



## KF85 Series Vertical PCB Mount Low Profile with Ferrite High Frequency EMI/RFI Suppression

### Ordering Information

|        |   |            |                      |   |                    |              |   |                  |         |
|--------|---|------------|----------------------|---|--------------------|--------------|---|------------------|---------|
| KF85   | - | B          | D                    | - | 25                 | S            | - | K                |         |
| Series |   | Shell Size | Contact Construction |   | Number of Contacts | Contact Type |   | Mounting Options | Plating |

#### Series

KF85-Kycon D-Subminiature Connector, Vertical PCB Termination with Ferrite

#### Shell Size

E-9 Contacts  
A-15 Contacts  
B-25 Contacts  
C-37 Contacts

#### Contact Construction

D-Precision Formed

#### Number of Contacts

9, 15, 25, 37

#### Contact Type

P-Pin Contact (Plug)  
S-Socket Contact (Receptacle)

#### Mounting Options

K-with Riveted Threaded (4-40) Bushings  
KJ-with Riveted Threaded (4-40) Bushings and (4-40) Hex Jack Screws Installed  
BR-with (4-40) Riveted Threaded Tin Plated Board Lock  
BRJ-with (4-40) Riveted Threaded Tin Plated Board Lock and (4-40) Hex Jack Screws Installed  
R-with Round Riveted Jack Screws

Hex Jack Screws JS-1055 Recommended for BR Option.  
See page 38 for Dimensions.

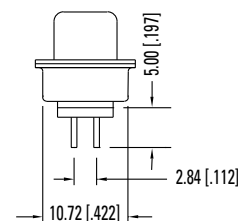
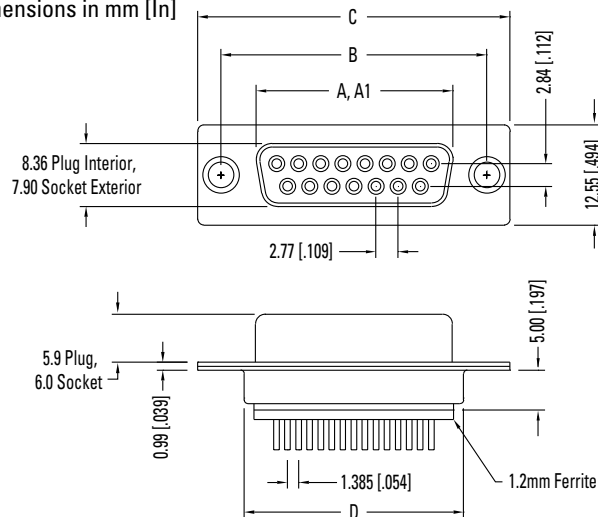
**Plating Options and Performance Specifications** (see page 4)

## FERRITE D-SUBMINIATURE

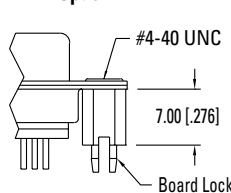
### KF85 Series

### KF85 Series Dimensions

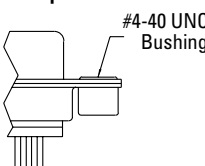
Dimensions in mm [In]



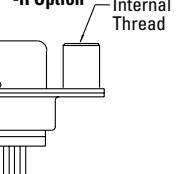
#### -BR Option



#### -K Option



#### -R Option



### Ferrite Specifications

| Test Frequency | Edge Hole  | Inner Hole |
|----------------|------------|------------|
| 30 Mhz         | 10-14 Ohms | 13-17 Ohms |
| 50 Mhz         | 12-18 Ohms | 15-19 Ohms |
| 100 Mhz        | 15-20 Ohms | 19-24 Ohms |

