each zone is presented in enough detail to enable EWIS designers to understand the broad range of options available and make sound specifications within each area of responsibility. Leveraging the talents of EWIS engineer Bob Johnson, Glenair has developed a number of Signature Interconnect technologies for commercial aircraft, which are presented in the context of each zone.

AIRCRAFT ZONES:	
1. Fuselage	
2. Instrument Panel Console and Equipment Rack	
3. Nacelle and Pylon	
4. Engine and Gear Box	
5. Wing and Wheel Well	
6. Landing Gear	
7. Empennage and Vertical Stabilizer Tip	
8. Cabin Interior Volume	

To assist designers in the specification of appropriate interconnect components for use in each zone, each spread in this document presents applicable "DO-160 Environmental Conditions and Test Procedures for Airborne Equipment," and the Glenair interconnect technologies that meet or exceed these requirements. As application guidelines for key environmental stress factors including vibration, shock, ground survival temperature, pressure differential, operating temperature, and moisture can change with each zone, only those applicable specification references are noted.

DO-160, ENVIRONMENTAL CONDITIONS AND TEST PROCEDURES FOR AIRBORNE EQUIPMENT AND AIRCRAFT ZONES

Effective EWIS design is best accomplished by aligning DO-160, Environmental Conditions and Test Procedures for Airborne Equipment, with the empirical environmental performance levels targeted for each zone, section, and equipment set on the aircraft.

ZONE 1: FUSELAGE

Pressurized
Fluids - Condensation, Humidity
Typical Temperature Range -65° to +95°C
Moderate Dynamic Vibration Range
Flammability, Smoke, and Toxicity Requirements

ZONE 2: INSTRUMENT PANEL, CONSOLE, AND EQUIPMENT RACK

Pressurized
Fluids - Condensation, Humidity
Typical Temperature Range -65° to +95°C
Moderate Dynamic Vibration Range
Flammability, Smoke, and Toxicity Requirements

ZONE 7: EMPENNAGE AND VERTICAL STABILIZER TIP

High Vibration
Extreme Temperature Range
-55° to +200°C
De-Icing Exposure
Wide Pressure Changes

ZONE 8: CABIN INTERIOR VOLUME

Pressurized
Fluids - Condensation, Humidity
Typical Temperature Range -65° to +95°C
Moderate Dynamic Vibration Range
Flammability, Smoke, and Toxicity Requirements

ZONE 6: LANDING GEAR

High Vibration
Wide Temperature Range
-55° to +150°C
Fluid Exposure
Wide Pressure Changes

ZONE 4: ENGINE AND GEAR BOX

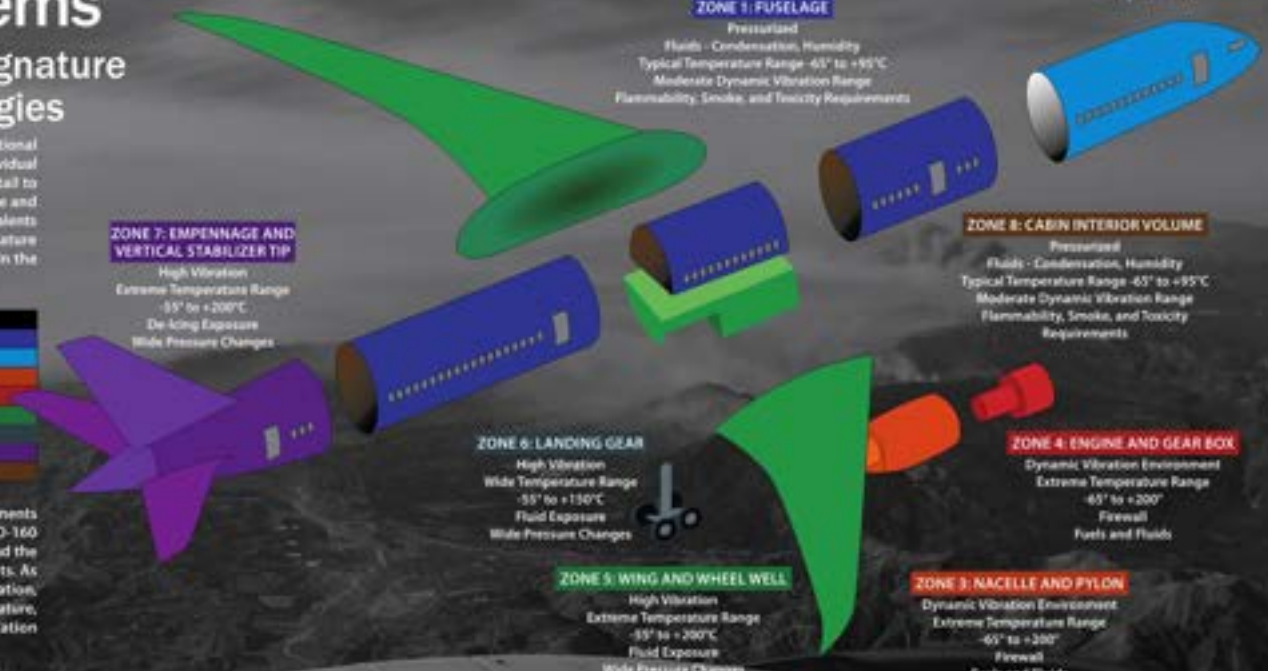
Dynamic Vibration Environment
Extreme Temperature Range
-65° to +200°
Firewall
Fuels and Fluids

