AMBERG TECHNOLOGIES

EN 13848-4 CONFORMITY

Amberg Tamping GRP 1000

The configuration consists of

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

Technical data GRP 1000

System configuration	
Gauge (mm)	1000, 1067, 1435, 1520/24, 1600, 1668/76
TGS FX	
Gauge - for nominal gauges	- 25 mm to + 65 mm
Superelevation (Cant) - at 1435 mm	+/- 260 mm (+/- 10°)
Sensor performance	
Track geometry measurement (Position, Gauge, Superelevation)	
Measurement stop&go - duration	TPS: 5 s GPS: 1 s
Measurement kine-matic - data frequency	TPS: 7 Hz GPS: 10 Hz
System accuracy	
Determination of track position and height*)	
GRP with total station (TPS) - stop&go mode - kinematic mode	Pos./Height: +/- 1 mm +/- 5 mm
GRP with GPS - with reference station	Position: +/- 20 mm Height: +/- 40 mm

*)Typical project accuracy. Depending on e.g. atmospheric conditions, control point quality, positioning sensor and project conditions.

Cont. system accuracy	
Gauge	+/- 0.3 mm
Superelevation - stop&go mode - kinematic mode	 +/- 0.5 mm +/- 1.0 mm
Positioning	
Leica total stations - motorised, ATR - radio modem	TS15, TS30, TS50, MS50
Leica GPS	GPS1200, GS10/14/15
Power supply	
TGS FX – sensors Battery life*)	Leica GEB171, rechargeable > 8 h
Panasonic control computer Battery life*)	Li-Ion battery, rechargeable > 4 h
*) Depending on conditions.	
Environmental specifications	
Working temperature range	-10° to +50° C
Humidity - non-condensing	< 80 %
System weight	
GRP 1000 - ready to measure - incl. battery and computer	27 kg

System use and typical system performance

Tamping applications	
Typical track work applications	- New construction - Rehabilitation - Renewal - Maintenance - Tamping only
System use	- Track - Turnout systems, incl. structual gauge enlargement (e.g. FAKOP®)
Typical project performance	
Track survey with total station	800 – 1200 m/h
Track survey with GPS - GPS receiver and reference station necessary	3000 m/h
Tamping data (lift and slue values)	
Tamping data preparation - correction data calculation incl. ramping	< 10 min per 500 m
Tamping data formats - further formats on request	Plasser WinALC, DosALC CGV5 Framafer BAO3 Matisa Harsco
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.	

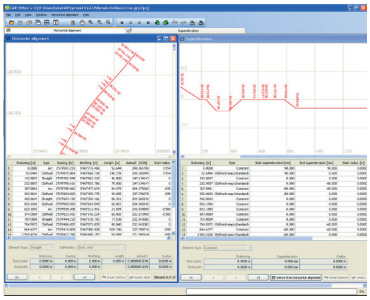
Amberg Tamping GRP 1000

System performance and technical data

Amberg Tamping

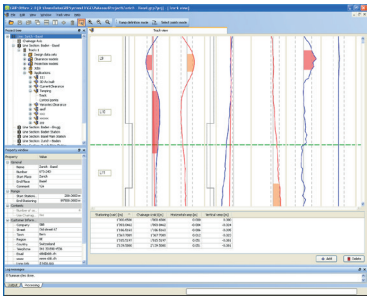
The perfect track with Amberg Tamping. High-performance system solution for track design based tamping survey.

Project data management



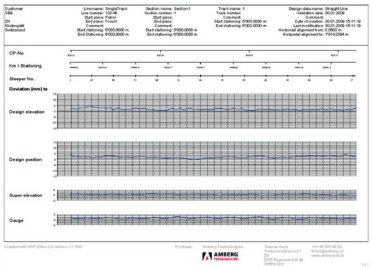
- Central database for input, visualisation and management of all track project data including route data chronology, control points and survey and construction progress.
- User-defined project definition either as manual input of the (relative) track axis data from a track layout plan or as (absolute) coordinate referenced track axis data directly from the database or design software.
- Prior definition of geometrical tamping parameters (e.g. max. lift, max. slue per run).

Surveying



- Automatic surveying of current track position including inner track geometry as basis for calculation of lift and slue values.
- All relevant track information available on track in real-time.
- Data logging in static or kinematic surveying mode, depending on project requirements – with surveying performance up to 3 km/h.

Evaluation and reporting



- Automatic survey data processing and evaluation – including automatic linking of subsequently surveyed sections.
- User friendly tamping data editor for interactive graphical data analysis and processing.
- Direct export of correction data for Plasser, Framafer and Matisa tamping machine control computers.
- Comprehensive reports of inner and outer track geometry analyses.

Amberg Technologies AG
Trockenloostrasse 21
CH-8105 Regensdorf
Switzerland

Phone +41 44 870 92 22
Fax +41 44 870 06 18

info@amberg.ch
www.amberg.ch/at

AMBERG TECHNOLOGIES