

# Amberg Tamping VMS

## The flexible tamping survey solution for track works



### Innovation of a proven principle for track works

- Digital long chord method
- Ground-breaking performance of up to 2000 m/h
- Combined survey of track and lateral distance offsets in one run
- Greatest operational flexibility – thanks to twin-trolley-mode and tripod-mode option
- Integrated fixed-point measuring device
- Cost savings of 70% and more compared to manual / optical chord methods
- Safe digital data handling – from initial data input to final transfer of correction data
- Easy handling and flexible transportation



### High performance for long track sections – VMS Twin-Trolley-Mode

- 1st Choice for measurements during track closures
- High performance of up to 2 km/h
- Length of reference chord of up to 250 m
- Automatic tripod for quick and easy self-levelling of laser tachymeter
- LED lightening bar assuring safe work during night
- User friendly handling specially designed for track worker

### Greatest flexibility under demanding project conditions – VMS Tripod-Mode

- Ideal for short track sections, e.g. turn outs, multi-track sections and projects with limited track access
- Length of reference chord of up to 400 m
- Flexible measuring mode – as twin-trolley-mode – complemented by Flex-Stop functionality
- Immediate measurement stop for rapid track clearance on demand – without impact on performance
- Modular system design allows upgrading at any time e.g. 2nd trolley and other survey applications

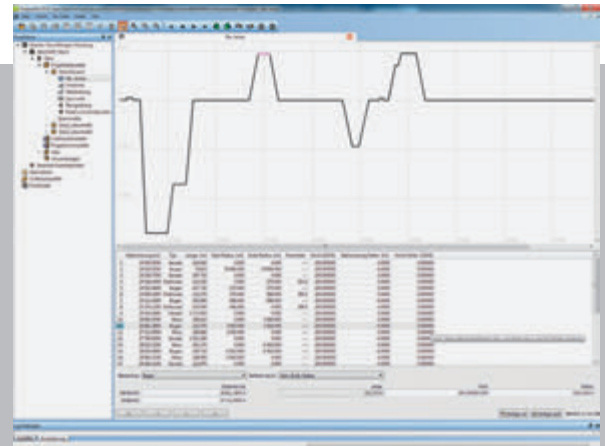


# Easy to use – fully controlled – highly efficient From preparation through to evaluation

## Project data management

### Simple and quick project data management

- Project setup and track data definition in only few steps
- Smart input of track data coming from track layout plan or other analogue document
- Direct import of digital alignment data
- Data base model assures immediate access to data input, management and reporting
- Various interfaces for design data transfer
- Integrated track point calculator

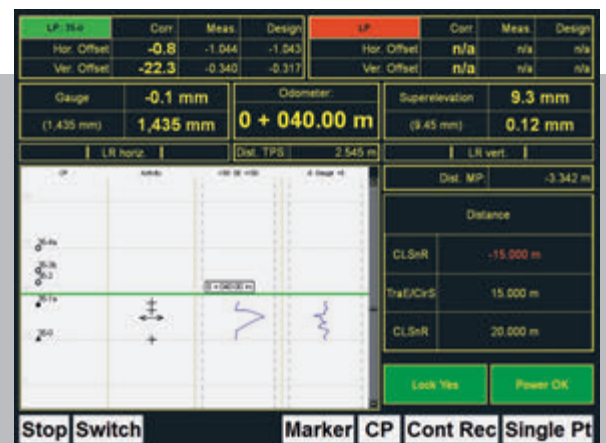


Project data input – intuitive, safe, efficient

## Measurement

### Tamping surveying with highest efficiency

- Easy measuring process – supported by big control screen for complete overview and control at any time
- Track and lateral distance offset survey in one run
- Real-time display of relevant track data
- Kinematic measuring mode
- Single point shots incl. code and note function for relevant track objects (e.g. synchro point, frog)
- Control point measurement including tie-distance control
- Different operation mode for optimal utilisation – during complete track possession or short access windows

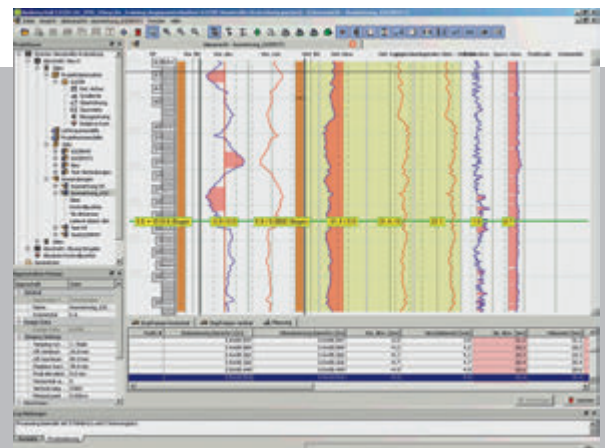


Screen display – clear, meaningful, ergonomic

## Evaluation

### Automatic evaluation and correction data calculation

- Automatic linking and analysis of measuring sequences
- Clear display of results of actual / nominal track comparison including tolerance levels, cross level, point and code info
- Comprehensive evaluation tool for determination of correction values, lift and slue (shift), including ramping, check of possible ramp slope, maximum lift and slue correction
- Actual / nominal fixed-point check
- Comprehensive documentation and export of results including tamping data files
- Lift & slue report for machine driver

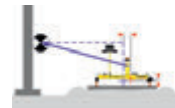
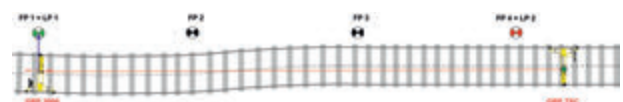


Graphical data analysis – all details at a glance

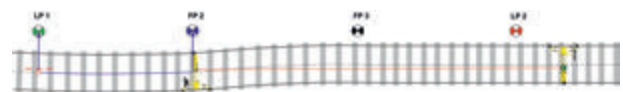
## VMS Twin-Trolley-Mode



GRPTSC trolley moves to the end of the first section. Preparing the laser tachymeter within seconds by pushing one button.



