

Amberg Tamping VMS 3000

The long-chord track survey system for demanding track works



Innovation of a proven principle for track works

- Long chord method
- Combined survey of track and lateral distance offsets in one run
- Absolute accuracy 3 mm
- 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 – twin-trolley mode

- 1st Choice for measurements during track closures
- Measuring performance of up to 2300m/h
- Length of reference chord of up to 250m
- Measuring system GRP 3000 consisting of precision sensors for gauge, superelevation and distance, Profiler 120 FX with prism and ruggedized notebook
- Measuring system GRP TSC with automatic tripod for quick and easy self-levelling of tachymeter
- LED lightening bar assuring safe work during night
- User friendly handling specially designed for track workers



Greatest flexibility under demanding project conditions – tripod mode

- Ideal for short track sections, e.g. turnouts, multi-track sections and projects with limited track access
- Length of reference chord of up to 400m
- Measuring system GRP 3000
- Tachymeter on tripod (with automatic self-levelling tribrach)
- 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

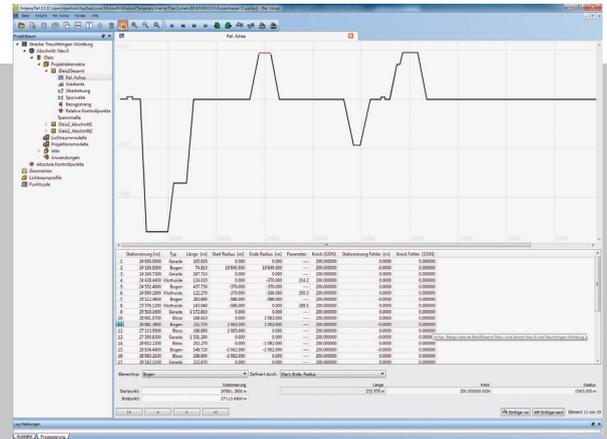


Easy to use, fully controlled, highly efficient – From preparation through to evaluation

Project data management

Simple and quick project data management

- Project setup and track data definition in only a 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

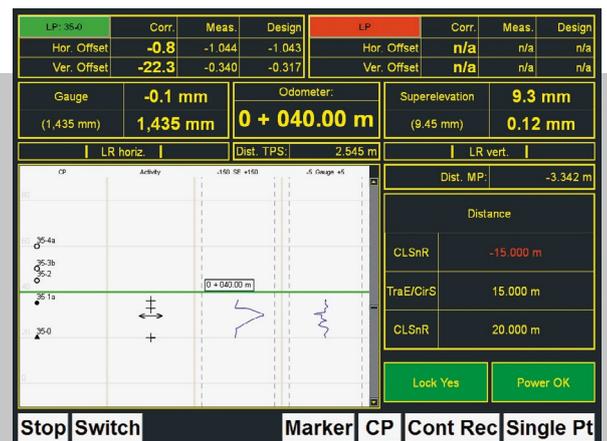


Project data input – intuitive, safe, efficient

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

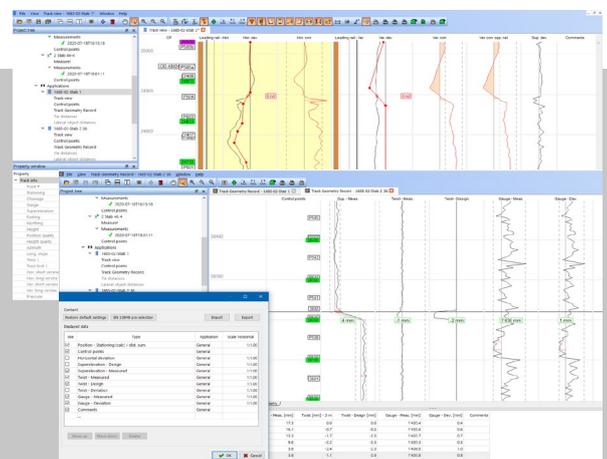


Screen display – clear, meaningful, ergonomic

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

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System performance and technical data

| 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 120 FX | |
| Fixed-point distance | < 20 m |
| Weight ▪ incl. computer, batteries | 30 kg |
| Amberg GRP TSC | |
| Self-levelling tribrach ▪ time | < 5 s |
| Weight ▪ incl. total station, batteries | 33 kg |
| Total station | |
| Leica total station ▪ motorized, ATR ▪ radio modem | TS15/16, TS30, TS50/60, MS50/60 |
| System accuracy | |
| Survey of track position and height ¹⁾ | |
| ▪ 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 |
| Measuring frequency | |
| Track geometry ▪ 3D track position, gauge, crosslevel | |
| ▪ Stop & Go | < 5 s / measurement |
| ▪ Kinematic | < 7 measurements / s |

| Environmental specifications | |
|---|--|
| Working temperatur range | - 10° to +50° |
| Humidity ▪ non-condensing | < 80 % |
| Typical performance | |
| Twin-trolley mode | 1000–2300 m/h |
| Tripod mode | 700–1100 m/h |
| Tamping 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 | |
| CE Conformity | EN 61326-1:2013 EN 61000-6-2:2005 EN 61000-6-4:2007/A1:2011 EN 60825-1:2014 EN 13977:2011 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. | |

¹⁾ Depending on e.g. chord length, atmospheric conditions, control point quality, positioning sensor and project conditions.