ZONE 5: WING AND WHEEL WELL

High Vibration
Extreme Temperature Range
-55° to +200°C
Fluid Exposure
Wide Pressure Changes

ZONE 3: NACELLE AND PYLON

Dynamic Vibration Environment
Extreme Temperature Range
-65° to +300°
Firewall
Fuels and Fluids

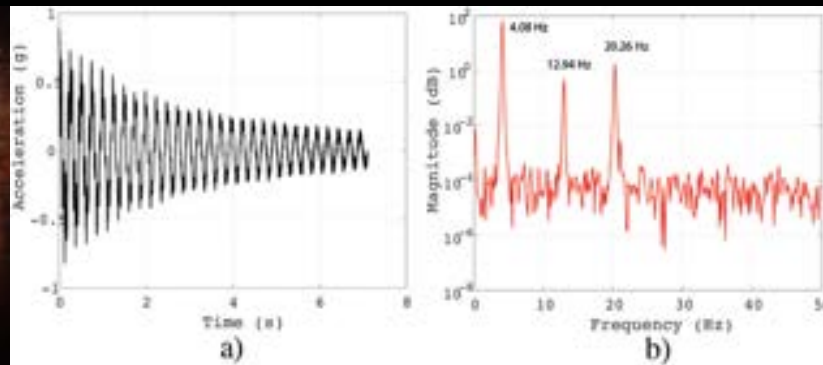


תנאי סביבה במיקום הנבחר

לחות/מלח

רעידות/הלמים

טמפרטורה



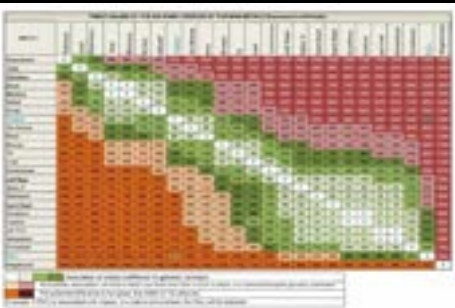
דרישות ציפוי וחומרים

תאימות
גלונית

תקנים
נדרשים

חוזק
מכני

עמידות
סביבה



Code	Material	Finish	Finish Specification	Salt Spray Hours	Electrical Conductivity	Operating Temp. Range	RoHS	Notes
AB	Marine Bronze	Unplated	AMS4640 alloy, unplated	1000	Conductive	-65° to +200°C	✓	Marine and geo-physical applications.
C	Aluminum	Anodize, Black	MIL-PRF-8625, Type II, Class 2	336	Non-Conductive	-65° to +200°C	✓	Glenair's standard black anodize finish.
E	Aluminum	Chem Film, Gold	MIL-DTL-5541, Type I, Class 3	168	Conductive	-65° to +125°C		Glenair's standard chem film finish.
ER	Aluminum	Chem Film, Clear	MIL-DTL-5541, Type II, Class 3	168	Conductive	-65° to +125°C	✓	Glenair's RoHS compliant chem film finish.
G	Aluminum	Hard Anodize, Natural	MIL-PRF-8625, Type III, Class 1	500	Non-Conductive	-65° to +200°C	✓	Glenair's standard hard anodize finish.
GB4	Aluminum	Hard Anodize, Black, w/ PTFE	MIL-PRF-8625, Type III, Class 2, Black, with PTFE coating	500	Non-Conductive	-65° to +200°C	✓	MIL-PRF-28876 standard non-conductive finish
JF	Aluminum	Cadmium, Yellow-Gold	AMS-QQ-P-416, Type II, Class 2, over electroless Nickel	500	Conductive	-65° to +175°C		Glenair's standard yellow-gold Cadmium finish.
LF	Aluminum	Cadmium, Clear	AMS-QQ-P-416, Type II, Class 2, over electroless Nickel	500	Conductive	-65° to +175°C		Glenair's standard clear Cadmium finish.
M	Aluminum	Electroless Nickel	AMS-C-26074, Grade B; ASTM B733, 5C 2	48	Conductive	-65° to +200°C	✓	Glenair's standard electroless Nickel finish.
MA	Aluminum	Electroless Nickel, Matte	AMS-C-26074, Grade A; ASTM B733, 5C 3	96	Conductive	-65° to +200°C	✓	Glenair's standard high-build matte electroless Nickel finish.
ME	Aluminum	Electroless Nickel	AMS-C-26074, Grade A; ASTM B733, 5C 3	96	Conductive	-65° to +200°C	✓	Glenair's standard high-durability electroless Nickel finish.
MT	Aluminum	Nickel-PTFE	AMS2454	500	Conductive	-65° to +200°C	✓	Glenair's standard electroless Nickel-PTFE finish.
NC	Aluminum	Zinc-Cobalt, Olive Drab	ASTM B840, over electroless Nickel	240	Conductive	-65° to +175°C	✓	Not recommended for new projects. ZN is preferred.
NF	Aluminum	Cadmium, Olive Drab	AMS-QQ-P-416, Type II, Class 2, over electroless Nickel	500	Conductive	-65° to +175°C		Glenair's standard olive drab Cadmium finish.
