

# Coaxial Directional Coupler

## ZDC-20-3-75+ ZDC-20-3-75

75Ω

1 to 150 MHz



CASE STYLE: M22

| Connectors            | Model          | Price       | Qty.  |
|-----------------------|----------------|-------------|-------|
| BNC                   | ZDC-20-3-75(+) | \$45.95 ea. | (1-9) |
| BRACKET (OPTION "B")  |                | \$5.00      | (1+)  |
| BRACKET (OPTION "BR") |                | \$1.50      | (1+)  |

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

### Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |

Permanent damage may occur if any of these limits are exceeded.

### Coaxial Connections

|         |   |
|---------|---|
| INPUT   | 3 |
| OUTPUT  | 2 |
| COUPLED | 1 |

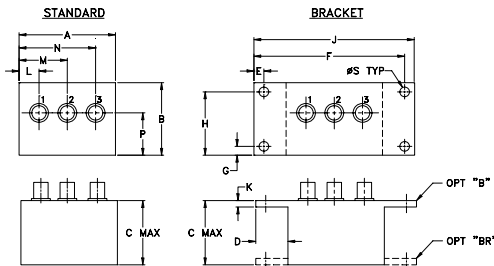
### Features

- excellent mainline loss, 0.35 dB typ.
- excellent directivity, 25 dB typ.
- rugged shielded case

### Applications

- HF/VHF
- instrumentation
- amateur radio

### Outline Drawing



### Outline Dimensions (inch/mm)

| A     | B     | C     | D     | E    | F     | G    | H     |
|-------|-------|-------|-------|------|-------|------|-------|
| 2.25  | 1.38  | 1.24  | .50   | .150 | 3.100 | .138 | 1.238 |
| 57.15 | 35.05 | 31.50 | 12.70 | 3.81 | 78.74 | 3.51 | 31.45 |

| J     | K    | L     | M     | N     | P     | S    | wt    |
|-------|------|-------|-------|-------|-------|------|-------|
| 3.25  | .10  | .40   | 1.15  | 1.86  | .64   | .150 | grams |
| 82.55 | 2.54 | 10.16 | 29.21 | 47.24 | 16.26 | 3.81 | 74.0  |

### Directional Coupler Electrical Specifications

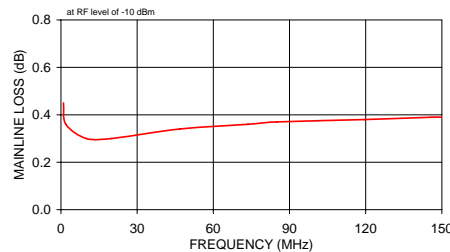
| FREQ. RANGE (MHz) | COUPLING (dB) |          | MAINLINE LOSS <sup>1</sup> (dB) |      |      |      | DIRECTIVITY (dB) |      |      | VSWR (:1) | POWER INPUT (W) |      |      |      |
|-------------------|---------------|----------|---------------------------------|------|------|------|------------------|------|------|-----------|-----------------|------|------|------|
|                   | Nom.          | Flatness | L                               |      | M    |      | U                |      | L    |           | M               | U    | L    | MU   |
| $f_L$ - $f_U$     |               |          | Typ.                            | Max. | Typ. | Max. | Typ.             | Max. | Typ. | Min.      | Typ.            | Min. | Typ. | Max. |
| 1-150             | 19.5±0.5      | ±0.75    | 0.35                            | 0.8  | 0.35 | 0.8  | 0.35             | 0.8  | 25   | 20        | 25              | 20   | 25   | 20   |

L = low range [ $f_L$  to  $10 f_L$ ] M = mid range [ $10 f_L$  to  $f_U/2$ ] U = upper range [ $f_U/2$  to  $f_U$ ]  
 1. Mainline loss includes theoretical power loss at coupled port.

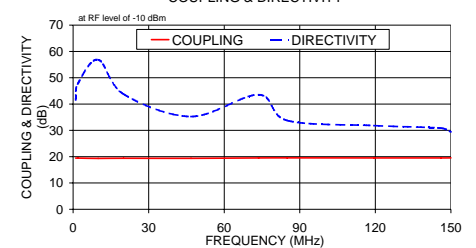
### Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | Return Loss (dB) |       | Cpl   |
|-----------------|---------------------------|----------------------|------------------|------------------|-------|-------|
|                 |                           |                      |                  | In               | Out   |       |
| 1.00            | 0.45                      | 19.46                | 41.58            | 25.97            | 24.04 | 24.88 |
| 1.93            | 0.36                      | 19.46                | 47.84            | 29.62            | 26.37 | 27.44 |
| 9.94            | 0.30                      | 19.35                | 56.88            | 32.94            | 30.18 | 31.33 |
| 20.00           | 0.30                      | 19.39                | 43.82            | 35.94            | 30.58 | 28.32 |
| 46.82           | 0.34                      | 19.37                | 35.25            | 34.29            | 29.28 | 22.54 |
| 73.64           | 0.36                      | 19.53                | 43.57            | 30.78            | 28.04 | 18.80 |
| 85.00           | 0.37                      | 19.56                | 33.76            | 29.93            | 27.73 | 17.77 |
| 119.45          | 0.38                      | 19.51                | 31.82            | 28.10            | 26.21 | 14.96 |
| 146.09          | 0.39                      | 19.52                | 30.86            | 28.08            | 25.47 | 13.35 |
| 150.00          | 0.39                      | 19.54                | 29.43            | 27.90            | 25.09 | 13.11 |

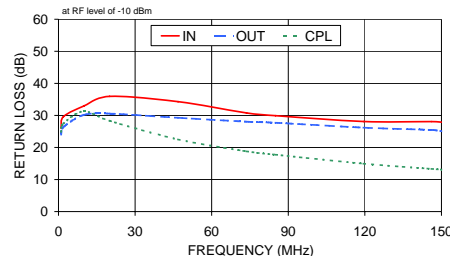
ZDC-20-3-75 MAINLINE LOSS



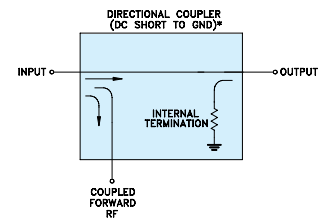
ZDC-20-3-75 COUPLING & DIRECTIVITY



ZDC-20-3-75 RETURN LOSS



### Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMERS THAT ROUTES DC FROM RF PORTS TO GROUND.

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