

H₂-Sensor-Elemente im Überblick

criteria	target		MOS		TCD		CAT		EC		MOX		COMB		OPT		NEO	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
measuring range H ₂ [Vol.-%]	0,1	4	√	√	–	√	–	√	√	√	√	√	√	√	√	√	√	√
temperature range [°C]	-40	+125	√	x	√	x	√	x	√	x	√	x	√	√	x	x	√	√
pressure range [bar]	0,65	1,07	x	√	x	√	x	√	x	√	x	√	√	√	x	x	√	√
humidity r.h. [%]	0	100	x	x	√	x	√	√	x	x	√	√	√	x	x	√	√	√
response time t ₉₀ [s]	3		√		x		x		x		x		x		x		√	
recovery time t ₁₀ [s]	3		x		x		x		–		x		–		–		√	
power consumption [mW]	650		x		√		√		√		√		x		x		√	
lifetime [h]	> 43.800		√		√		√		x		√		√		√		√	

- MOS: MOS or MOSFET hydrogen sensors
- TCD: Thermal Conductivity Sensors
- CAT: Catalytic hydrogen sensors
- EC: Electrochemical hydrogen sensor
- MOX: Semiconducting metal oxide
- COMB: Combined hydrogen sensors
- OPT: Optical hydrogen sensor
- NEO: neo hydrogen sensors**

Quelle: L. Boon-Brett et. al., "Identifying performance gaps in hydrogen safety sensor technology for automotive and stationary applications", International Journal of Hydrogen Energy Band 0, S. 1-12. (2009).