| Number of Contacts (Shell Size) | Dimensions (Inch/mm) |                |                |                |                |
|---------------------------------|----------------------|----------------|----------------|----------------|----------------|
|                                 | A                    | A1             | B              | C              | D              |
| 9 (E)                           | .643<br>16.33        | .666<br>16.92  | .984<br>24.99  | 1.213<br>30.81 | .755<br>19.18  |
| 15 (A)                          | .971<br>24.66        | .994<br>25.25  | 1.312<br>33.32 | 1.541<br>39.14 | 1.083<br>27.51 |
| 25 (B)                          | 1.511<br>38.38       | 1.534<br>38.96 | 1.852<br>47.04 | 2.088<br>53.04 | 1.614<br>41.00 |
| 37 (C)                          | 2.159<br>54.84       | 2.182<br>55.42 | 2.500<br>63.50 | 2.729<br>69.32 | 2.272<br>57.71 |

See K85 series for recommended PCB layout (page 13).

**A = Exterior of Female Shell (S)**

**A1 = Interior of Male Shell (P)**



## K85 Series Vertical PCB Mount and Soldercup

### Ordering Information

|        |   |            |  |                      |   |                    |  |              |   |                  |  |                 |
|--------|---|------------|--|----------------------|---|--------------------|--|--------------|---|------------------|--|-----------------|
| K85    | - | B          |  | D                    | - | 25                 |  | S            | - | K                |  |                 |
| Series |   | Shell Size |  | Contact Construction |   | Number of Contacts |  | Contact Type |   | Mounting Options |  | Plating Options |

#### Series

K85-Kycon D-Subminiature Connector, Solder Cup or Vertical PCB Termination

#### Shell Size

E-9 Contacts  
A-15 Contacts  
B-25 Contacts  
C-37 Contacts

#### Contact Construction

| Designator | Contact Construction | Type of Termination      |
|------------|----------------------|--------------------------|
| A          | Precision Formed     | Solder Cup               |
| D          | Precision Formed     | Vertical Pin (PCB Mount) |

#### Number of Contacts

9, 15, 25, 37

#### Contact Type

P-Pin Contact (Plug)  
S-Socket Contact (Receptacle)

#### Mounting Options

K-with Riveted Threaded (4-40) Bushings  
KJ-with Riveted Threaded (4-40) Bushings and (4-40) Hex Jack Screws Installed  
BR-with (4-40) Riveted Threaded Tin Plated Board Lock  
BRJ-with (4-40) Riveted Threaded Tin Plated Board Lock and (4-40) Hex Jack Screws Installed  
R-with Round Riveted Jack Screws

Hex Jack Screws JS-1055 Recommended for BR Option.  
(See page 38 for Dimensions).

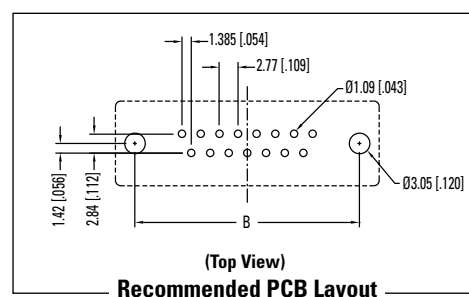
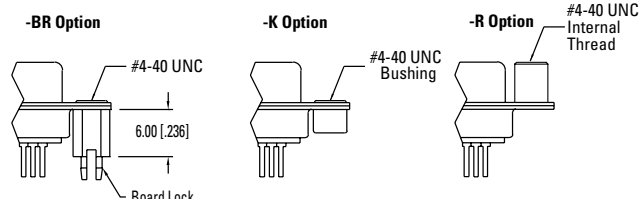
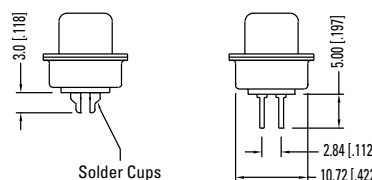
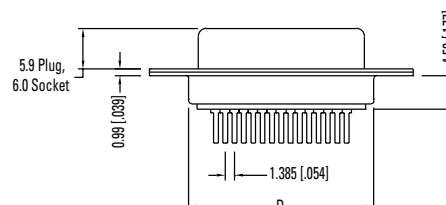
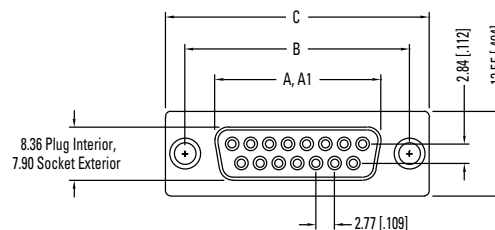
**Plating Options and Performance Specifications** (see page 4)

