

## 3 dB Hybrid Coupler, CA-x4 series

Special Guaranteed Low PIM Wireless Band Versions  
Narrow & Wide Bands from 380 - 2,700 MHz

- ◆ Guaranteed PIM performance
- ◆ High Isolation, Low VSWR and loss
- ◆ Single and Dual Band Ranges Tetra, SMR/PMR, Cellular, PCS and UMTS
- ◆ 200 Watt Average Power Rating
- ◆ High Reliability, Moisture sealed
- ◆ Convenient connector spacing and easy mounting to pole or wall



These Hybrid Couplers have been designed to meet the special needs of the wireless market. They are most commonly used to combine two wireless carriers in the band to a single antenna feed or distribution cable. This requires the termination of one output port in 50Ω and results in a 3 dB loss in each signal. In situations where two similar feeds are required, as required for an in-building application, both outputs may be used eliminating the need for a termination and the 3 dB loss. For powers to 400W see CA-86D.

Isolation is maximized while passive intermodulation (PIM) is minimized. Connectors, spaced to allow controlled wrench tightening, are available with alternate genders. See below for models with integral terminations. (11/09-2)

Coupling:	3 dB nominal
Impedance:	50Ω nominal
Environment:	-35 to +65°C, IP64 (IP67 to order)
Finish:	RoHS compliant
Housing:	Passivated aluminum
Connectors:	Triplate

Model Number	N conn	7-16mm	Frequency Range, MHz	Isolation dB	VSWR Max	Sensitivity dB	Dissipative Loss, dB	Guaranteed +PIM	Max. Power Avg.	Peak
CA-64N	CA-64D		698 - 960	>32*	1.15:1	±0.25dB	<0.2 dB	<-150 dBc	200W	3.0 kW
CA-74N	CA-74D		1,700 - 2,200	>30	1.15:1	±0.25dB	<0.2 dB	<-150 dBc	200W	3.0 kW
CA-84N	CA-84D		698 - 2,700	>30	1.20:1	±0.40dB	<0.2 dB	<-150 dBc	160W	1.5 kW
CA-85N	CA-85D		698 - 2,700	>25	1.20:1	±0.40dB	<0.2 dB	<-140 dBc	160W	1.5 kW
CA-94N	CA-94D		380 - 520	>30	1.15:1	±0.25dB	<0.2 dB	<-150 dBc	200W	3.0 kW

\*typically 35 dB isolation      †2 tone test at +43 dBm; lower PIM to order

### Models with Integrated Terminations

The Hybrid Combiner is a network that allows the combination of signals without those signals interacting, however close they are in frequency, and at higher powers than would be possible with standard Wilkinson Dividers. If both outputs cannot be used (as would be the case in an in-building distribution system) the unused output must be terminated with a load. The rating for this load must be at least half the sum of the power of the two inputs.

Any of the above catalog products are available with either a 2W or a 10W integrated load, by the addition of a 'G' or 'H' in the Model Number, examples of which are shown at right. Note that the isolation will degrade by up to 5dB due to the effect of the load VSWR and the PIM performance of the coupler will not be maintained. If guaranteed low PIM is a requirement, then a low PIM termination must be used, either externally or integrated as in the CT series.

#### CA-84HN 10W 2:1 Combiner



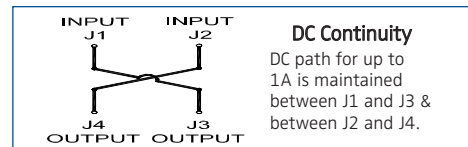
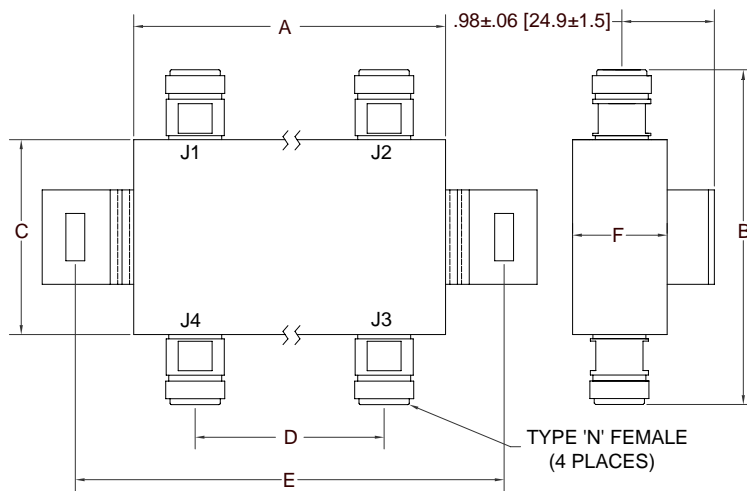
Model Number	Integrated Load Power	Input Isolation	Added Weight oz (g) nom
CA-84GN	2W avg.	>25 dB	None
CA-84HN	10W avg.*	>25 dB	1 (28)

