INCH-POUND

MIL-PRF-64266/27
3 February 2014

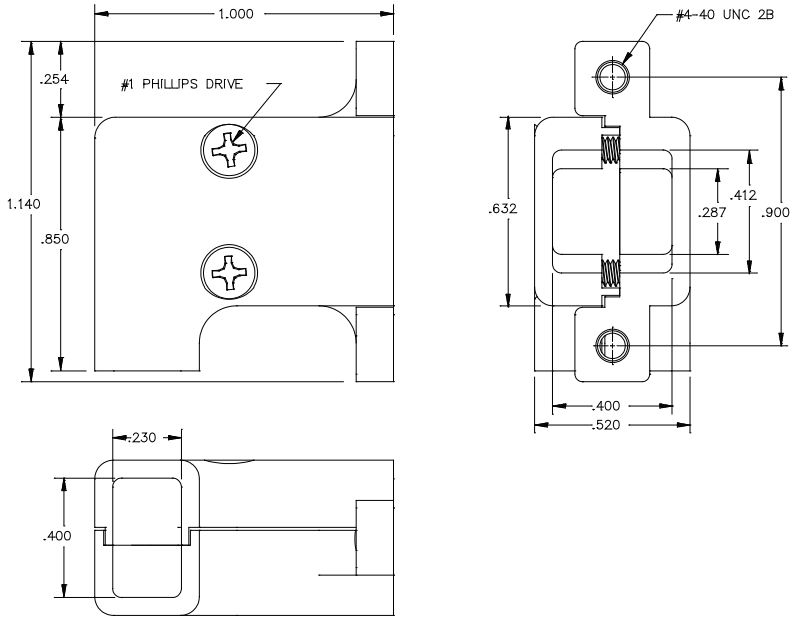
PERFORMANCE SPECIFICATION SHEET

CONNECTORS, FIBER OPTIC, RECTANGULAR, MULTIPLE REMOVABLE TERMINI, SINGLE FIBER CABLES, RECEPTACLE BACKSHELL, BACKPLANE STYLE, NO STRENGTH MEMBER CAPTURE AT CABLE ENTRY INTERFACE, NONENVIRONMENT RESISTING, TEMPERATURE RANGES 1 & 2

This specification is approved for use by all Departments and Agencies of the Department of Defense.

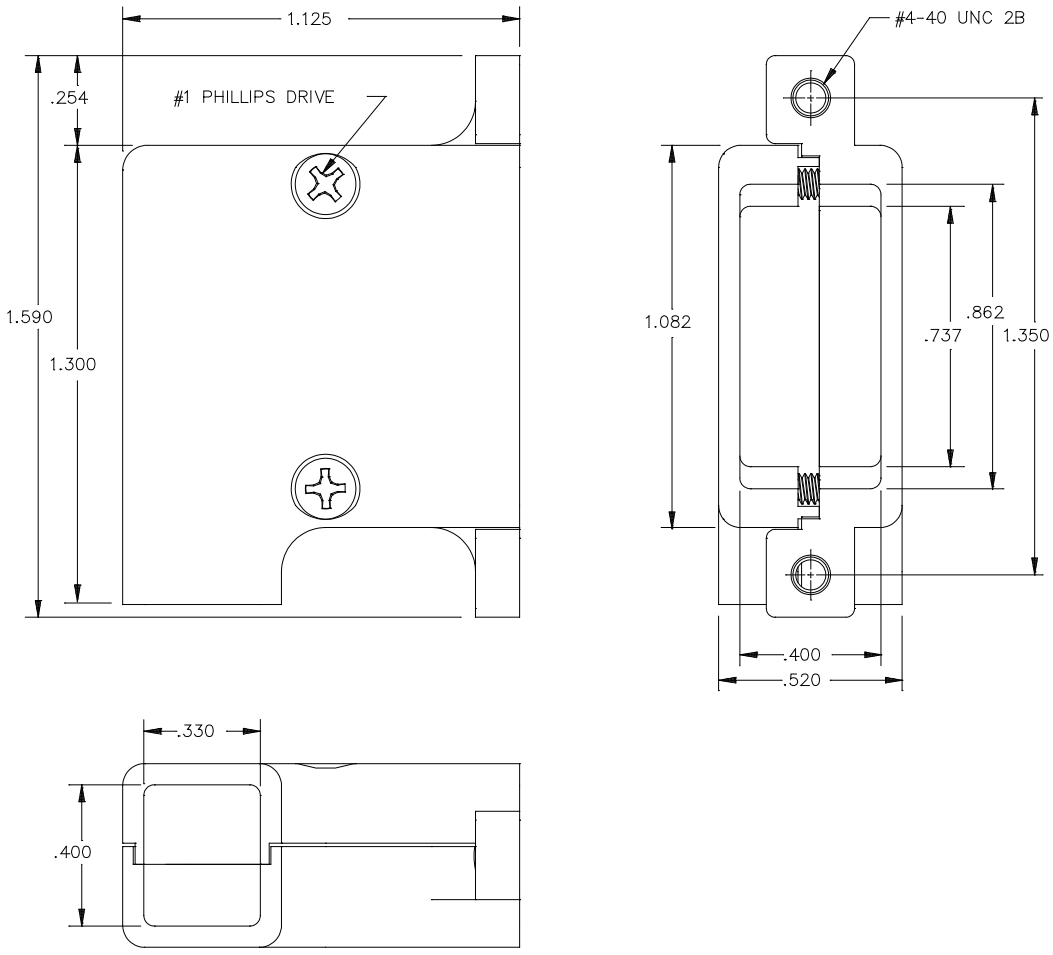
The requirements for acquiring fiber optic connectors described herein shall consist of this specification sheet and MIL-PRF-64266.

