

## Directional couplers

### Description and purpose

Directional couplers developed by Micran are two-channel devices designed to tap partial power of high-frequency signal from primary channel to secondary channel. NO15 directional couplers are used to divide incident and reflected waves. NO16 directional coupler design is based on shifted connected strip line. They are used, for example, in automatic working stations to control power level. Materials and design of directional couplers provide high stability of parameters for a great number of connect/disconnect cycles.



### Specifications

Model	Connectors	Frequency range, GHz	Port VSWR, max	Directivity, dB, min	Insertion loss, dB, max	Coupling factor, dB	Max. input power, W	Operating temp. range, °C	Fig.
NO16-0.5-26-03R-03R	Type IX, ver. 3 (female)	0.5 ... 26.5	1.22*	16	2.2	-17.5 ± 3 (up to 1 GHz)	20 (average)	0 ... +85	1
NO16-0.5-26-13R-13R	3.5 mm (female)								
NO16-0.5-20-12R-12R	Type SMA (female)	0.5 ... 20	1.25*	18	1.5	-16 <sup>+2.5</sup> <sub>-0.5</sub> (over 1 GHz)	3000 (peak)	2	
NO15-0.5-26-03R-03R	Type IX, ver. 3 (female)	0.5 ... 26.5	1.2*	22					
NO15-0.5-26-13R-13R	3.5 mm (female)								
NO16A-2-20-12R-12R	Type SMA (female)	2 ... 20	1.22*	16	1	-16 ± 1.5	20 (average) 3000 (peak)	0 ... +120	4

#### NOTE

\* VSWR of coupled port is not standardized.

NO16-0.5-20-12R-12R, NO16-0.5-26-03R-03R and NO16-0.5-26-13R-13R models are supplied without matched loads required for normal operation of the coupler. When ordering these models, order the appropriate matched load of NS3-20 series.

	NO15-0.5-50-05R-05R	NO16-2-50-05R-05R	NO12-4-50-05R-05R
Connectors	2.4 mm (female)		
Frequency range, GHz	0.5 ... 50 GHz	2 ... 50 GHz	4 ... 50 GHz
Port VSWR, max.	1.4*		1.3*
Coupling factor, dB	-17.5 ± 2.5 (up to 1 GHz) -15 (+5.5 over 1 GHz)	-16 (+0.5 -2.5)	-12 (+2.0 -1.0)
Directivity, dB, min	16	12	
Insertion loss, dB, max	1.8	2	2.3
Maximum input power, W	2 (average) 1000 (peak)		
Operating temperature range, °C	-60 ... +85	0 ... +85	
Figure	5	6	

**NOTE**

\* VSWR of coupled port is not standardized.

	NO16-2-40-14R-14R	NO12-4-40-14R-14R
Connectors	2.92 mm (female)	
Frequency range, GHz	2 ... 40 GHz	4 ... 40 GHz
Port VSWR, max.	1.3*	1.3*
Coupling factor, dB	-16 (+1.5 -1.5)	-12 (+1.5 -1.0)
Directivity, dB, min	14	
Insertion loss, dB, max	1.5	1.8
Maximum input power, W	2 (average) 1000 (peak)	
Operating temperature range, °C	0 ... +85	
Figure	7	

**NOTE**

\* VSWR of coupled port is not standardized.