## D-SUBMINIATURE CONNECTORS

### K85 Series

### K85 Series Dimensions

Dimensions in mm [In]



| Number of Contacts (Shell Size) | Dimensions (Inch/mm) |                |                |                |                |
|---------------------------------|----------------------|----------------|----------------|----------------|----------------|
|                                 | A                    | A1             | B              | C              | D              |
| 9 (E)                           | .643<br>16.33        | .666<br>16.92  | .984<br>24.99  | 1.213<br>30.81 | .755<br>19.18  |
| 15 (A)                          | .971<br>24.66        | .994<br>25.25  | 1.312<br>33.32 | 1.541<br>39.14 | 1.083<br>27.51 |
| 25 (B)                          | 1.511<br>38.38       | 1.534<br>38.96 | 1.852<br>47.04 | 2.088<br>53.04 | 1.614<br>41.00 |
| 37 (C)                          | 2.159<br>54.84       | 2.182<br>55.42 | 2.500<br>63.50 | 2.729<br>69.32 | 2.272<br>57.71 |

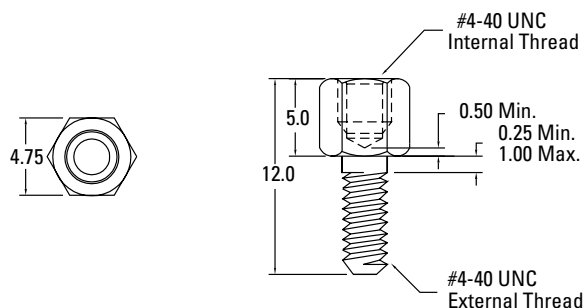
**A = Exterior of Female Shell (S)**  
**A1 = Interior of Male Shell (P)**

## D-Subminiature Hardware

Dimensions in mm

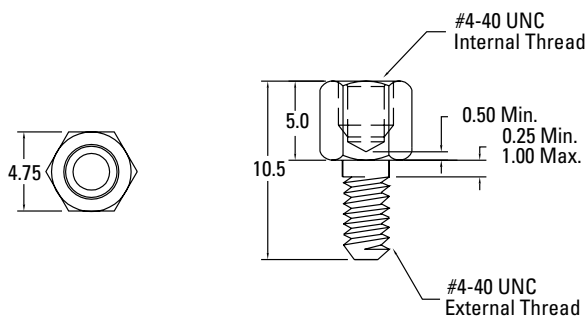
### JS-1000

4-40 Female Hex. Jack Screw Bulk (500/Bag)



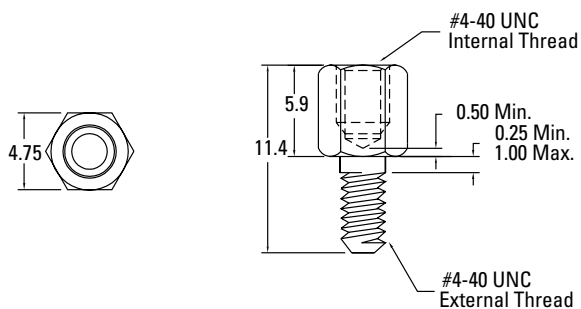
### JS-1055

4-40 Female Hex. Jack Screw Bulk (500/Bag)



### JS-1055-5.9

4-40 Female Hex. Jack Screw Bulk (500/Bag)