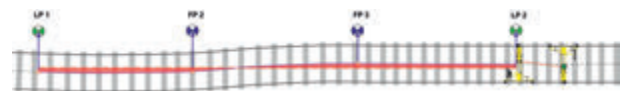
Start of chord measurement: Initial lift and slue calculation at fixed point LP I with GRP 3000



Kinematic track recording at walking speed. Survey of synchro points, other POI and additional fixed-point measurements possible at any time.

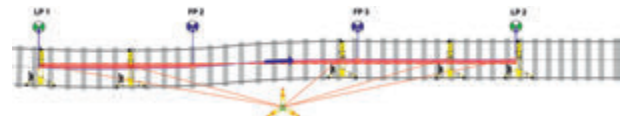


Optional: Non-contact measurement of parallel track distance, platform offset or position of contact wire.

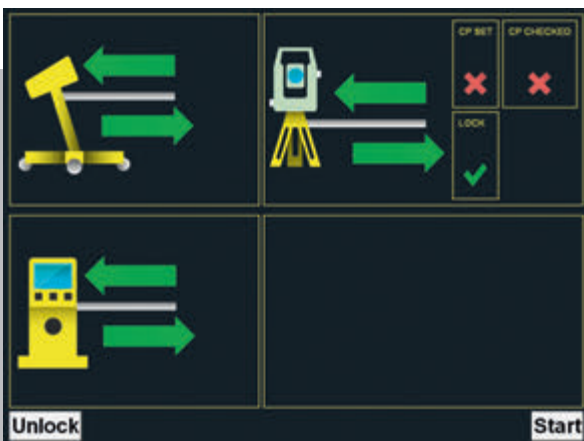


Complete actual/nominal comparison at the end of the measuring section.

## VMS Tripod-Mode



Identical sequence of operation for tripod-mode – combined with higher flexibility for track access and high productivity at turnouts and multi-track sections.

[illegible]

Clear structured survey process – the key for highest productivity


[illegible]

# Amberg Tamping VMS

## Technical data – System performance

Systemkonfiguration	
System configuration	1000, 1067, 1435, 1520/24, 1600, 1668/76
Amberg GRP 3000	
Gauge measuring range - For nominal gauges	-25 to +65 mm
Cross level (cant) - at 1435 mm	+/- 260 mm
Fixed-point measuring device Profiler 110 FX	
Fixed-point distance	< 20 m
Amberg GRP TSC	
Measuring range - at 1435 mm	+/- 260 mm
Self-levelling - time	< 5 s
Measuring frequency	
Track geometry 3D track position, gauge, crosslevel	Stop & Go < 5 s/measurement Kinematic < 7 measurements/s
System accuracy	
Survey of track position and height *)	
- Stop & Go mode	+/- 1 mm
- Kinematic mode	+/- 3 mm
Crosslevel	
- Stop & Go mode	+/- 0.5 mm
- Kinematic mode	+/- 1 mm
Fixed-point measurement - relative to track axis - at 5 m distance	+/- 3 mm
Laser tachymeter	
Leica total station - motorized, ATR - radio modem	TS30, TS15 TPS1200
Environmental specifications	
Working temperatur range	- 10° to +50°
Humidity - non-condensing	< 80 %

\*) Depending on e.g. chord length, atmospheric conditions, control point quality, positioning sensor and project conditions.

System weight	
Amberg GRP 3000 - incl. computer, batteries	29.8 kg
Amberg GRP TSC - incl. laser tachymeter, batteries	33.0 kg
Typical project performance	
Long-chord method	
VMS Twin-trolley-mode	1000–2000 m/h
VMS Tripod-mode	700–1100 m/h
Geodetic 3D mode	
Track survey with TPS	600–1000 m/h
Track survey with GPS - reduced accuracy - Position +/- 2 cm - Height +/- 4 cm	3500 m/h
Correction data (Lift & slue)	
Tamping data preparation - Correction data calculation incl. ramping	< 15 min/500 m
Tamping data formats	Plasser WinALC, ALC CGV5 Framafer BAO3 Matisa
System approvals	
Unlimited electro-magnetic compatibility.	
Approvals from:	- Network Rail (UK) - Deutsche Bahn (DE) - ÖBB (AT) - RFI (IT) - et al.
 DB RiL 833.0050 Type approval as railway surveying device by DB AG DB RiL 824.0050 Measurement and detection of long-wave track irregularities	
Extract of references	
Amberg's Tamping 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, Italy, Spain, Greece, Turkey, Australia.	

Amberg Technologies AG  
Trockenloostrasse 21  
CH-8105 Regensdorf  
Switzerland

Tel. +41 44 870 92 22  
Fax +41 44 870 06 18  
info@amberg.ch  
www.amberg.ch/at

