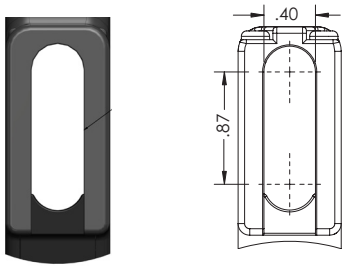
Tech Tip: Cable Bundle Wire

Use the formula provided to calculate the maximum wire bundle diameter. From this formula, the table below offers a sampling of the maximum number of wires that will fit in the oblong bushing.

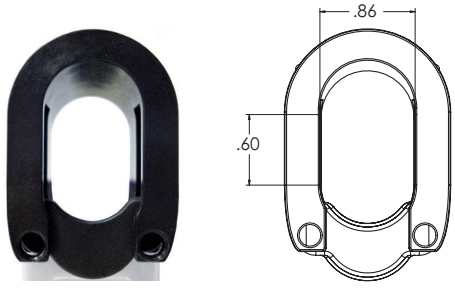
Wire bundle diameter (B) should not exceed the maximum oblong bushing effective diameter (A).

Formula to calculate approximate wire bundle diameter:

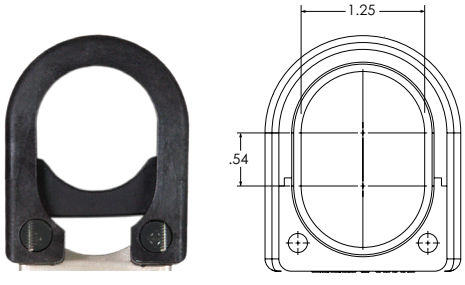
$B = 1.2\sqrt{(N_1d_1^2 + N_2d_2^2 + N_nd_n^2)}$		
B = Wire bundle diameter	N_1 = Number of first wire type N_2 = Number of second wire type N_n = Number of n^{th} wire type	d_1 = Outside Diameter of first wire type d_2 = Outside Diameter of second wire type d_n = Outside Diameter of n^{th} wire type



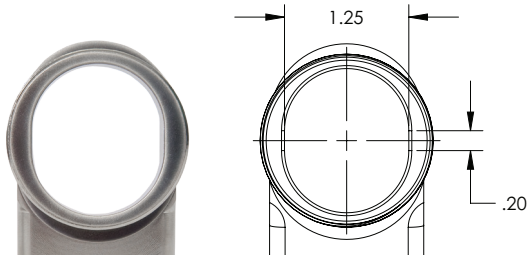
i2 Oblong Bushing Effective Diameter* (A) = .77" [19.5]



iCon Oblong Bushing Effective Diameter* (A) = 1.21" [30.7]



iCon with Large Cable Clamp Oblong Bushing Effective Diameter* (A) = 1.55" [39.3]
iCon960 Oblong Bushing Effective Diameter* (A) = 1.70" [43.1]



iConEMI and iCon with Threaded Coupling Adapter Oblong Bushing Effective Diameter* (A) = 1.37" [34.7]

Wire Type	Outside Diameter	iCon # Wires	Large iCon # Wires	iCon960 # Wires	iConEMI # Wires	i2 # Wires
24 AWG	.049 [1.24]	423	694	835	542	171
12 AWG	.159 [4.0]	40	65	79	51	16
RG178	.075 [1.9]	180	296	356	231	73
2 AWG	.486 [12.3]	--	7[1]	--	--	--

* Oblong Opening Area Converted to Simple Diameter

(1) For 410123122 eight positions may be used.

NOTE: Addition of shrink tubing or braid will reduce maximum number of wires through bushing.

NOTE: If the wiring bundle is too small to secure with the adjustable bushing, remove the clamp assembly within the bushing by removing the two adjustment screws. Reverse the direction of the clamp assembly and secure with the two screws. This provides a reduced diameter within the bushing and allows smaller wire bundles to be held securely.

