	Parameter \ Sensor	NAP-Z3	NAP-Z4	NAP-Z5	NAP-Z6	NAP-Z7	NAP-Z8
General data (max. power see diagrams)	**Power measurement range** [1]	0.01 W to 35 W	0.03 W to 110 W	0.1 W to 350 W	0.3 W to 1100 W	0.05 W to 200 W	0.5 W to 2000 W
	Frequency range	25 MHz to 1 GHz				0.4 MHz to 80 MHz	0.2 (0.4 *)) MHz to 80 MHz
	SWR (referred to 50 Ω)	1.07 max.			1.07 max.	1.03 max. (1.02 max. from 1.5 MHz to 30 MHz)	
	Insertion loss up to 0.3 GHz up to 0.5 GHz whole frequency range	 0.10 dB max. 0.25 dB max. 0.75 dB max.	 0.08 dB max. 0.15 dB max. 0.35 dB max.	 0.08 dB max. 0.15 dB max. 0.20 dB max.	 0.05 dB max. 0.10 dB max. 0.15 dB max.	 – – 0.015 dB max.	
	Directivity [2]	27 dB min. from 30 MHz to 1 GHz, 26 dB min. from 25 MHz to 30 MHz			min. 25 dB	35 dB min. from 1.5 MHz to 30 MHz (other frequencies see table)	
Average power measurement [3]	**Measurement range** [5]	0.01 W to 35 W	0.03 W to 110 W	0.1 W to 350 W	0.3 W to 1100 W	0.05 W to 200 W	0.5 W to 2000 W
	Measurement uncertainty [20] at 20 °C to 25 °C	6 % max. of rdg plus zero offset				6 [4] % max. of rdg [22] plus zero offset (1.5 MHz to 30 MHz), (other frequencies see table)	
	Zero offset [9]	±0.0013 W	±0.004 W	±0.013 W	±0.04 W	±0.01 W	±0.1 W
	Temperature coefficient	0.25 %/K max., to be considered outside temperature range 20 °C to 25 °C					
	Measurement time [21]	0.4 s				0.5 s	
Peak envelope power measurement [3]	**Measurement range** AM Burst width t Repetition rate 1/T					0.5 W to 200 W 30 Hz to 10 kHz 20 µs min. 30/s min.	5 W to 2000 W
	Measurement uncertainty at 20 °C to 25 °C					same as for average power measurement plus measurement error of peak hold circuit	
	Error limits of peak hold circuit					±(2 (7) % of rdg + 0.04 % of P_{nom}) [23] for two superimposed CW carriers of equal amplitude, frequency offset 0.3 kHz to 3 kHz (0.03 kHz to 0.3 kHz and 3 kHz to 10 kHz)	
	Temperature coefficient					same as for average power measurement plus 0.003 % of P_{nom} [23]/K	
	Measurement time [21]					1.5 s	
Reflection measurement	**Reflection measurement range** Return loss/SWR/ reflection coefficient	0 dB to 23 dB / 1.15 to ∞ / 0.07 to 1 (30 MHz to 1 GHz)				0 dB to 28 dB / 1.08 to ∞ / 0.04 to 1 (1.5 MHz to 30 MHz)	
	Minimum forward power	0.1 (0.6) W	0.3 (2) W	1 (6) W	3 (20) W	0.5 (10) W	5 (100) W
		specs met at power values in ( )					
	Measurement uncertainty	see diagram – specifications are valid only after zero adjustment and selection of average power measurement function					
	Measurement time	same as measurement time of selected power measurement function; shortest with average power measurement					

Dimensions/weight

118 mm x 105 mm x 45 mm / 0.6 kg (NAP-Z3 to -Z5)
125 mm x 105 mm x 45 mm / 0.6 kg (NAP-Z6)
118 mm x 118 mm x 45 mm / 0.7 kg (NAP-Z7, -Z8, -Z10, -Z11)

Specifications of Power Sensors NAP-Z7/-Z8 outside the 1.5 MHz to 30 MHz frequency range (20 °C to 25 °C).
Values in [ ] taking into account the reported calibration factors. Calibration interval: 1 year

Frequency		0.2 to 0.4	0.4 to 1.5	30 to 50	50 to 80	MHz
Directivity	NAP-Z7 NAP-Z8	– 25	23 30	30 30	20 20	dB (min.) dB (min.)
Uncertainty for average power measurement	NAP-Z7 NAP-Z8	– 32 [15]	35 [12] 13 [6]	11 [4] 11 [4]	25 [5] 25 [5]	% of rdg (max.) % of rdg (max.)

*) 0.4 MHz for PEP measurement only