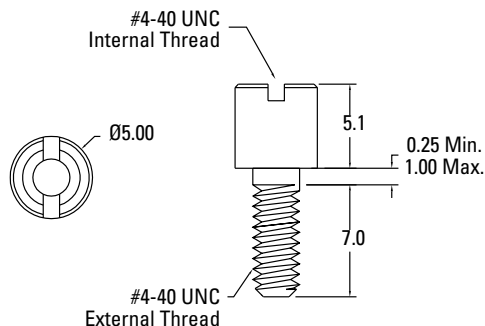


## D-SUBMINIATURE CONNECTORS

### Hardware

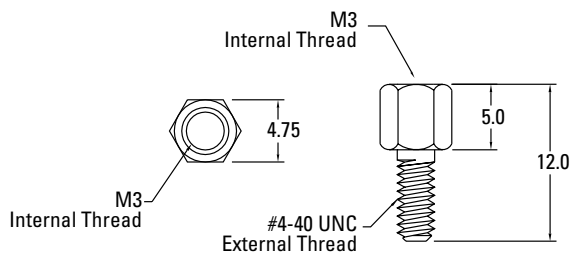
### JS-2000

4-40 Female Round Jack Screw Slotted Bulk (500/Bag)



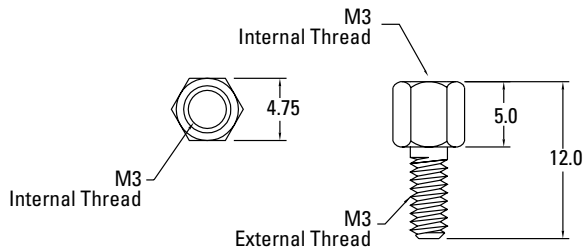
### JS-M3131

4-40 External,  
M3 Metric Internal Thread Jack Screw Bulk (500/Bag)



### JS-M3131M

M3 External,  
M3 Metric Internal Thread Jack Screw Bulk (500/Bag)



***KYCON continues its leadership in D-Subminiature connectors by offering a complete line of sizes and options.***

**PC99 Colors Available:**

- HD15: Blue
- DB15: Gold
- DB25: Burgundy
- DB09: Teal



## D-SUBMINIATURE CONNECTORS

### *Performance Specifications*

#### *Materials and Finish*

**Shell**

Steel Material, Tin Finish, and Indentations (Dimples) on Plug Only

**Insert**

Standard: PBT Thermoplastic, Black Color, 30% Glass Filled, 94V-0 Rated  
Reflow Compatible: High Temperature Thermoplastic, Black Color, 30% Glass Filled, 94V-0 Rated

**Contact Material**

Pin: Brass .040 (1.02) Diameter Standard; .030 (0.76) Diameter High Density  
Socket: Phosphor Bronze (Precision Formed Contact)  
Brass (Precision Machined Contact)

**Contact Finish-Standard**

Gold Flash Over 0.0001 (0.00254) Nickel on Mating End of Contacts  
Tin/Lead Over Nickel or Gold Flash Over Nickel on Solder Tails

**Riveted Insert**

Brass Material, Nickel Finish

#### *Mechanical Characteristics*

**Contact Retention**

Precision Machined Contact 10 Lbs, Precision Formed Contact 10 Lbs

**Contact Extraction Force**

Typ. 4 Oz.

**Contact Insertion Force**

Typ. 9 Oz.

**Durability**

1,000 Insertion Cycles Min (With Standard Plating)

**Operating Temperature Rating**

-55°C to +125°C

#### *Electrical Characteristics*

**Contact Current Rating**

Precision Machined Contact 7.6 Amps  
Precision Formed Contact 5.0 Amps (Except K99 Series)

**Contact Resistance**

Precision Machined Contact 5 Milliohms Max  
Precision Formed Contact 8 Milliohms Max