TP2	Titanium	Electrodeposited Nickel	AMS-QQ-N-290, Class 1, Grade G	96	Conductive	-65° to +200°C	✓	Glenair's standard electrodeposited Nickel over Titanium.
TZ	Aluminum	Tin-Zinc, Green-Gold	AMS2434, Type 2, over electroless Nickel	500	Conductive	-65° to +175°C	✓	Glenair's recommended Cadmium-compatible replacement
UF	Aluminum	Cadmium, Black	AMS-QQ-P-416, Type II, Class 2, over electroless Nickel	500	Conductive	-65° to +175°C		Glenair's standard black Cadmium finish.
XB	Composite	Unplated, Black	[N/A]	2000	Non-Conductive	-65° to +175°C	✓	Glenair's standard unplated composite.
XM	Composite	Electroless Nickel	AMS-C-26074, Grade B; ASTM B733, 5C 2	2000	Conductive	-65° to +200°C	✓	Glenair's standard electroless Nickel over composite.
XMT	Composite	Nickel-PTFE	AMS2454	2000	Conductive	-65° to +200°C	✓	Glenair's standard electroless Nickel-PTFE over composite.
XW	Composite	Cadmium, Olive Drab	AMS-QQ-P-416, Type II, Class 3, over electroless Nickel	2000	Conductive	-65° to +175°C		Glenair's standard olive drab Cadmium over composite.
XZN	Composite	Zinc-Nickel, Black	ASTM B840, over electroless Nickel	2000	Conductive	-65° to +175°C		Glenair's standard black Zinc-Nickel over composite.
Z1	Stainless Steel	Passivate	AMS2700	500	Conductive	-65° to +200°C	✓	Glenair's standard passivated stainless steel
Z2	Aluminum	Gold	MIL-DTL-45204, Class 1, over electroless Nickel	48	Conductive	-65° to +200°C	✓	Glenair's standard Gold finish.
ZL	Stainless Steel	Electrodeposited Nickel	AMS-QQ-N-290, Class 2	500	Conductive	-65° to +200°C	✓	Glenair's standard electrodeposited Nickel over SST
ZM	Stainless Steel	Electroless Nickel	AMS-C-26074, Grade A	1000	Conductive	-65° to +200°C	✓	Glenair's standard electroless Nickel over stainless steel.
ZMT	Stainless Steel	Nickel-PTFE	AMS2454	1000	Conductive	-65° to +200°C	✓	Glenair's standard electroless Nickel-PTFE over SST.
ZN	Aluminum	Zinc-Nickel, Olive Drab	ASTM B840, over electroless Nickel	500	Conductive	-65° to +175°C	✓	Glenair's standard olive drab Zinc-Nickel.
ZR	Aluminum	Zinc-Nickel, Black	ASTM B840, over electroless Nickel	500	Conductive	-65° to +175°C	✓	Glenair's standard black Zinc-Nickel finish.
ZU	Stainless Steel	Cadmium, Black	AMS-QQ-P-416, Type II, Class 2	500	Conductive	-65° to +175°C		Glenair's standard black Cadmium over stainless steel.
ZW	Stainless Steel	Cadmium, Olive Drab	AMS-QQ-P-416, Type II, Class 2, over electroless Nickel	500	Conductive	-65° to +175°C		Glenair's standard olive drab Cadmium over stainless steel.
ZZR	Stainless Steel	Zinc-Nickel, Black	ASTM B840, over electroless Nickel	500	Conductive	-65° to +175°C	✓	Glenair's standard black Zinc-Nickel over stainless steel.