SCOPE. The performance requirements specified herein cover a connector receptacle backshell that is affixed to the connector receptacle. The type of connector receptacle is one mounted to the back edge of a circuit card or printed circuit board (PCB). The mating connector plug is affixed to a backplane PCB, affixed to a motherboard, or mounted directly onto the back edge of a circuit card rack. Cable entry resistant features for the single fiber cables entering this backshell include ability to restrict movement, position, and twist; however, there are no features to capture the cabling or to prevent the penetration of various environments.



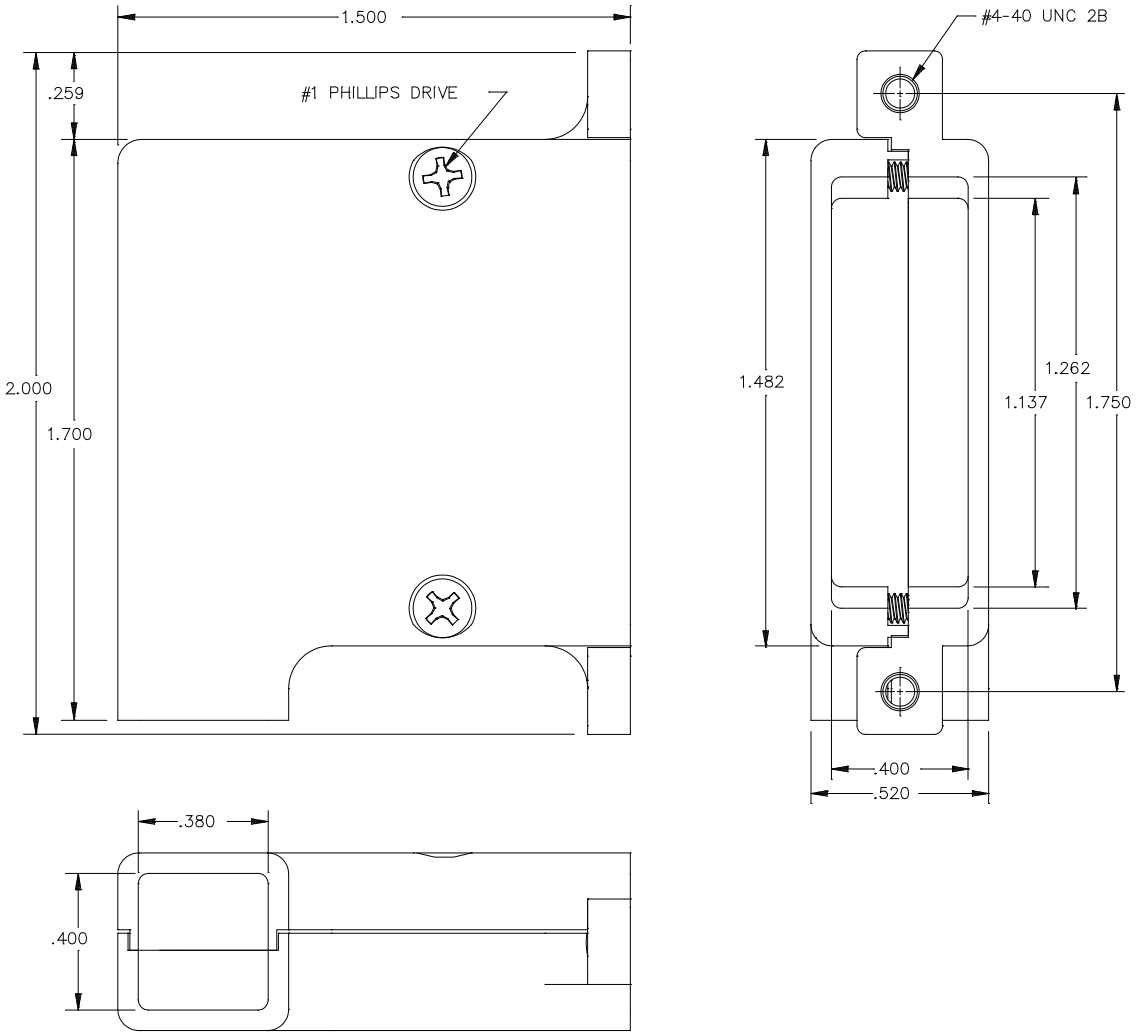
Four Cavity Connector

FIGURE 1. Footprint dimensions.



Eight Cavity Connector

FIGURE 1. Footprint dimensions - Continued.



12 Cavity Connector

FIGURE 1. Footprint dimensions - Continued.

Notes:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Dimensions apply to plated/finished part.
4. Metric equivalents are in millimeters (mm).
5. Connector receptacle backshell internal configuration is not shown. The interface of the connector receptacle backshell to connector receptacle shall be compatible with the connector receptacle dimensions shown in figure 1 of MIL-PRF-64266/24.
6. The two halves of the connector receptacle backshell shall be fastened using a number 01 Phillips screwdriver.
7. Envelop length dimensions are specified to one decimal place to expedite inspection process unless otherwise indicated.

FIGURE 1. Footprint dimensions - Continued.

REQUIREMENTS:

Dimensions and configurations. See figure 1 herein.

Temperature ranges.

Operating:	-67°F to 329°F	(-55°C to 165°C)
Non-operating:	-40°F to 168°F	(-40°C to 70°C)
Storage:	-40°F to 168°F	(-40°C to 70°C)

Weight. Weight shall not exceed the specified value in table I for the applicable number of cavities and material. The backshell size corresponds to the number of cavities in the affixed connector receptacle.

TABLE I. Connector receptacle backshell weight.

Cavity designator	No. of cavities	Composite		Aluminum		Stainless steel	
		ounces	grams	ounces	grams	ounces	grams
U	04	.018	5	.32	9	.84	24