**Dimensions**

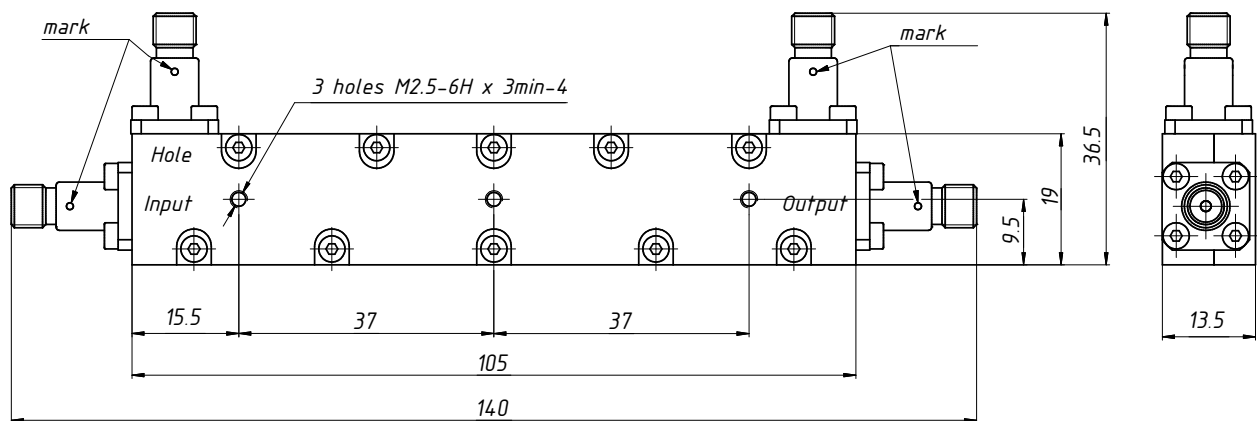


Fig. 1

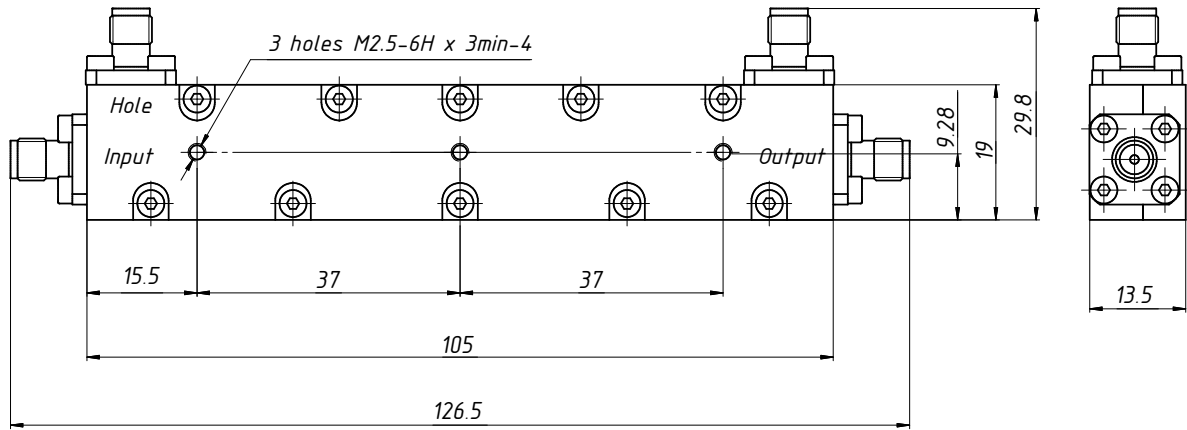


Fig. 2

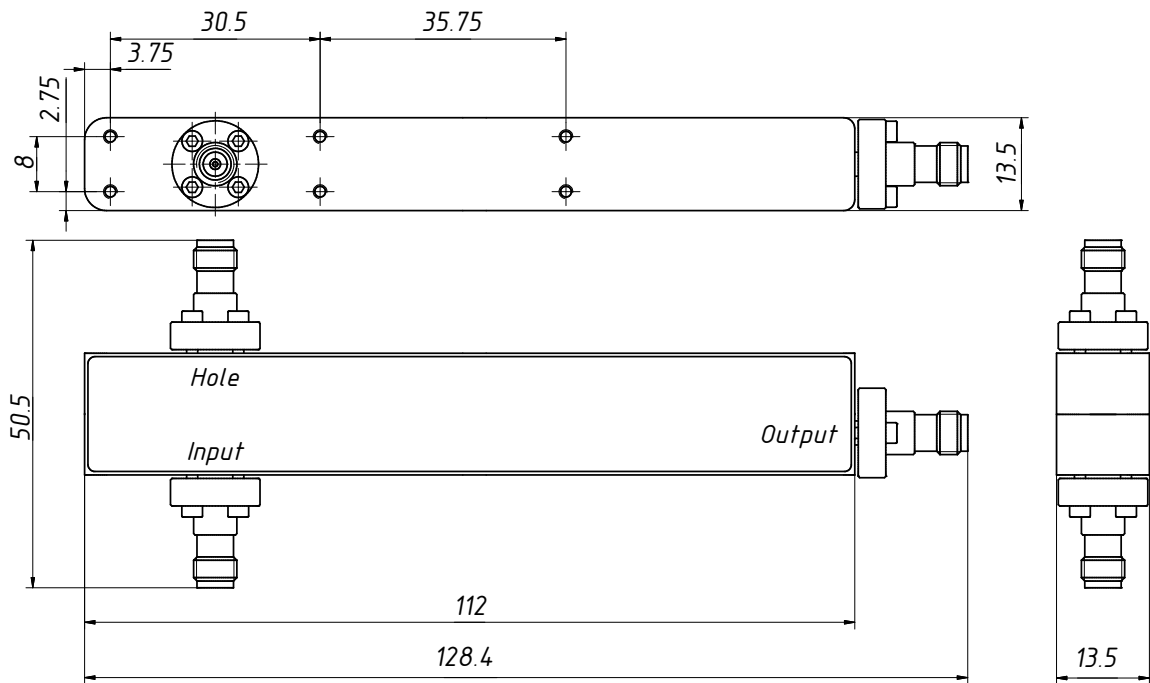


