



SLOFEC[®]



Tank Testing Systems



2022



SLOFEC® Tank Testing Systems



Company Profile

TMT Test Maschinen Technik GmbH is a specialized provider of innovative electro-magnetic inspection equipment. TMT is the inventor of the SLOFEC® technology standing for **S**aturation **L**ow **F**requency **E**ddy **C**urrent technique and is delivering advanced non-destructive testing solutions to the worldwide process industries including the Oil & Gas (on- & offshore) industry, refineries, petrochemical and power plants since 1982.



The range of high performance SLOFEC® tank floor and pipe scanners are designed and built by our in-house R&D team. The experience and feedback from more than 15 years tank floor inspection service has been integrated into our equipment to offer our clients superior equipment for reliable and thorough inspection tools.

The SLOFEC® floor scanners are designed to cover maximum testable areas with minimal dead zones on the floor plates adjacent to the tank shell, under obstacles and on floor plate overlaps. The unique computer aided SLOFEC signal data analysis and reporting software allows the defect depth determination on highest level and comprehensive mapping of topside and underside defects inclusive indication lists.

An additional advantage of the SLOFEC® technique in practice is that only low preparation and limited cleaning of the surface to be inspected is required.

Products

- SLOFEC® tank floor scanner
- SLOFEC® hand scanner for testing of overlap welds
- SLOFEC® tank wall scanner
- SLOFEC® pipe scanner
- CRIS® weld scanner for surface crack detection

Consolidated Companies



TMT Test Maschinen Technik GmbH

Equipment Sales



Kontrolltechnik GmbH

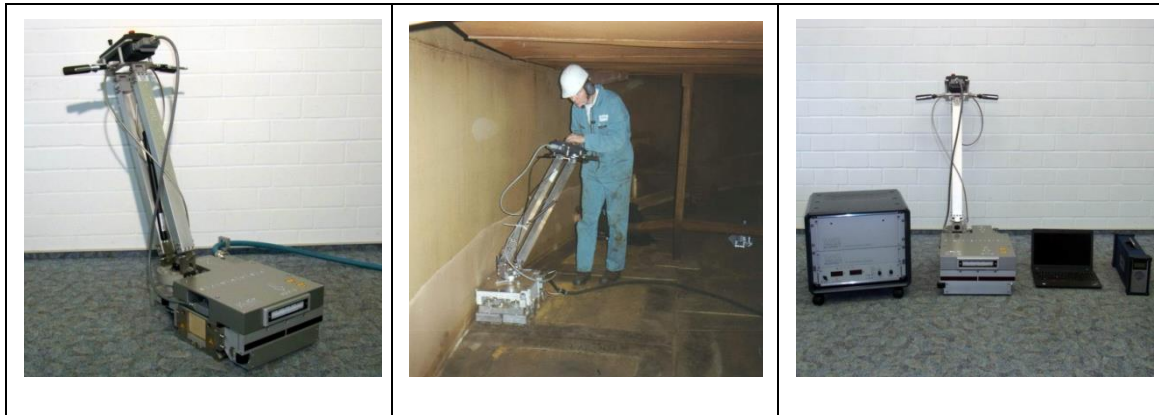
Inspection Services



TER Test Equipment Rentals GmbH

Equipment Lease and Rentals

SLOFEC® is technology and registered trademark of KontrollTechnik GmbH – Germany



Tank Floor Scanner Type FS400EM.V4

Main Features

The FS400EM.V4 scanner is designed to cover the full range of thick walled and thick coated tank floors up to 25mm plate thickness and 12mm non-metallic coating thickness. The modular design of the FS400EM.V1 scanner allows fast setup of the equipment in the tank and accurate and cost effective operation of the tool on bottom plates as well as on annular plates.

- effective testing by 400 mm scanning width
- 20-channel sensor array for high defect resolution
- DC-motor drive for scanning speed up to 0.5m per second in both directions
- guidable rear wheels for easy maneuverability
- twistable and up-down movable handlebar for optimal access to difficult to reach areas
- removable handlebar for easy installation in the tank.
- stop on defect and LED-bar indication for both scanning directions
- side rollers for driving along the tank wall

Technical Data

Scanner Unit FS400EM.V4

magnetization	: electro-magnet
weight	: 120 kg (parted into 6 modules)
dimensions	: 555 x 400 x 220 mm LxWxH (without handlebar)
number of sensors	: 20
sensor width	: 20 mm each