AS85049
Material and Finish Codes

AS85049 Class	Glenair Code	Material	Finish
A	C (G)	Aluminum	Anodize
B	ZU	Stainless Steel	Cadmium, Black
G	MA	Aluminum	Electroless Nickel, Matte
J	XW	Composite	Cadmium, Olive Drab
L	XX	Composite	Cadmium, Olive Drab (yel.)
M	XM	Composite	Electroless Nickel
N	M	Aluminum	Electroless Nickel
P	NFP	Aluminum	Cadmium, Olive Drab (yel.)
S	Z1	Stainless Steel	Passivated
T	XO	Composite	No Plating
V	TZ	Aluminum	Tin-Zinc
VC	XTZ	Composite	Tin-Zinc
VL	XTS	Composite	Tin-Zinc, Selective
VP	TS	Aluminum	Tin-Zinc, Selective
VS	ZTZ	Stainless Steel	Tin-Zinc
W	NF	Aluminum	Cadmium, Olive Drab
X	MT	Aluminum	Nickel-PtFE
XC	XMT	Composite	Nickel-PtFE
XS	ZMT	Stainless Steel	Nickel-PtFE
Y	AL	Aluminum	Alumiplate
YC	XAL	Composite	Alumiplate
YL	XAP	Composite	Alumiplate (selective)
YP	ALP	Aluminum	Alumiplate (selective)
YS	ZAL	Stainless Steel	Alumiplate
Z	ZR	Aluminum	Zinc-Nickel, Black
ZC	XZR	Composite	Zinc-Nickel, Black
ZL	XZS	Composite	Zinc-Nickel, Black (selective)
ZP	ZS	Aluminum	Zinc-Nickel, Black (selective)
ZS	ZZR	Stainless Steel	Zinc-Nickel, Black

MIL-DTL-28840
Material and Finish Codes

M28840 Class	Glenair Code	Material	Finish
A	NF	Alum.	Cadmium, Olive Drab
B	ZU	316 SS	Cadmium, Black
C	NF	Alum.	Cadmium, Olive Drab
E	ZU	316 SS	Cadmium, Black
F	AL	Alum.	Alumiplate
G	AL	Alum.	Alumiplate
L	TZ	Alum.	Tin-Zinc
M	TZ	Alum.	Tin-Zinc
S	ZR	Alum.	Zinc-Nickel, Black
U	ZR	Alum.	Zinc-Nickel, Black

MIL-DTL-38999
Material and Finish Codes

M38999 Class	Glenair Code	Material	Finish
A	JF, LP	Aluminum	Cadmium, Clear Chromate
B	NF	Aluminum	Cadmium, Olive Drab
C	G	Aluminum	Hardcoat Anodize
D	FT	Steel	Passivated
E	Z1	Stainless Steel	Passivated
F	M	Aluminum	Electroless Nickel
G	MA	Aluminum	Electroless Nickel, Matte
H	Z1	Stainless Steel	Passivated
J	XW	Composite	Cadmium, Olive Drab
K	Z1	Stainless Steel	Passivated
L	ZL	Stainless Steel	Electrodeposited Nickel
M	XM	Composite	Nickel
N	ZL	Stainless Steel	Electrodeposited Nickel
R	ME	Aluminum	Electroless Nickel
S	ZL	Stainless Steel	Electrodeposited Nickel
T	MT	Aluminum	Nickel-PtFE
V	TZ	Aluminum	Tin-Zinc
U	JF	Aluminum	Cadmium, Clear Chromate
W	NF	Aluminum	Cadmium, Olive Drab
Y	Z1	Stainless Steel	Passivated
Z	ZR	Aluminum	Zinc-Nickel, Black

