

Amberg Tamping IMS 1000 / 3000

The only one-trolley long-chord systems



Revolution of a measuring principle

- Trusted VMS work procedure (long-chord method) – with only one measurement trolley
- Combined survey of relative and absolute track geometry in one run
- Absolute track accuracy up to 1 mm
- Unrivalled survey performance up to 4000 m/h
- No geodetic skills for operator required
- Various export formats and safe transfer of correction data for tamping machines
- Up to 90 % cost savings compared to traditional methods

Modular system design

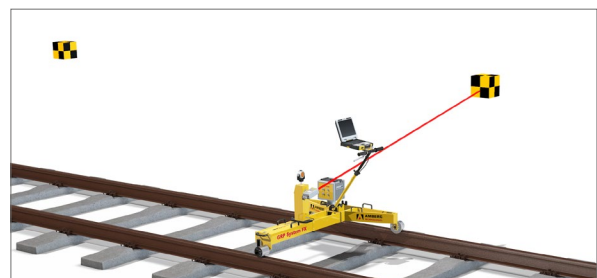
- Measuring trolley consisting of precision sensors for gauge, superelevation and distance and ruggedized notebook
- AMU 1030 (Amberg Measuring Unit) for unrivalled kinematic measurement precision
- Two control point (CP) measuring devices of choice:
 - Tachymeter (IMS 1000): single and multi CP mode
 - Profiler 110 FX (IMS 3000): single CP mode
- Modular system upgrading possibilities
- Easy handling, simple transportation
- LED-lighting for secure work at night
- Robust hardware design for hard environment



Front: Amberg IMS 1000 with tachymeter
Back: Profiler 110 FX for Amberg IMS 3000

Single control point mode

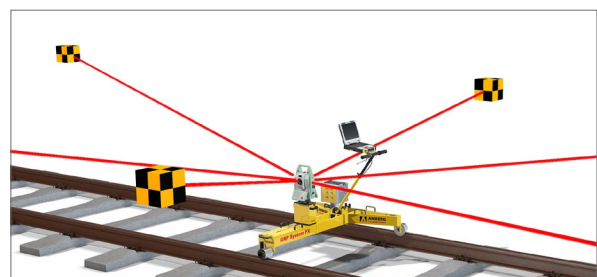
- High performance for long track sections
- First choice for measurements during short track closures
- Measuring performance up to 4000 m/h, typically 2500 m/h
- Distance between CP measurements up to 500 m
- Fully automatic relative control point measurement with IMS 1000
- No loss of accuracy due to refraction
- No line of sight required



Single control point mode with Amberg IMS 3000 or IMS 1000

Multi control point mode

- For demanding project accuracies
- Tachymeter setup with multiple control points ensures highest accuracy and reliability
- Complete setup control out of Amberg Rail software
- Measuring performance up to 1500 m/h, typically 1000 m/h
- Distance between Tachymeter resections up to 500 m
- Increased efficiency without Tachymeter leveling
- Minimization of potential control point errors




Multi control point mode with Amberg IMS 1000

Amberg Tamping IMS 1000 / 3000

System performance and technical data

System configuration		
	IMS 1000	IMS 3000
Gauge (mm)	1000, 1067, 1435, 1520/24, 1600, 1668/76	
Gauge measuring range (mm) (for nominal gauges)	-25 to +65	
Cross level (cant) at 1435 mm (mm)	+/- 260	
CP measuring device	Leica total station MS50, TS50, TS30, TS15	Amberg Profiler 110 FX
Weight total system (kg) incl. batteries, notebook, all measuring devices	49	47

System accuracy			
	IMS 1000		IMS 3000
	single	multi	single
CP mode			
Track position and height ¹⁾	+/- 2	+/- 1	+/- 3
Track geometry (versine), 2 sigma			
- 30 m chord (mm)	+/- 0.7	+/- 0.7	+/- 0.7
- 300 m chord (mm)	+/- 3	+/- 3	+/- 3
Cross level (cant)	+/- 0.5	+/- 0.5	+/- 0.5
Gauge (mm)	+/- 0.3	+/- 0.3	+/- 0.3
CP measurement (mm) - relative to track axis	+/- 1	+/- 1	+/- 3
Measuring frequency			
Track geometry			
- 3D track position, cross level (measurements/sec)	100	100	100
- Gauge (measurements/sec)	10	10	10
Performance			
Typical measuring speed (m/h) ²⁾	2500	1000	2500
Max. measuring speed (m/h)	4000	1500	4000

Environmental specifications	
	IMS 1000 / IMS 3000
Working temperature range	-10 to +50
Humidity (non-condensing)	< 80%
Tamping data	
Tamping data preparation (correction data calculation incl. ramping)	< 15 min / 500 m
Tamping data formats	Plasser WinALC, ALC CGV5 Framafer BAO3 Matisa Harsco
System approvals	
CE Conformity	EN 61326-1:2005 EN 61000-6-2:2005 EN 61000-6-4:2006 Directive 2004/108/EC Directive 2002/95/EC
GRP System FX approvals from:	Network Rail / London Underground (UK), Deutsche Bahn (DE), SBB (CH), SNCF (FR), ÖBB (AT), RFI (IT), Adif (ES), Infrabel (BE)
	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, United Kingdom, Saudi Arabia, UAE, Korea, USA, PR. China.	

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

²⁾ Typical experience values, may depend on project conditions.