

# Amberg SlabTrack GRP 1000



## The configuration consists of

- Premium hardware GRP 1000
- Application specific software Slab Track Plus
- Robust and guaranteed precision thanks to GRP Fidelity
- First-class application support

## Technical data GRP 1000

System configuration		Positioning	
Gauge (mm)	1000, 1067, 1435, 1520/24, 1600, 1668/76	Leica total stations - motorised, ATR - radio modem	TS15, TS30, TSS0, MS50
TGS FX		Power supply	
Gauge - for nominal gauges	- 25 mm to + 65 mm	TGS FX – sensors	Leica GEB171, rechargeable > 8 h
Superelevation (Cant) - at 1435 mm gauge	+/- 260 mm (+/- 10°)	Battery life*)	
Sensor performance		Panasonic control computer Battery life*)	Li-Ion battery, rechargeable > 4 h
Track geometry measurement (Position, Gauge, Superelevation)		Optional: Extended power supply for both, TGS FX and control computer - also suitable for TPS/GPS supply Battery life*)	ATPC 1000 PowerCube, lead acid battery, rechargeable > 10 h
Single measurement Final adjustment	4 s	*) Depending on conditions.	
Tracking mode Rough adjustment	0.3 s		
Depending on conditions and surveying mode of total station type.		Environmental specifications	
System accuracy		Working temperature range	-10° to +50° C
Absolute system accuracy *)		Humidity - non-condensing	< 80 %
Single measurement	+/- 1.0 mm	System weight	
Tracking mode	+/- 3.0 mm	GRP 1000 - ready to measure - incl. battery and computer (without ATPC 1000)	27 kg
Gauge	+/- 0.3 mm		
Superelevation	+/- 0.5 mm		
Inner system accuracy	+/- 0.5 mm		
*) Depending on e.g. control point quality, atmospheric conditions, total station type, surveying mode and project conditions.			

## System use and typical system performance

Slab Track applications	
Typical project applications	- High performance lines - Light rail - Metro - Tunnel refurbishment - Industrial tracks
Installation Slab Track	
Suitable for Slab Track systems	Track based construction methods, e.g. - Rheda 2000 - Iron-Horse method, ...
Production rate - depending on construction method and project conditions	> 400 m/d
Installation Slab Track – turnouts	
Suitable for turnout systems, incl. structural gauge enlargement (e.g. FAKOP®)	- BWVG - Cogifer, ...
Documentation and acceptance	
Compatible with Slab Track systems	- Bögl System - J-Slab - Rheda 2000 - Iron-Horse method - Züblin Slab Track, ...
Measurement performance - precision track as-built per sleeper	> 100 m/h
System approval	
CE Conformity	EN 61326-1:2013 EN 61000-6-2:2005 EN 61000-6-4:2007/A1:2011 EN 60825-1:2014 EN 13848-4 Directives 2014/30/EU Directives 2014/35/EU Directives 2011/65/EU
GRP System FX approvals from	Network Rail / London Underground (UK), Deutsche Bahn (DE), SBB (CH), SNCF (FR), ÖBB (AT), RFI (IT), Adif (ES), ProRail (NL), Infrabel (BE)
Extract of references	
Amberg's railway surveying solutions have proven their high performance all over the world. Demanding projects have been successfully realised in e.g. Germany, Austria, Belgium, the Netherlands, Denmark, France, Italy, Spain, Greece, Turkey, Australia, United Kingdom, Saudi Arabia, UAE, Korea, USA, PR China.	

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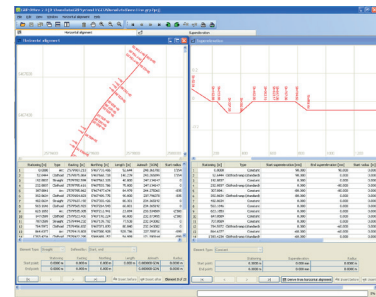
## System performance and technical data

### Amberg Slab Track

394.3 km/h? No problem! Amberg Slab Track is the integrated surveying solution, optimised for the typical requirements during construction, monitoring and maintenance of slab track projects.

#### Project data management

- Central database for input, visualisation and management of all track project data – including route data chronology, control points, and survey and construction progress.
- Supports all common geometry element types for track axis, gradients, chainage axis, superelevation range, gauge range including gauge enlargement at high-speed points (e.g. FAKOP®).
- Provision of all track project data for subsequent surveying tasks and evaluations.



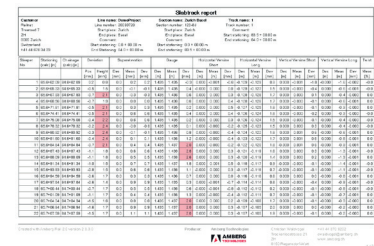
#### Surveying

- Determination of current track position during construction together with precision total station.
- Display of relative deviations (direction and height) to design in real-time – Data update frequency up to 3 times per second.
- Amberg Compensation Method – Real-time compensation of control point inaccuracies – resulting in improved track geometry quality already during construction.



#### Evaluation

- Automatic survey data processing and evaluation – including automatic linking of subsequently surveyed track sections.
- Complete surveyed data management including automatic incorporation of subsequent re-measurements.
- Comprehensive analysis and documentation of inner and outer track geometry quality.
- Interactive creation of correction lists supported with real-time simulations about the resulting final track position.



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