MIL-DTL-83723
Material and Finish Codes

M83723 Class	Glenair Code	Material	Finish
A	G	Aluminum	Hardcoat Anodize
G	Z1	Stainless Steel	Passivated
H	FT	Steel	Tin
J	FT	Steel	Tin
K	Z1	Stainless Steel	Passivated
L	ZL	Stainless Steel	Electrodeposited Nickel
M	AL	Aluminum	Alumiplate
N	ZL	Stainless Steel	Electrodeposited Nickel
P	Z1	Stainless Steel	Passivated
R	M	Aluminum	Electroless Nickel
S	Z1	Stainless Steel	Passivated
T	MT	Aluminum	Nickel-PtFE
W	NF	Aluminum	Cadmium, Olive Drab
Y	Z1	Stainless Steel	Passivated
Z	ZR	Aluminum	Zinc-Nickel, Black

AS50151
Material and Finish Codes

AS50151 Class	Glenair Code	Material	Finish
A	NF	Aluminum	Cadmium, Olive Drab
B	NF	Aluminum	Cadmium, Olive Drab
C	NF	Aluminum	Cadmium, Olive Drab
D	NF	Aluminum	Cadmium, Olive Drab
DI	NF	Aluminum	Cadmium, Olive Drab
DI	ZU	Stainless Steel	Cadmium, Black
DIS	ZU	Stainless Steel	Cadmium, Black
DSN	ZL	Stainless Steel	Electrodeposited Nickel
DT	MT	Aluminum	Nickel-PtFE
DV	TZ	Aluminum	Tin-Zinc
DY	AL	Aluminum	Alumiplate
DZ	ZR	Aluminum	Zinc-Nickel, Black
E	NF	Aluminum	Cadmium, Olive Drab
F	NF	Aluminum	Cadmium, Olive Drab
H	SM	Steel	Electroless Nickel
HT	FT	Steel	Passivated
K (Bolt)	SN	Steel	Cadmium, Olive Drab
K (Oring)	SM	Steel	Electroless Nickel
KT	SN	Steel	Cadmium, Olive Drab
L	M	Aluminum	Electroless Nickel
P	NF	Aluminum	Cadmium, Olive Drab
R	NF	Aluminum	Cadmium, Olive Drab
U	M	Aluminum	Electroless Nickel
W	NF	Aluminum	Cadmium, Olive Drab
WT	MT	Aluminum	Nickel-PtFE
WY	AL	Aluminum	Alumiplate
WZ	ZR	Aluminum	Zinc-Nickel, Black
X	NF	Aluminum	Cadmium, Olive Drab

EN 2997
Material and Finish Codes

EN 2997 Class	Glenair Code	Material	Finish
K	Z1	Stainless Steel	Passivated
KE	Z1	Stainless Steel	Passivated
KV	Z1	Stainless Steel	Passivated
R	M	Aluminum	Electroless Nickel
RS	M	Aluminum	Electroless Nickel
S	Z1	Stainless Steel	Passivated
SE	Z1	Stainless Steel	Passivated
SV	Z1	Stainless Steel	Passivated
W	NF	Aluminum	Cadmium, Olive Drab
WS	NF	Aluminum	Cadmium, Olive Drab
Y	Z1	Stainless Steel	Passivated
YE	Z1	Stainless Steel	Passivated

AS81703
Material and Finish Codes

AS81703 Class	Glenair Code	Material	Finish
E	M	Aluminum	Electroless Nickel
H	FT	Steel	Tin
L	M	Aluminum	Electroless Nickel

MIL-DTL-26482
Material and Finish Codes

M26482 Class	Glenair Code	Material	Finish
A	G	Aluminum	Hardcoat Anodize
H	FT	Steel	Passivated
K	MT	Aluminum	Zinc-Nickel, Black
L	M	Aluminum	Electroless Nickel
N	FT	Steel	Passivated
T	MT	Aluminum	Nickel-PtFE
V	TZ	Aluminum	Tin-Zinc
W	NF	Aluminum	Cadmium, Olive Drab

MIL-DTL-24308
Accessory Finish Codes

M24308 Finish	Glenair Code	Material	Finish
A	AL	Aluminum	Alumiplate
F	JF	Aluminum	Cadmium, Yellow Chromate
K	ZR	Aluminum	Zinc-Nickel, Black
T	MT	Aluminum	Nickel-PtFE
P	Z1	Stainless Steel	Passivated
Z	YS	Aluminum	Zinc-Nickel, Black

