Cold-Heat-Cooling Tunnel
Type 1100/25 DU – 1600/+125 DU – 800/+22 IU
with conveyor system and contacting stations

SBA: Electronics

Application

This conveyor tunnel system has been designed for the temperature-conditioning and testing of two different types of pressure sensors. The test is a fully automated test.

Function

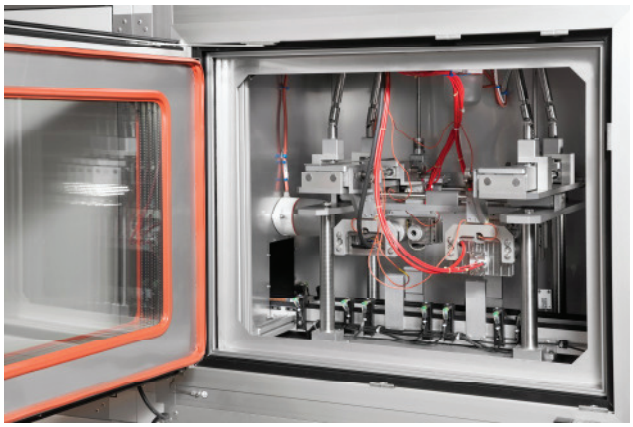
The workpiece carriers (WPCs) have a size of 120 x 120 mm and are automatically transported across the tunnel when loaded with the specimens. Inside the tunnel the WPCs are transported in a closed circuit.
A low temperature test is performed at -20 °C once the specimens have been cooled in the cold tunnel, followed by a high temperature test at +120 °C in the heat tunnel. After that, the specimens are cooled down to a temperature below +50 °C in the cooling tunnel.
The specimens are contacted in the test stations (pressurisation and electronic contacting of pressure sensors) while low and high temperature tests are performed.

Features

The tunnel system consists of an entry air lock, cold tunnel, intermediate air lock, heat tunnel and cooling tunnel.
The single-track conveyor belt is designed as a square.
The machine unit (water-cooled refrigeration unit) is installed below the cold tunnel (in base frame).
The compressed air drier is installed on the outside of the tunnel.
The two switch cabinets are installed separately, next to the tunnel system.
A loading/unloading station is installed on the external transport belt (in front of tunnel entrance) for the manual loading and unloading of WPCs.

A *Siemens TP 900* control terminal is arranged on the loading/unloading station.

The tunnel system has 4 contacting and test stations (incl. mechanical feed units):
- 2 low temperature contacting stations (in cold tunnel, arranged one behind the other)
- 2 high temperature contacting stations (in heat tunnel, arranged one behind the other)



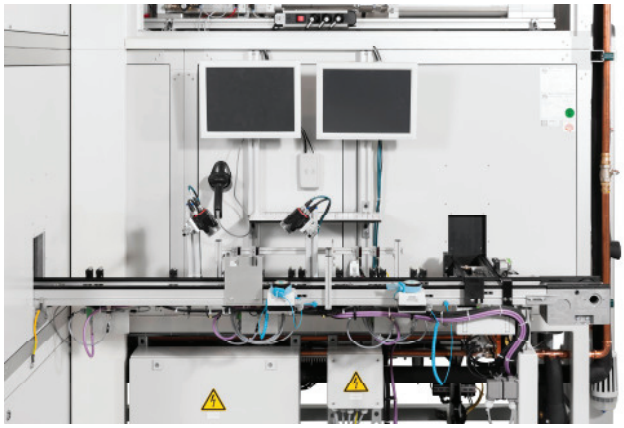
The entire system is controlled by a *Siemens* PLC (S7-300). Certain functions can also be controlled via the customer-provided measuring computer.
The necessary contacting devices (contact boards for electronic and pneumatic contacting), pressure generator and measuring computer are provided by the customer.

Additional solutions

Special chambers (e.g. test chambers with carousel system).

Global Partner for Environmental Test Chambers

Weiss Technik North America, Inc.
3881 N. Greenbrooke Dr. SE
Grand Rapids, MI 49512 USA
Tel: 1-800-368-4768 • (616) 554-5020
Fax: (616) 554-5021
www.weiss-na.com



Technical data
External dimensions of tunnel system (excluding switch cabinets):

Height:	approx. 2350 mm
Width:	approx. 1900 mm
Length:	approx. 5900 mm
Number of transport tracks:	1 track
Dimensions of WPC:	120 mm x 120 mm
Loading of WPC:	1 large pressure sensor or 2 small pressure sensors
Number of WPCs:	50 pcs.
Clock time per WPC:	60 seconds/WPC
WPC throughput:	max. 60 WPCs/h
Testing of specimens:	25 or 50 seconds (period of contacting)
Air flow in tunnel:	horizontal, in opposite direction of transport

Temperature ranges in the tunnel:
- Cold tunnel -25 to +40 °C
- Heat tunnel +70 to +125 °C
- Cooling tunnel +22 to +26 °C

Test temperatures:
(Temperature of pressure sensors in contacting stations):
- Contacting stations in cold area -20 °C ±3K
- Contacting stations in hot area +120 °C ±3K

Temperature of pressure sensors when leaving the cooling tunnel: max. +50 °C

Global Partner for Environmental Test Chambers

Weiss Technik North America, Inc.
3881 N. Greenbrooke Dr. SE
Grand Rapids, MI 49512 USA
Tel: 1-800-368-4768 • (616) 554-5020
Fax: (616) 554-5021
www.weiss-na.com