**Dielectric Withstanding Voltage**

1000 V AC Min for 1 Minute

**Insulation Resistance**

5000 Megohms Min

#### *Processing Characteristics*

**Soldering Temperature Rating**

High Temperature Plastic: 230°C for 30 Seconds, 260°C for 10 Seconds

#### *Plating Options*

| Designator | Plating Description                                                                                 |
|------------|-----------------------------------------------------------------------------------------------------|
| Standard   | Gold Flash over Nickel on Contacts. Gold Flash over Nickel or Tin/Lead over Nickel on Solder Tails. |
| 15         | 15µ" Gold over Nickel on Mating End of Contacts. Tin/Lead over Nickel on Solder Tails.              |
| 30         | 30µ" Gold over Nickel on Mating End of Contacts. Tin/Lead over Nickel on Solder Tails.              |

**KYCON continues its leadership in Ferrite D-Subs by offering a complete line of styles, sizes, and pin configurations.**

### Features:

- Applications include Computer Peripherals, Data Processing, Telecommunications, Industrial Controls, and Local Area Networks
- High performance ferrite filter with superior high frequency attenuation characteristics
- Minimal effect on fundamental waveforms
- EMI/RFI noise suppression in data communication lines
- Cost effective way to meet FCC and VDE Class B requirements
- Does not require any more board space than a standard D-Sub
- No need to redesign board layout to accommodate separate filter placement
- UL Recognized File No. E140125

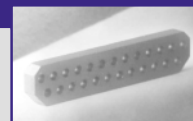


## FERRITE D-SUBMINIATURE CONNECTORS

### Directory

#### Right Angle

|                                             |           |
|---------------------------------------------|-----------|
| <b>KF22 - 0.318" footprint</b>              | <b>28</b> |
| <b>KF44 - 0.590" footprint</b>              | <b>29</b> |
| <b>KF66 - High Density 0.350" footprint</b> | <b>30</b> |
| <b>KF42 - Dual Port</b>                     | <b>31</b> |



#### Vertical

|                            |           |
|----------------------------|-----------|
| <b>KF85 - Low Profile</b>  | <b>32</b> |
| <b>KF86 - High Density</b> | <b>33</b> |
| <b>KF88 - High Profile</b> | <b>34</b> |



### Technical Information:

Ferrite filters provide an easy and efficient way of reducing both radiated and conducted interference. KYCON uses a medium permeability nickel zinc ferrite material that is most effective at attenuating frequencies above 30MHz.

$$Attenuation = 20 \log_{10} \frac{[Z_s + Z_F + Z_L]}{[Z_s + Z_L]} \text{ dB}$$

Where  $Z_s$  = Source Impedance

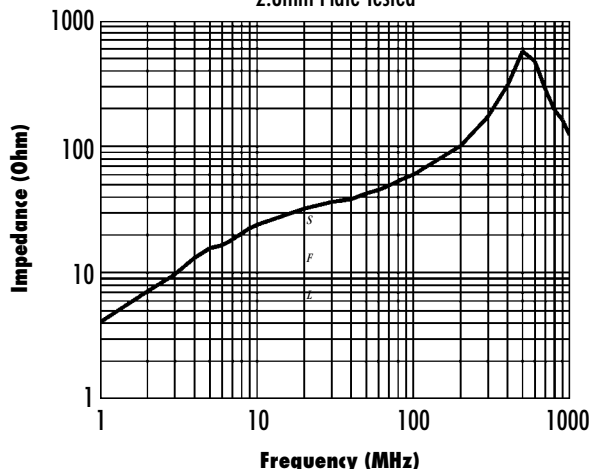
$Z_F$  = Ferrite Impedance

$Z_L$  = Load Impedance

With the above impedance values calculated at the interference frequency.

#### Typical Impedance of KYCON Ferrite D-Sub

2.8mm Plate Tested



The above chart is typical performance data for a 2.8mm thick ferrite plate at room temperature. Impedance will be reduced by increased temperature (down approx. 15% at 100°C at 25MHz) and by increased DC bias (down approx. 15% at 1 amp at 25MHz). Also, impedance varies with ferrite thickness. Please contact our technical support for data specific to your application.

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