MIL-DTL-83513
Accessory Finish Codes

M83513 Finish	Glenair Code	Material	Finish
A	AL	Aluminum	Alumiplate
C	JF	Aluminum	Cadmium, Yellow Chromate
K	ZR	Aluminum	Zinc-Nickel, Black
N	M	Aluminum	Electroless Nickel
P	Z1	Stainless Steel	Passivated
T	MT	Aluminum	Nickel-PtFE

דרישות אטימות

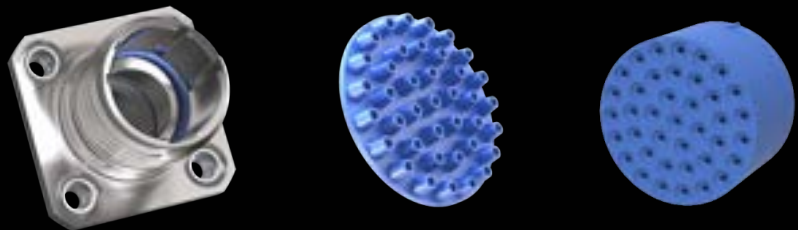
מצב
פתוח/סגור

לחץ / הרמטי

IP67/8

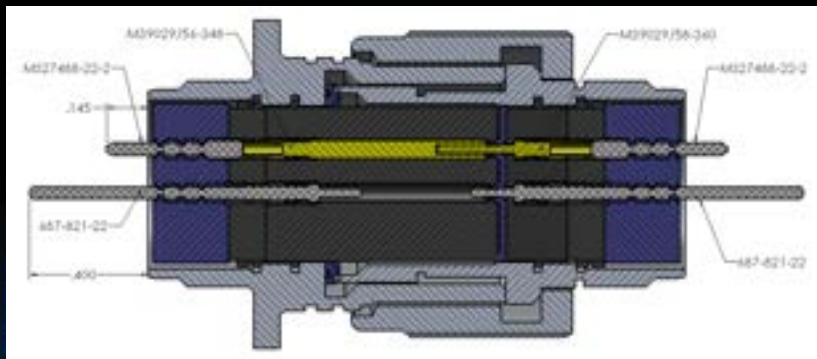
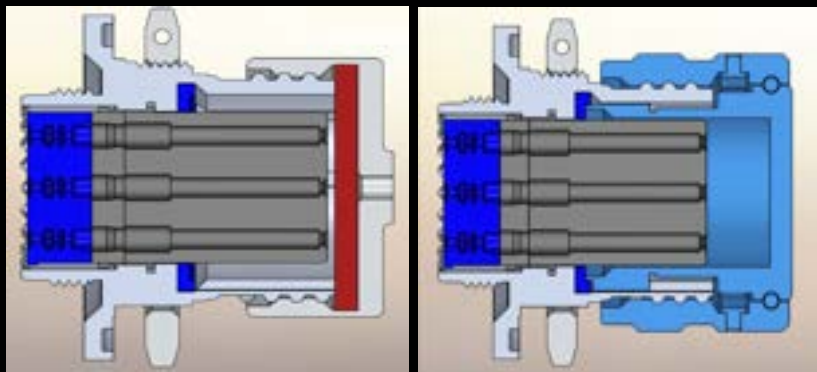
סביבתי





אטימות

יבש וטוב לו



- מניעת לחות
- IP67
- מניעת קורוזיה במגעים
- מניעת קצרים
- הארכת חיים
- Altitude immersion
- ללא כל הפינים - אין אטימות מלאה

אטימה הרמטית

אטימות לגזים ולחצים גבוהים

■ בדיקת אטימות בהליום

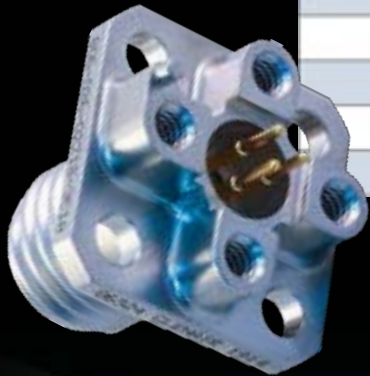
■ אטימה בהמסת זכוכית

■ חומר המחבר פלדה

■ פינים מחומר אחר בביצועים ירודים

CODE RED

Std cc/sec Approximate	Approximate Bubble Equivalent
1 x 10 ⁻¹	1 cc/10 sec
1 x 10 ⁻²	1 cc/100 sec
1 x 10 ⁻³	1 cc/hour
1 x 10 ⁻⁴	1 cc/3 hours
1 x 10 ⁻⁵	1 cc/24 hours
1 x 10 ⁻⁶	1 cc/2 weeks
1 x 10 ⁻⁷	3 cc/year
1 x 10 ⁻⁸	1 cc/3 year
1 x 10 ⁻⁹	1 cc/30 years
1 x 10 ⁻¹¹	1 cc/3000 years

