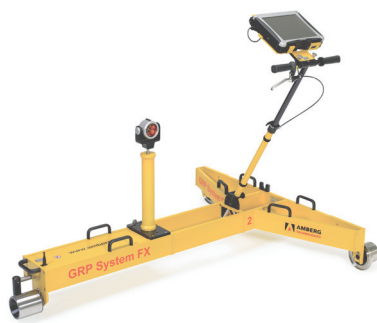


Amberg Survey Basic GRP 1000



The configuration consists of

- Premium hardware GRP 1000
- High-performance software Amberg Survey Basic
- Robust and guaranteed precision thanks to GRP Fidelity
- First-class customer support

Amberg Survey is integral part of the Amberg Technologies application modules Slab Track, Tamping and Clearance.

Technical Data GRP 1000 for Amberg Survey Basic

System configuration		Cont. system accuracy	
Gauge (mm)	1000, 1067, 1435, 1520/24, 1600, 1668/76	Gauge	+/- 0.3 mm
TGS FX		Superelevation	+/- 0.5 mm
Gauge	- 25 mm to + 65 mm	- stop&go mode	+/- 1.0 mm
Superelevation (Cant)	+/- 260 mm (+/- 10°)	- kinematic mode	
Sensor performance		Positioning	
Track geometry measurement (Position, Gauge, Superelevation)		Leica total stations	TS30 TPS1200 TPS2000
Measurement stop&go - duration	TPS: 5 s GPS: 1 s	Leica GPS	GPS1200
Measurement kinematic - data frequency	TPS: 7 Hz GPS: 10 Hz	Power supply	
System accuracy		TGS FX – sensors	Leica GEB171, battery, rechargeable
Determination of track position and height ^{*)}		Battery life ^{*)}	> 8 h
GRP with total station (TPS)	Pos./Height: +/- 1 mm +/- 5 mm	Panasonic control computer	Panasonic Li-Ion battery, rechargeable
GRP with GPS	Position: +/- 20 mm Height: +/- 40 mm	Battery life ^{*)}	> 4 h
^{*)} Typical project accuracy. Depending on e.g. atmospheric conditions, control point quality, positioning sensor and project conditions.		Environmental specifications	
		Working temperature range	-10° to +50° C
		Humidity - non-condensing	< 80 %
		System weight	
		GRP 1000	27 kg
		- ready to measure	
		- incl. battery and computer	

System use and typical system performance

Survey applications	
Typical project applications	- As-built surveys for documentation and planning of railway line refurbishment and upgrading - Track as-built data acquisition for subsequent analyses and utilisation
System use	- Open track - Light rail - Industrial tracks
Typical surveying performance	
Track survey with total station	800 – 1200 m/h
Track survey with GPS	3000 m/h
- GPS receiver and reference station necessary	
As-built data (export)	
Supporting data interfaces	- ASCII - DXF - LandXML
- further formats on request	
System approval	
Unlimited electro-magnetic compatibility (PET wheels)	Approvals from: - Network Rail (UK) - Deutsche Bahn (DE) - ÖBB (AT) - RFI (IT) - etc.
Amberg Survey reference extract	
Ambergs' Survey solution has proven its high performance all over the world. Demanding projects have been successfully realised e.g. in Belgium, Germany, Great Britain, The Netherlands, Italy, Spain, Greece.	

Amberg Survey Basic

Amberg Rail 2.0

Amberg Survey

Map your line. Highly efficient system for as-built surveying of existing railway lines including powerful interfacing for selective data transfer to other applications and subsequent analyses.

Project data management

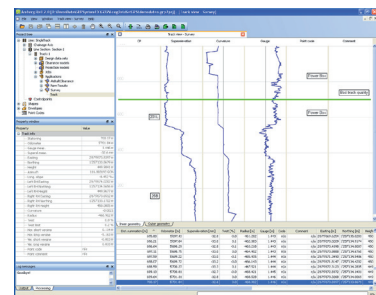
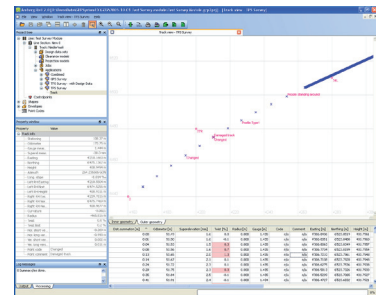
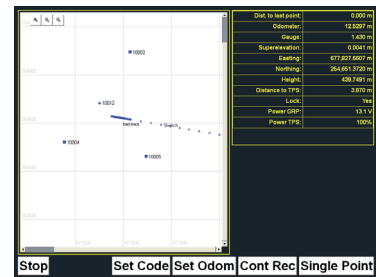
- Line dedicated project data management as basis for structured inventory surveys, data processing and data transfer.
- Individual definition of coding schemes.
- Project cockpit for preparation of efficient and easy practicable fieldwork.

Surveying

- Powerful and integrated acquisition of current track coordinates and corresponding track parameter (gauge, superelevation).
- Direct assignment of codes and comments to single measurements as basis for efficient post-processing.
- Reliable control of ongoing measured values and progress of measurement.

Data evaluation

- Automatic analysis and merging of single measuring sections.
- Calculation of additional parameter e.g. versines, curvature, slope, twist and detailed track axis according to pre-defined reference parameter.
- Structured data export using the code information in LandXML, DXF and ASCII format, e.g. for further processing in Bentley Rail Track.
- Direct interface for further utilisation in other Amberg Rail applications.



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