NOTE: The number of wires listed for the iConEMI may be affected by the mating component.

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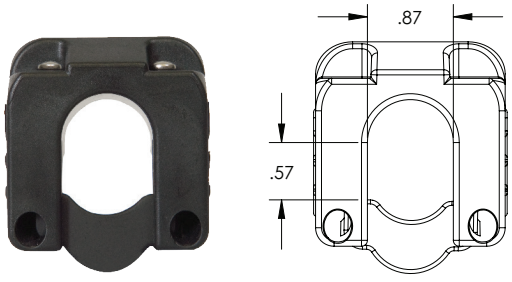
Use the formula provided to calculate the maximum wire bundle diameter. From this formula, the table below offers a sampling of the maximum number of wires that will fit in the oblong bushing.

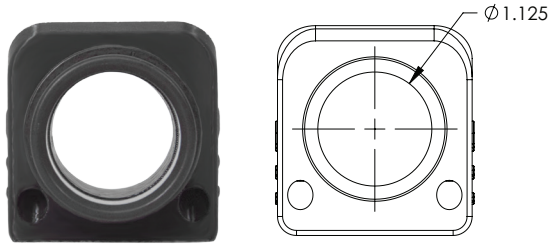
Wire bundle diameter (B) should not exceed the maximum oblong bushing effective diameter (A).

Formula to calculate approximate wire bundle diameter:

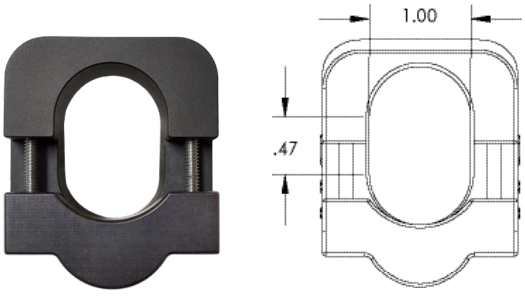
$B = 1.2 \sqrt{(N_1 d_1^2 + N_2 d_2^2 + N_n d_n^2)}$		
B = Wire bundle diameter	N_1 = Number of first wire type N_2 = Number of second wire type N_n = Number of n^{th} wire type	d_1 = Outside Diameter of first wire type d_2 = Outside Diameter of second wire type d_n = Outside Diameter of n^{th} wire type



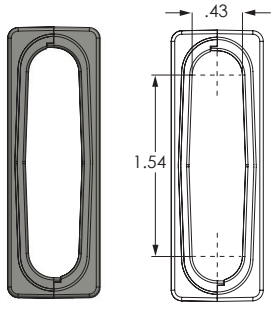
i1 Oblong Bushing Effective Diameter* (A) = 1.07" [27.1]



i1EMI Oblong Bushing Effective Diameter* (A) = 1.125" [28.5]



i1 with Large Cable Clamp Oblong Bushing Effective Diameter* (A) = 1.26" [32.0]



i2 MX Effective Diameter* (A) = 1.00" [25.4]

Wire Type	Outside Diameter	Large i1 # Wires	i1 # Wires	i1EMI # Wires	i2 MX # Wires
24 AWG	.049 [1.2]	459	331	366	289
12 AWG	.159 [4.0]	43	31	34	27
RG178	.075 [1.9]	196	141	156	123
2 AWG	.486 [12.3]	4	3	3	--
CAT6	.246 [6.2]	18	13	14	11

* Oblong Opening Area Converted to Simple Diameter

NOTE: Addition of shrink tubing or braid will reduce maximum number of wires through bushing.

NOTE: If the wiring bundle is too small to secure with the adjustable bushing, remove the clamp assembly within the bushing by removing the two adjustment screws. Reverse the direction of the clamp assembly and secure with the two screws. This provides a reduced diameter within the bushing and allows smaller wire bundles to be held securely.

NOTE: The number of wires listed for the i1EMI may be affected by the mating component.