Fig. 3

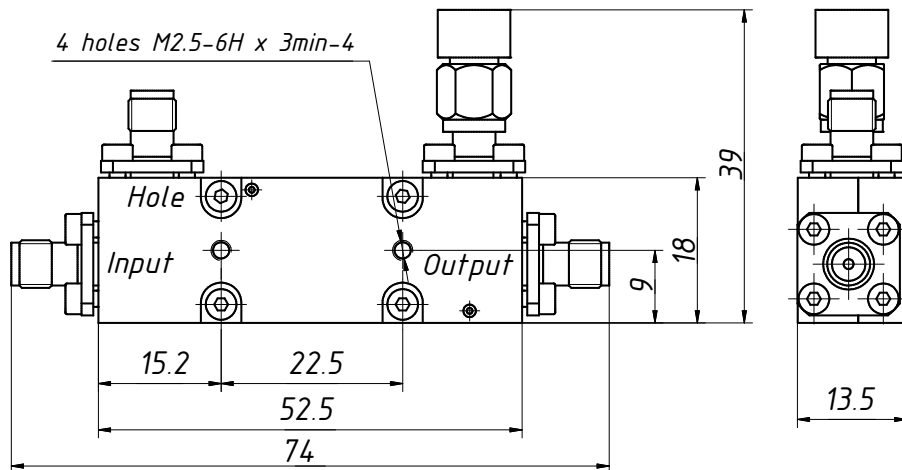


Fig. 4

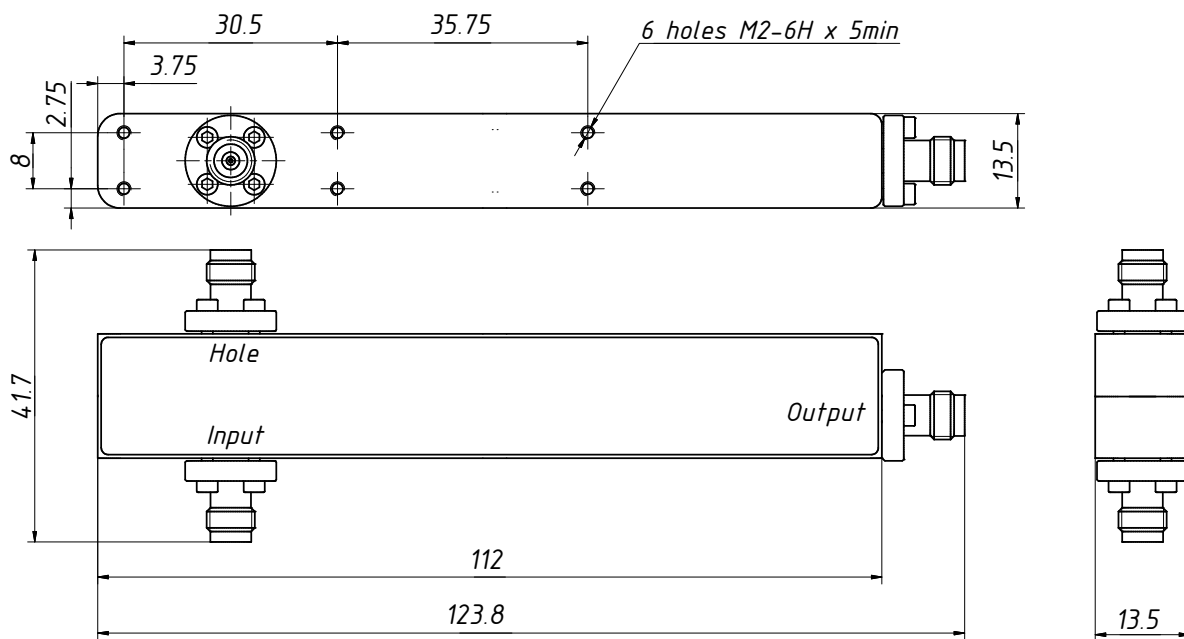


Fig. 5

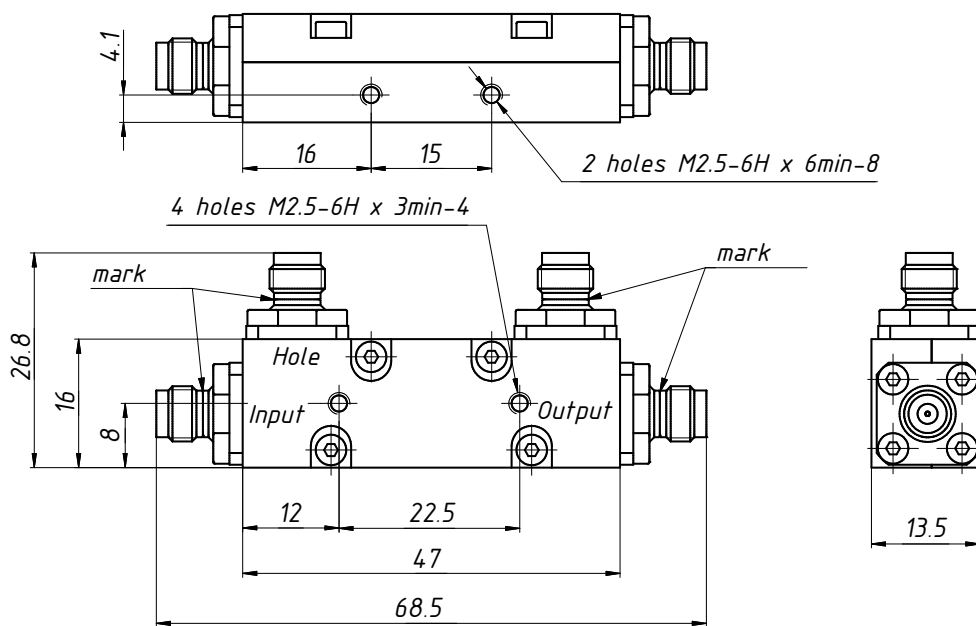