V	08	.21	6	.42	12	1.23	35
W	12	.32	9	.67	19	1.90	54

Fabrication procedure. Standard fabrication procedure for the assembly of the connector and backshell onto the fiber optic cabling shall be used. Standard fabrication procedure shall be in accordance with MIL-STD-1678-4. Copies of these documents are available online at http://quicksearch.dla.mil/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

Orientation for receptacle backshell-to- receptacle. The connector receptacle backshell shall be constructed to permit the connector receptacle backshell to be affixed to the connector receptacle in only one of two orientations (each 180 degrees from the other).

Backshell configurations. The configuration for the connector receptacle backshell shall be straight (i.e., cable entry end shall be at a 180 degree angle to the backshell-to-connector interface).

Backshell cable restraint features. Connector receptacle backshells qualified to this specification sheet shall include the backshell being configured with a cable restraint platform. At a minimum, the cable restraint features shall include an external lip to allow adherence of heat shrink.

Backshell means of attachment. The means and interface dimensions to ensure that a backshell remains affixed or coupled to a connector receptacle are shown in figure 1 of MIL-PRF-64266/24. The envelop dimensions for the backshell shall be the footprint dimensions in figure 1. This coupling shall be sufficient to ensure no backing off of the backshell during mechanical shock or vibration.

Backshell strain relief material. Each backshell shall be supplied with one piece of SAE AMS-DTL-23053/5 heat shrink, a minimum of 2 inches in length (before shrinkage), shall be provided with each connector receptacle backshell as part of the PIN (see Markings below). Each piece of heat shrink shall permit shrinkage directly over the cable restraint platform on the backshell where the cabling exits the backshell.

Cable diameter range. Cable entry end opening shall accommodate the specified number of single fiber cables with the diameter ranges specified in MIL-PRF-85045/31 for the specified number of termini cavities of the affixed connector.