Power Supply Unit



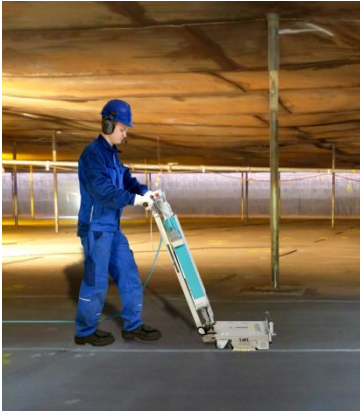
power supply	: 110VAC - 240VAC (outside the tank) 40 VDC (scanner magnetization) 24 VDC (motor + electronics)
weight	: 42 kg
dimensions	: 485 x 550 x 280 mm LxWxH

Signal Cable

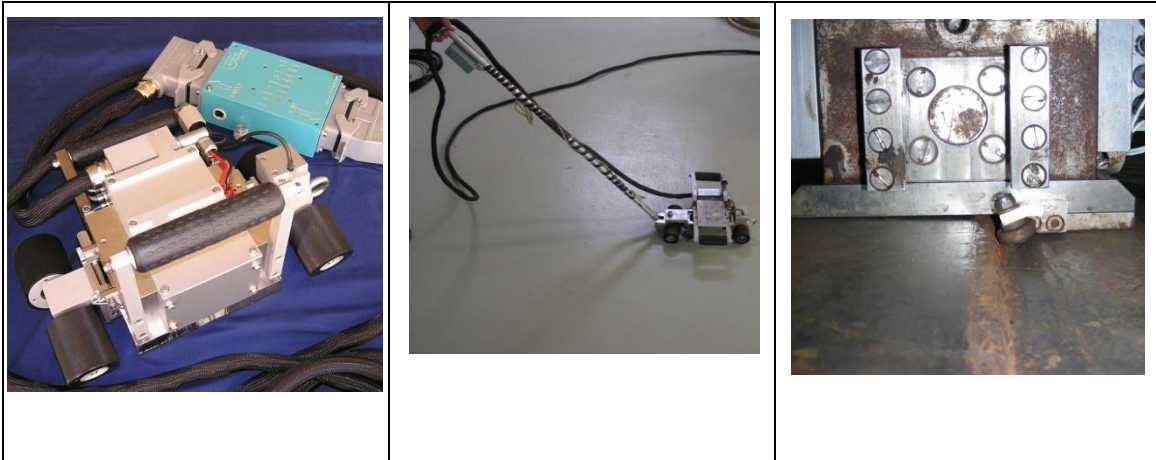
length	: 25 m (can be extended to 100 m by elongation cable)
weight	: 1 kg/m

Data Acquisition and Analysis Unit

type	: eddyMax "The Box"
no. of channels	: up to 32
computer	: Notebook (upon customer spec.)

		
Tank Floor Scanner Type FS300PM.V3		
Main Features	Technical Data	
<p>The FS300PM.V3 scanner is designed to cover the most common tank floor plate thicknesses up to 15mm. The mechanical design of the FS300PM.V1 scanner allows fast setup of the equipment in the tank and accurate and cost effective operation of the tool on bottom plates as well as on annular plates. Especially by its small height of 120mm the FS300.V1 scanner is ideal to test under heating pipes or other obstacles. For testing of larger areas covered by e.g. heating pipe assemblies, the handle bar can be completely removed and the scanner can be remotely operated via an 8m long cable.</p> <ul style="list-style-type: none"> ▪ effective testing by 300 mm scanning width ▪ small height of 125 mm to scan under heating pipes and obstacles. ▪ 8-channel sensor array for high defect resolution (optional 16-channel sensor array) ▪ DC-motor drive for scanning speed up to 0.5 m per second in both directions (optional) ▪ twistable rear wheels for easy maneuverability ▪ twistable (3 steps) and up-down movable handlebar for optimal access to difficult to reach areas ▪ removable handlebar for easy installation in the tank. ▪ stop on defect and LED-bar indication for both scanning directions (only in combination with motor option) ▪ side rollers for driving along the tank wall 	<p>Scanner Unit FS300PM.V3</p> <p>magnetization : permanent magnets weight : 55 kg dimensions : 500 x 300 x 125 mm LxWxH (without handlebar) number of sensors : 8 /(16 optional) sensor width : 37,5 mm each / (18,75 optional)</p> <p>Power Supply Unit</p> <p>power supply : 110VAC - 240VAC (outside the tank) optional external battery pack 24 VDC (motor + electronics) weight : 15 kg dimensions : 400 x 250 x 270 mm LxWxH</p> <p>Signal Cable</p> <p>length : 30 - 120 m (maximal) weight : 0,4 kg/m</p> <p>Data Acquisition and Analysis Unit</p> <p>type : eddyMax "The Box" no. of channels : up to 32 computer : Notebook (upon customer spec.)</p>	

SLOFEC® is technology and registered trademark of KontrollTechnik GmbH – Germany



Hand Scanner Type LS150EM.V2

Main Features

The Hand Scanner LS150EM.V1 is designed for testing of restricted areas in tank, which cannot be reached by the floor scanner units FS400EM or FS300PM. The scanner can be equipped with flat pole shoes for scanning under obstacles, with stepped pole shoes for testing the weld zone of overlapped welded floor plates or with curved pole shoes for testing tank wall sections.

