

SARSYS Trailer Friction Tester



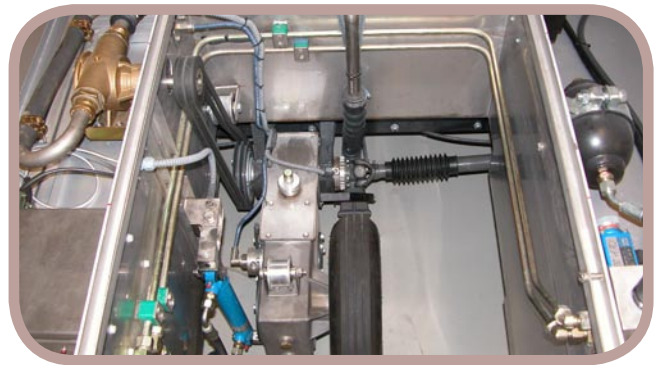
– for safe takeoff and landing



SCANDINAVIAN AIRPORT AND ROAD SYSTEMS AB (SARSYS AB) is one of the world leaders in friction testing for airports. SARSYS, located in Trelleborg, Sweden, develops, manufactures and markets two types of friction testing equipment. The SARSYS team has more than 25 years of experience with friction testing equipment beginning with SAAB in the 1970's. SARSYS is committed to customer satisfaction and our products are designed to meet present and future needs. With our highly-skilled development and service staff and full control of the manufacturing, we offer the most efficient, modern and lowest lifetime cost friction testers produced in the world today, both with the SFT built into a SAAB 9-5 Wagon and the STFT, the SARSYS Trailer Friction Tester.

MAIN PRODUCT FEATURES (STFT)

- Measuring programme in accordance with ICAO and FAA
- EMC tested and approved (EMC/89/336/EEG)
- Approved and CE-certified (97/37/EG)
- Standard equipped with water tank for maintenance measuring
- Approved by FAA and SCAA (Swedish Civil Aviation Authority)
- Operational efficiency, modern technology
- The trailer frame/tank manufactured of stainless/acid proof steel
- Transmission in aluminium and stainless steel
- Balanced/weighted for perfect repeatability of the measurement



Basic principle and general description

The measuring system is the famous SARSYS Single Transmission system used in the SARSYS Friction Tester and also built into the SAAB 9-5. It is primarily designed for friction measuring on airport runways and taxiways, but can also be used for measuring on roads.

The STFT is programmed to measure in accordance with regulations issued by authorities such as ICAO and FAA, and designed for both operational and maintenance measuring. The system consists of a measuring wheel which is mechanically geared to the right hand wheel on the trailer. The gear ratio is such that, when travelling along the runway, the measuring wheel cannot follow the runway surface freely, but rolls with a certain fixed slip.

Measuring programmes

The SARSYS S2000 computer system is pre-programmed for complete measurements in accordance with ICAO and FAA regulations as basic modes.

In addition, there are modes for taxiways and ice-coverage measurements.

Hydraulic system

The hydraulic system comprises an electrically powered hydraulic pump, a hydraulic cylinder, a valve block, pressure switches, a pressure accumulator, valves and piping.

The hydraulic system retracts or lowers the measuring wheel on the surface and also provides the vertical load on the measuring wheel during measuring.

The gear-type hydraulic pump is powered by an electric motor supplied with current from the electrical system on the trailer.

The electrically operated valves in the valve block system are controlled by the computer with relays.

Electrical system

The trailer has its own electrical system which comprises two batteries, battery charger, lights, relays, heater for the case for the electrical components and sensors for the electrical system.

The batteries can be charged direct as the trailer has its own charger. A heater is installed in the box for electrical equipment to keep the components dry and at the right temperature for a long maintenance-free lifetime.

The sensors are:

- horizontal load sensor
- vertical load sensor
- pulse transmitter

Computer system

The computer controls the measuring process in accordance with the selected programme, e.g. measurement according to ICAO; FAA; Taxiway mode etc.

The computer system comprises the following components:

- Central computer with CPU
- Keyboard with display and analogue indicator
- Printer
- Preamplifier

The computer system is built into a box with the exception of the preamplifier, which is fitted in the box for electrical equipment on the trailer.



TECHNICAL DATA AND PERFORMANCE

Size

Total length including the towing bar	3500 mm
Total width	1800 mm
Total height	1100 mm
Total weight without water	560 kg
Total weight with water	1120 kg

Speed

Maximum measuring speed	130 km/h
Minimum measuring speed	45 km/h
Normal measuring speed	96 km/h

Measuring tyre, 4.00-8"

For operational measuring	High pressure type, Unitester 700 kPa (7 bar, 100 psi)
For maintenance measuring	Low pressure type; ASTM 1551 200 kPa (2 bar, 30 psi)
Trailer tyres	Suitable dimension 195/65R 15

Slip ratio, measuring

Temperatures and humidity

Temperature limits computer	Max operational temp. +45 C
	Min operational temp -25 C
Humidity max	98%

NOTE: This is a preliminary specification and may be changed without notice

THE COMPANY SCANDINAVIAN AIRPORT AND ROAD SYSTEMS AB (SARSYS)

Design philosophy

An important guideline for the design of the STFT has been to make full use of the well known SARSYS friction measurement equipment built into the SAAB 9-5. The main reason to construct the trailer with the same type of design is to ensure complete compatibility with the world-standard Sarsys system and to make it possible to minimize the cost for spare parts stock and service when using both types of equipment.

The trailer is designed with a single suspended axle. The suspension consists of a rubber torsion system with an extremely long lifetime without costs for maintenance and service.

For measuring on wet runway, stipulated for maintenance measuring, the STFT is equipped with a water tank as standard. The water tank is made of stainless/acid proof steel for a long life time without any cost for service. We have used this unbeatable material as the environment on today's runways and taxiways gives a very short life time for standard material. The water tank has a volume of 560 litres, sufficient for 7000 meters (23000 ft) of runway with a 1 mm water layer.

Reliability

SARSYS Trailer Friction Tester (STFT) is an extremely reliable unit. The design is based on more than 25 years of experience when it comes to friction testers for airports. We have combined our senior design team's extensive experience with the latest advances, coming from our younger generation of designers. All material and components are of the highest quality and carefully tested to give the unit a long operational lifetime with minimal repair and maintenance. This is of great importance in keeping operational costs at a minimum.

Service and spare parts

Even with a top design and excellent back-up from SARSYS, all types of mechanical, hydraulic, computer and electrical designs need to be serviced. We have paid a lot of attention to make the trailer as simple and inexpensive as possible over the operational lifetime. Our dedicated service team is prepared to give customers professional back-up whenever and wherever it is needed. We also have a well-stocked spare parts store in Sweden, from which we can deliver any parts needed for a smooth and undisturbed measuring cycle.



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