Fig. 6

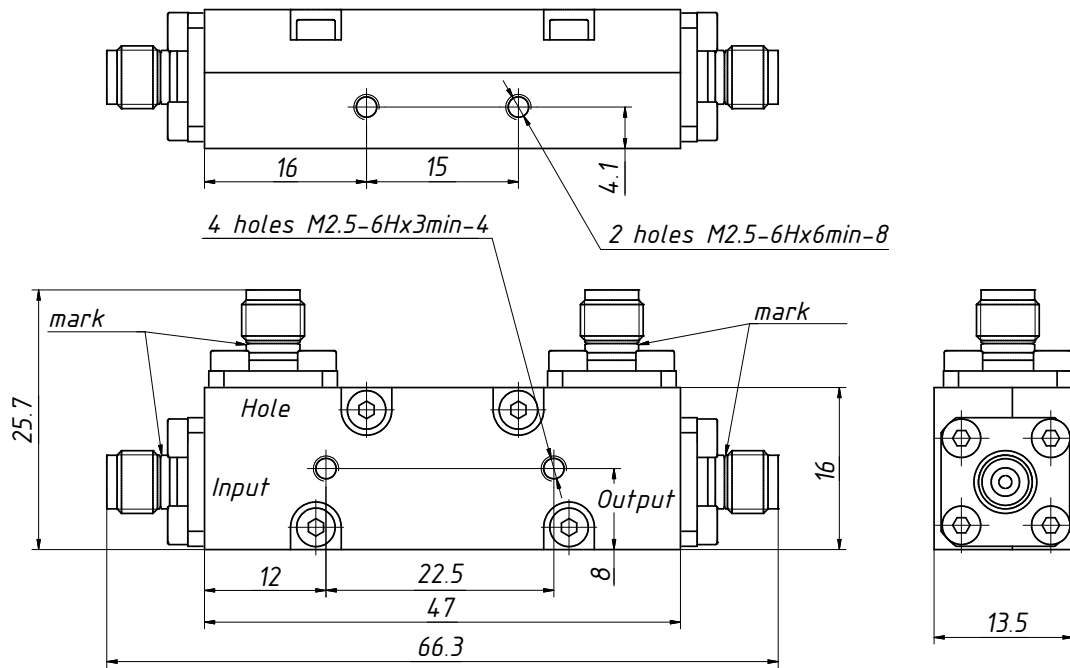


Fig. 7

**Ordering example**

- NO16A-2-20-12R-12R Directional coupler, type SMA (female) connector.