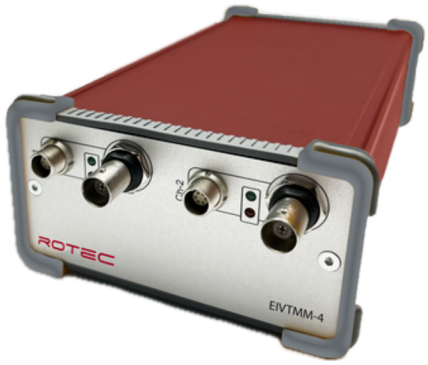
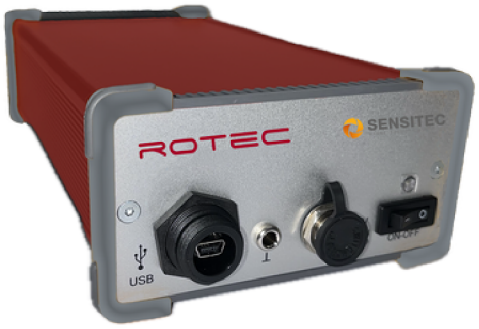
ROTEC
TORSIONAL VIBRATION PROFESSIONALS

Real Time Valve Train Module
ELVTMM

The electronics is used as an evaluation unit for measurements on the valve train. It conditions the sensor signal and calculates the valve lift with an accuracy of +/- 10 µm. The result is provided at the BNC connector as an output voltage between 0-10 V, proportional to the valve movement. The valve train module offers up to four measurement channels, a high resolution and has a high sampling frequency of the sensor raw signals. The valve position is detected within 1 µm and output in real time as an analog voltage. This means that even very fast movements can be reliably detected.





Features

- Calculation and output of displacement signals in real time
- Measurement module in 2-channel or 4-channel version
- Signal rate at analog output 800 kHz/16 bit
- Manual or automatic adjustment of sensor signals (offset, amplitude, phase)
- Voltage range analog output 0-10 V proportional to valve movement
- Resolution up to 0.25 µm
- Definable signal output at BNC output (e.g. sensor raw signals)
- USB interface (virtual COM interface) for configuration via user interface

Measurement chain

- GMR Sensor for valve lift measurement (Sensitec - GLM711AVB)
- RASdelta Analog Board (connection BNC to SMB connector; 1 cable per channel/GMR sensor)
- RAS Software (live evaluation / evaluation in post-processing)

Technical data					
Parameter	**Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Supply Voltage		13	15	24	V
Current consumption		-	150	-	mA
Movement output voltage 0-10 V*		0	-	10	V
Maximum movement		-	-	511	mm
Resolution of movement**	@ 25 teeth (Movemax = 25 mm)	1.52 (14bit)	0.762 (15bit)	0.381 (16bit)	µm
Movement transfer characteristic 0-10 V	@ Movement = 25 mm	-	± 0.4	-	V/mm
Sensor signal sampling rate	Differential inputs simultaneous sampled	-	1	-	MHz
Output voltage refresh rate		-	0.8	-	MHz
Output voltage resolution		-	-	16	Bit
Ambient temperature		0	-	50	°C

*) Factory setting: 0-10 V (+/-10 V upon request)
**) Depends on the numbers of teeth