- effective operation by 150 mm scanning width
- small scanner height for access to small gaps by detachable electronic box
- 8-channel sensor array for high defect resolution (optional 16-channel sensor array)
- applicable up to wall thicknesses up to 18 mm
- pole shoes and sensor fixture exchangeable
- twistable rear wheels for easy maneuverability (optional)
- trigger wheel for distances constant scanning

Technical Data

Scanner Unit FS150EM.V2

magnetization	: electro magnets
weight	: 25 kg
dimensions	: 350 x 220 x 120 mm LxWxH (without hand grips and electronic box)
number of sensors	: 8
sensor width	: 18,75 mm each

Power Supply Unit

power supply	: 110VAC - 240VAC (outside the tank) 40 VDC (magnetization) 24 VDC (electronics)
weight	: 22 kg
dimensions	: 400 x 500 x 170 mm LxWxH

Signal Cable

length	: 30 - 150 m (maximal)
weight	: 0,25 kg/m

Data Acquisition and Analysis Unit

type	: eddyMax "The Box"
no. of channels	: 8 (optional 16)
computer	: Notebook (upon customer spec.)



Wall Scanner TWC20.V2

Main Features

The TWC20.V2 is a steerable wall climber designed for the detection of corrosion in tank walls (e.g. inspection isolated tanks for corrosion under the isolation or inspection of floating roof positions). The TWC20.V2 is containing either SLOFEC pipe scanner units LS120EM.V2 or LS150EM.V2. The drive units hold to the wall by magnet wheels. Operation and testing even through painting or even thin coating is possible. The wall scanner is applicable at inner as well as at the outer tank walls.

- 100 - 150 mm scanning width (depending on scanner type)
- four wheel drive with steering
- drive wheels with rubber coated inlet for optimal grip to the surface and prevention of damage to the coating
- scanning height up to 25 m
- flexible drive unit arrangement in order to pass welds and surface irregularities.
- applicable for vertical and horizontal scanning
- trigger wheel for distances constant scanning
- camera installed on the scanner for surveillance and video inspection (optional)

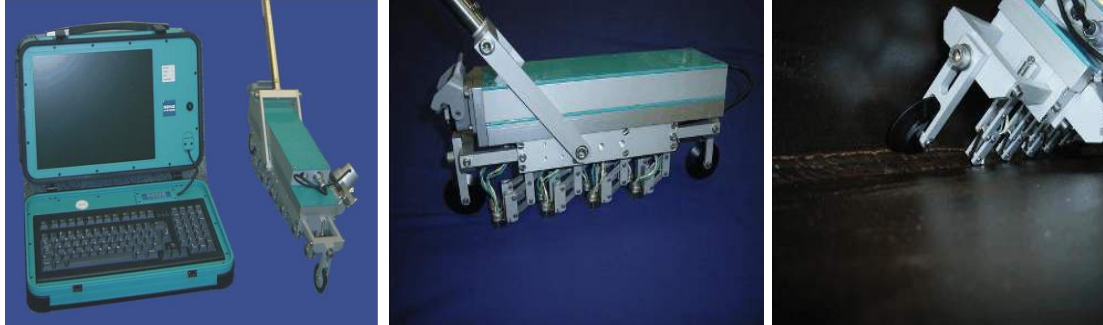
Technical Data

Wall Climber Unit TWC20.V2

weight	: 25 kg (only climber without LS120EM.V2 or LS150EM.V2)
dimensions	: 470 x 435 x 290 mm (LxWxH)

Power Supply Unit

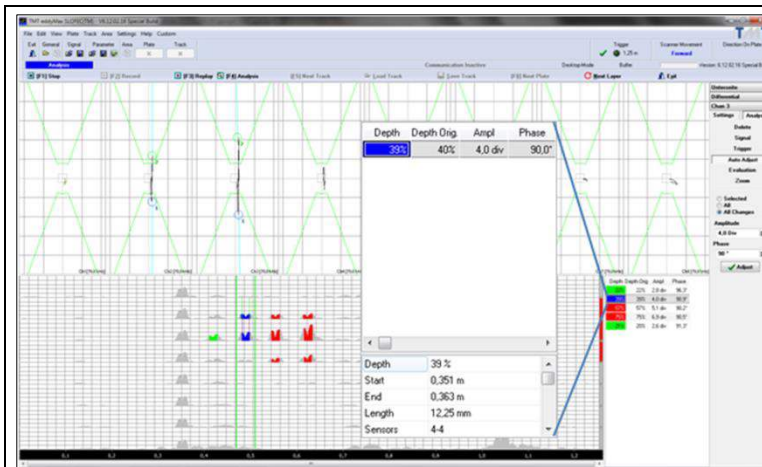
power supply	: 110VAC - 240VAC (outside the tank) 24 VDC (motor + electronics)
weight	: 22 kg
dimensions	: 400 x 500 x 170 mm (LxWxH)