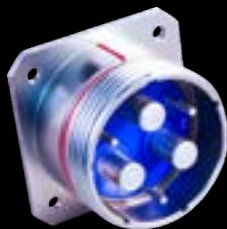


סוג החיבור הנדרש

חיבור עם
כלים



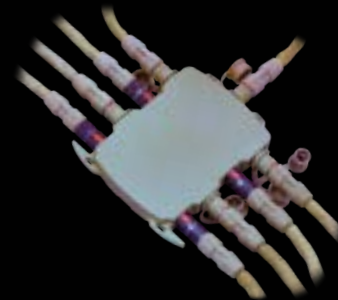
הברגה



ביונט



חיבור/ניתוק
מהיר



חיבור
עיוור



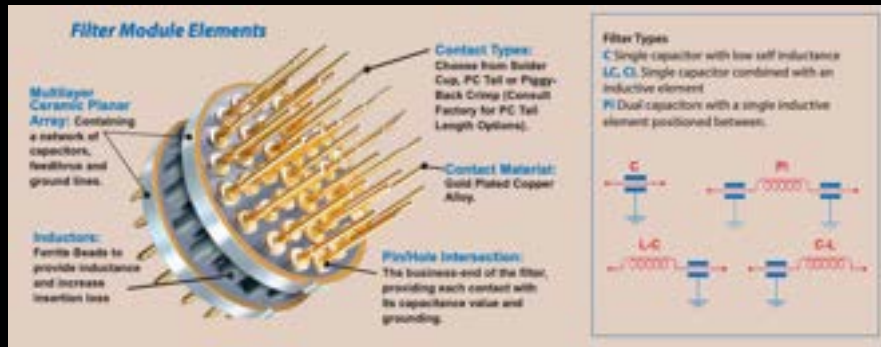
מס' חיבורים וניתוקים

מי מחבר ומנתק ?



דרישות תאלמ"ג

EMI/EMP



SERIES 240

**EMI/EMP Filter
Connectors**

FOR MIL-DTL-38999 AND OTHER MIL-AERO INTERCONNECTION SYSTEMS



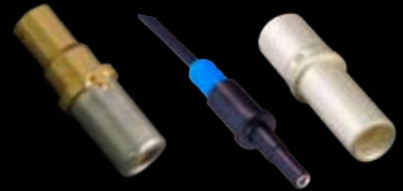
הגבלות בגודל, משקל ונפח

יש לקחת בחשבון גם גישה נוחה לחיבור וניתוק



מה עובר במחבר ?

זרמים ומתחים גבוהים סיגנלים פרוטוקולים אופטיקה RF



כמות וגודל מגעים

Series 806 Size 20HD Contacts Arrangements (1800 VAC, 7.5 A)							
Mating face of pin connector. Socket numbering is reversed.							
Symbol ▼ indicates master key location.							
Arrangement No.	8-3	9-5	10-8	11-10	12-15	14-20	16-31
No. of Contacts	3	5	8	10	15	20	31
Series 806 Size 22HD and 8 Combo Contact Arrangements							
Mating face of pin connector. Socket numbering is reversed.							
Symbol ▼ indicates master key location.							
Arrangement No.	14-20A	16-22	18-21	20-28	22-44	24-97	
No. of #22 Contacts	19	20	18	24	40	93	
No. of #16 Contacts	1	2	3	4	4	4	

מחבר נגדי/כבל/חוטטים/סיבים הוגדרו מראש?



אורך חיים/זמן פעולה נדרש



קיימת דרישה לסטנדרטים?



MIL-DTL-38999



מי מרכיב את הכבל ?