Qualification. Qualification shall consist of performing testing as part of the connector receptacle per specification sheet MIL-PRF-64266/24. There is no separate qualification for only the connector receptacle backshell.

Identification marking. Applicable. Both initial and after environmental testing.

Backshell and backshell accessory attachment. Not applicable.

Cable pull-out force. Not applicable.

External bending moment. Not applicable.

Cable seal flexing. Not applicable.

Twist. Not applicable.

Backshell mating durability. Not applicable.

Impact. Not applicable.

Crush. Not applicable.

Water pressure. Not applicable.

Banding strap attachment integrity. Not applicable.

Compression fitting engagement integrity. Not applicable.

Freezing water. Not applicable.

Sand and dust. Not applicable.

Electromagnetic effects. Not applicable.

Salt spray. Applicable.

Shell-to-shell conductivity. Not applicable.

Modified SO_2/salt spray. Not applicable.

Altitude immersion. Applicable.

Fluid immersion. Not applicable.

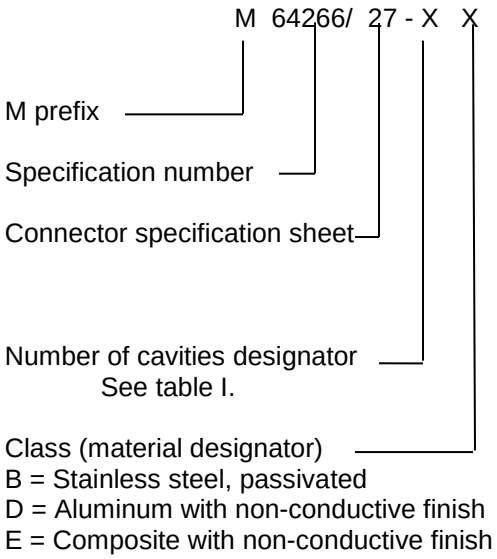
Qualification by similarity.

Alternate material. If a backshell in this specification sheet made from aluminum is qualified, and backshells made from composite or stainless steel in this specification sheet meet the alternative material inspections in the MIL-PRF-64266/24 specification sheet when tested with the MIL-PRF-64266/24 connector receptacle, then the backshell of the alternate material inspected is qualified.

Alternate plating or plating process. If a backshell with one plating or plating process in this specification sheet is qualified, and backshells made with a alternate (different type) plating or same type plating using an alternate plating process in this specification sheet meet the alternative material inspections in the MIL-PRF-64266/24 specification sheet when tested with the MIL-PRF-64266/24 connector receptacle, then the backshell with the alternate plating or plating process, as applicable, inspected is qualified.

Marking.

Part or Identification Number (PIN). Marked on shell of the backshell.



PIN example: M64266/27-UC

Installation and removal tools. Termini shall be inserted onto the connector and terminated onto the fiber optic cables using only the tools and equipment listed in MIL-STD-1678-6 for the termini termination and connector assembly procedures.

Mating counterpart connector. M64266/24

Referenced documents. In addition to MIL-PRF-64266, this specification sheet references the following documents:

MIL-PRF-64266/24
MIL-STD-1678-4
MIL-STD-1678-6
MIL-PRF-85045/31
SAE AMS-DTL-23053/5
MIL-PRF-28876

Standardization based on lessons learned. For the older, existing fiber optic, multiple termini connectors; each vendor has a different mechanism and assembly process. The logistic support is taxing the system. For instance, at several JFOWG (Joint Fiber Optic Working Group) meetings, the Navy school house reported that training on the MIL-PRF-28876 connector assembly took a significant portion of the time and cost for the fiber optic curriculum. This leads to logistic difficulties in adding new training material and obtaining (paying for) parts needed in this connector assembly. The implementation of this lesson learned is that the connector configuration and assembly process for any new connector and any new backshell configuration introduced must be standardized to the maximum extent feasible.

Heat shrink for backshell. The term "heat shrink sleeve" shall be used in this specification sheet as the generic term for material placed on the cable entry end of the backshell. Uses for this material may include a means to restrict cable twist and to provide a degree of limiting the bend placed in the cable as it exits the backshell.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - AS
Air Force – 11
DLA – CC

Preparing activity:
DLA - CC

(Project 6060-2013-027)

Review activities:
Navy - AS
Air Force - 13, 19, 93, 99
DIA - DI
NASA - NA

NOTE: The activities listed above were interested in this document on the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.dla.mil.