\*Also available with 20W load



CA-84N Hybrid Coupler  
N connector 4 port Model

### Standard N connector 4 port Models

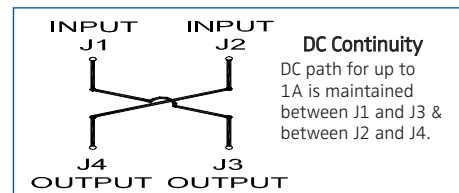
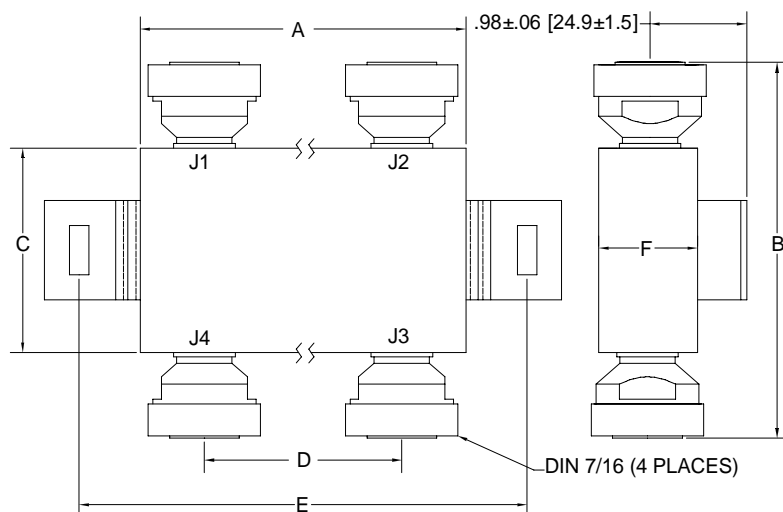


**Dimensions and Weight:**  
Inches (mm); Wt: oz (g) nom.

	CA-64N	CA-74N	CA-84/85N	CA-94N
A	3.30 (84)	3.30 (84)	5.20 (132)	5.35 (136)
B	3.14 (90)	3.54 (90)	3.21 (82)	3.14 (80)
C	1.66 (42)	2.06 (52)	1.73 (44)	1.66 (42)
D	2.00 (51)	2.00 (51)	3.30 (84)	4.10 (104)
E	4.54 (115)	4.54 (115)	5.99 (152)	5.99 (152)
F	1.00 (25)	1.00 (25)	1.00 (25)	1.00 (25)
Wt.	14 (392)	14 (392)	23 (644)	23 (644)

All dimensions ±0.60 inches unless otherwise noted.  
Dimensions in mm are for reference only.

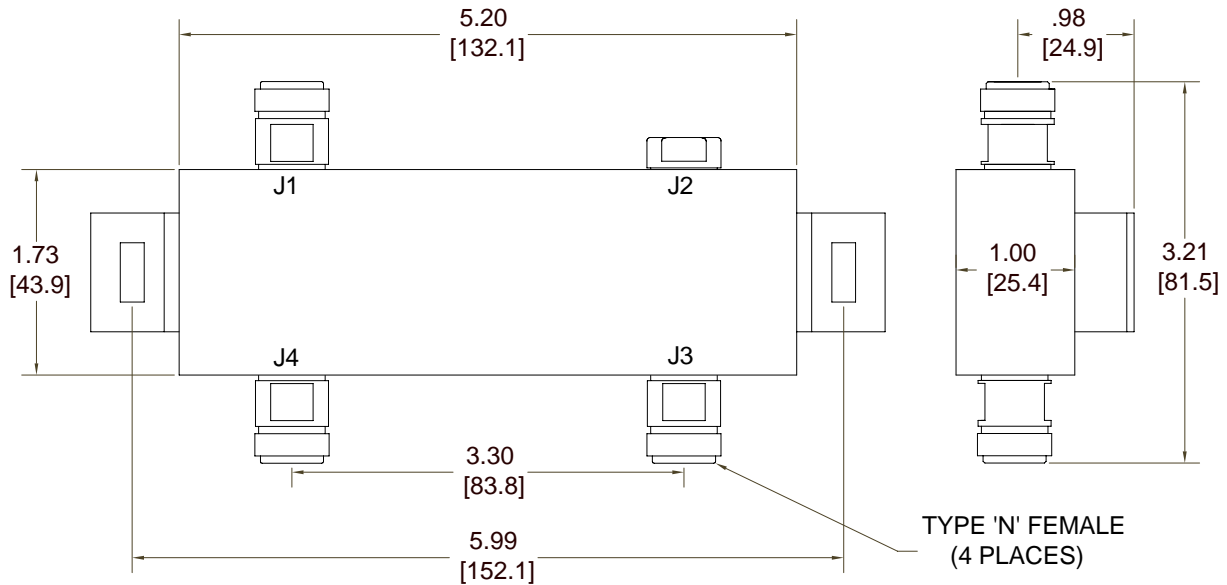
### Standard 7-16 mm DIN connector 4 port Models



**Dimensions and Weight:**  
Inches (mm); Wt: oz (g) nom.

	CA-64D	CA-74D	CA-84/85D	CA-94D
A	3.30 (83)	3.30 (83)	5.20 (132)	5.35 (136)
B	3.39 (86)	3.79 (96)	3.46 (88)	3.39 (86)
C	1.66 (42)	2.06 (52)	1.73 (44)	1.66 (42)
D	2.00 (51)	2.00 (51)	3.30 (84)	4.10 (104)
E	4.54 (115)	4.54 (115)	5.99 (152)	5.99 (152)
F	1.00 (25)	1.00 (25)	1.00 (25)	1.00 (25)
Wt.	15 (420)	18 (504)	25 (700)	23 (644)

All dimensions ±0.60 inches unless otherwise noted.  
Dimensions in mm are for reference only.

**Example CA-84GN Models with 2W Integrated Termination**

**Example CA-84HN Model with 10W Integrated Termination**