	
<h2>Weld Scanner Type WT80.V1</h2>	
<h3>Main Features</h3>	<h3>Technical Data</h3>
<p>The weld scanner type WT80.V1 is designed for the inspection of corner welds and plate to plate welds inclusive the heat affected zone in tanks, vessels for possible cracking. Due to the big amounts and big lengths of welds in the above mentioned components there is a big need for an fast, reliable and sensitive and therefore cost effective weld testing technique. The WT80.V1 has an 8-channel sensor array where each sensor is fixed in a separate spring-loaded holder to follow changes in the weld contour and to cover the weld and heat affected zone in a single inspection run.</p> <ul style="list-style-type: none"> ▪ effective operation by 40 mm scanning width ▪ 8-channel sensor array for high defect resolution ▪ applicable also on coated welds with coating thicknesses up to 6 mm ▪ pole shoes and sensor fixture exchangeable ▪ trigger wheel for distances constant scanning 	<p>Scanner Unit WT80.V1</p> <p>weight : 8 kg dimensions : 350 x 100 x 120 mm LxWxH (without guide bar) number of sensors : 8 sensor width : 8 mm each</p> <p>Signal Cable</p> <p>length : 30 - 100 m (maximal) weight : 0,25 kg/m</p> <p>Data Acquisition and Analysis Unit</p> <p>type : eddyMax "The Box" no. of channels : 8 (optional 16) computer : Notebook (upon customer spec.)</p>

SLOFEC® is technology and registered trademark of KontrollTechnik GmbH – Germany

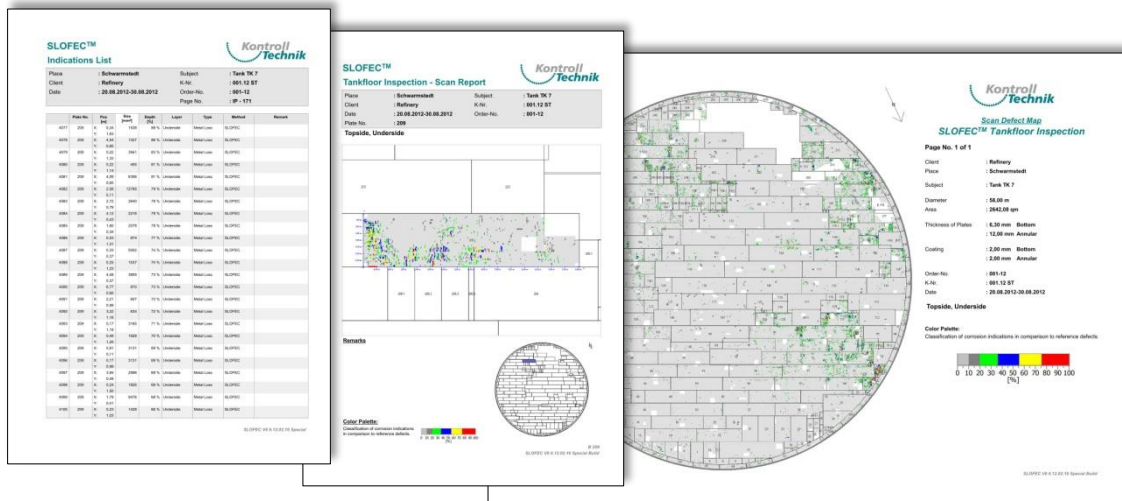
SLOFEC® Tank Testing Systems

T.M.T.
Test Maschinen Technik GmbH



The SLOFEC® Software
Version 6
Data Acquisition and Signal
Analysis Screen

The SLOFEC® Software
Version 6
Report Output



The SLOFEC® C-Scan Data Acquisition Signal Analysis and Reporting Software

Main Features

The SLOFEC® system is prepared to fulfill all documentation requirements. Signal data from each scanned track can be either processed online or stored data can be retrieved and processed in a later stage. The SLOFEC® signal analysis software supports the operator by automatic signal detection and depth evaluation function. Evaluated defect depths are automatically stored and directly ready for a comprehensive color scan documentation of the complete tank floor and each tested plate.

- generation of tank maps and scan tracks
- signal data storage on computer
- online signal detection and depth evaluation separate for subsurface and surface defects
- output of tank defect map, single plate report and feature list
- change of color palette after inspection
- input of installations on different layer
- laptop version for independent documentation

SLOFEC® is technology and registered trademark of KontrollTechnik GmbH – Germany