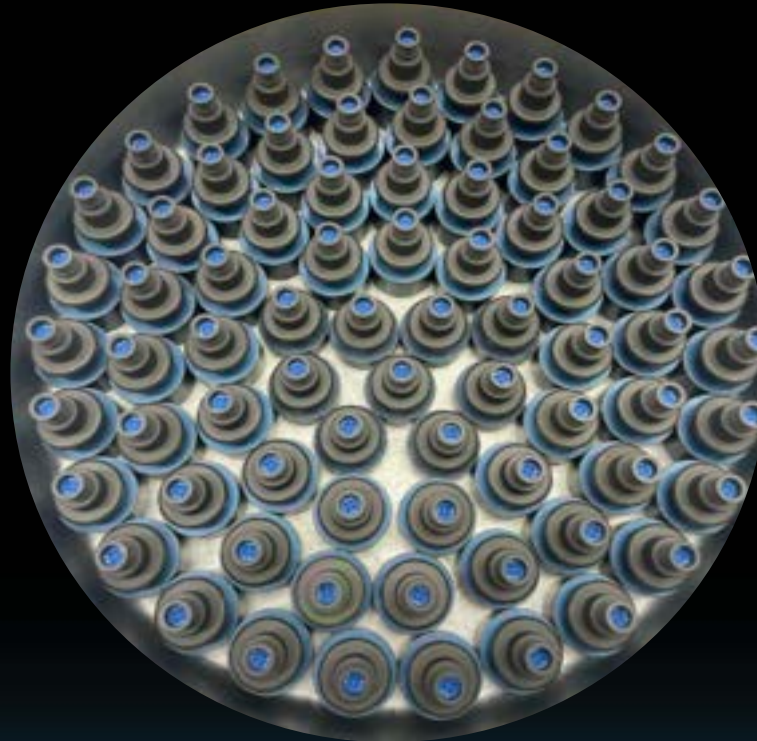


משתמש סופי (במידה ונדרש)

End User Certificate



כמויות לפיתוח ולייצור



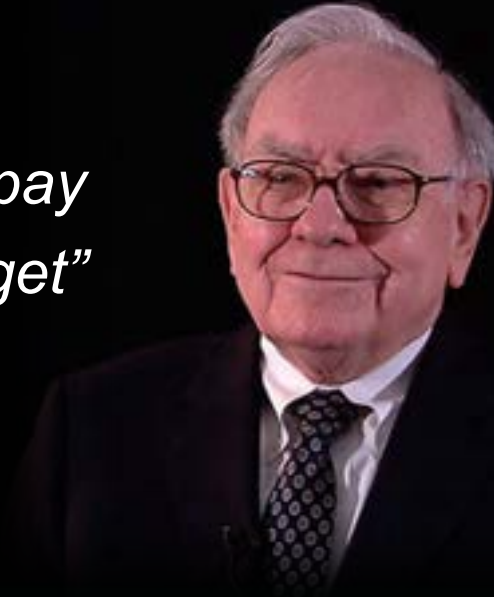
לו"ז - פיתוח וייצור



שיקולי עלויות

*“Price is what you pay
Value is what you get”*

Warren Buffett



המצגת כבר אצלכם... אך מה בנוגע לנושאים אחרים?

אנו מזמינים אתכם להגיע לימי השתלמות בנושאים שונים בכתת ההדרכות שלנו או אצלכם



Glenair
ISRAEL

ההשתלמויות שאנו מציעים

- יסודות המתבר
- פתרונות חיבור אופטיים
- פתרונות חיבור לרזום ומתחים גבוהים
- EMI / EMC / EMP
- פתרונות חיבור למערכות ימיות
- פתרונות חיבור למערכות חלל
- פתרונות חיבור למערכות תעופתיות
- פתרונות חיבור למערכות עבאיות
- HighSpeed
- RF & Microwave
- תכן כבילה וחיווט

* את המוצגות ניתן לזרז בבית דפדוף, מותו מומלצת ישרי
כולאלי ישראל, מומלצת
** כל המוצגות נותנת להעמדה ושינויים ללא הודעה



Glenair
ISRAEL

קטלוג ההשתלמויות

www.Glenair.co.il

המוקד 03-3061200

לקבלת הקטלוג, תיאום הדרכה
ו/או שאלות נוספות כתבו לנו
בכתובת:

info@glenair.co.il

או בטלפון 09-3061200

MISSION-CRITICAL
INTERCONNECT
SOLUTIONS

Glenair®



Glenair
SIGNATURE SERIES

יום עיון מחברים אלקטרו-מכניים

גלנאייר ישראל - ערן אגמי

11.4.2024

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