



**Innovative
Technological
Equipments**



TMMC6Z

Multizone composites curing and repair temperature and vacuum controller

Up to six independent zones available with its own PID parameters.

SIEMENS Simatic S7 PLC controller inside.

Manual or fully automatic mode. Load a preprogrammed cycle and run.

Ergonomic working height!!! Wheeled 19"rack 20u.

USB, Wifi, Ethernet connectivity! Send reports on-the-fly!!!

TMMC6Z is a six zones general purpose temperature and vacuum controller equipment for Composite damaged structures. Six independent PID loops and SSR phase controlled 0 to 100% power regulation, allow for accurate management of each control zone different thermal behavior, i.e. different heat dissipation, heated mass...

With a powerful PC based controller running an extremely powerful and user friendly software, it can perform either six simultaneous or totally independent curing cycles with up to 24 freely assignable temperature channels. Vacuum requirement are reached by quick connection inputs either to a pressurized or to a vacuum workshop supply line. Optionally, an internal vacuum pump can be provided.

The advanced software package in the TMMC6Z has been designed by and for curing and repair process specialist and can easily be managed by operators from the first try. When curing process gets done, a detailed report can be digitally stored or printed out on any local or networked printer. The electrical section includes 2 x 3P+N+E Cetact IEN60309 32A connections, each driving a group of 3 zones, 230Vac, 7,3 kW each, to power a heating system (heating blanket, IR lamps,...).



TECHNICAL SPECIFICATIONS

N° OF ZONES	6; SIMULTANEOUS OR INDEPENDENT
N° OF TEMP. CHANNELS	24
CH. PER ZONE	USER CONFIGURABLE
THERMOCOUPLES	J
VACUUM GENERATION	LINE OR VENTURI
OPTIONAL VACUUM PUMP	21 LPM, MIN. PRESSURE 1,5 HPA
VACUUM OUTPUTS PER ZONE	1
CURRENT PER ZONE	32A
HOUSING	WHEELED RACK 19" 20u
USER INTERFACE	24" MONITOR
USB CONNECTOR	1
ETHERNET CONNECTION	1
VACUUM OUTPUTS	QUICK CONNECTOR WITH SELF-LOCKING

CONTROL SOFTWARE

USER LEVELS	3
CYCLES CONFIGURATION & OPERATION	TOTALLY INDEPENDENT PER ZONE
TYPE OF SEGMENTS	CONSTANT TEMPERATURE POSITIVE OR NEGATIVE RAMP HOTTEST, COOLEST OR AVERAGE
TEMPERATURE CONTROL	YES
TEMPALARM BANDS	YES
CALIBRATION UTILITY	YES
FILE MANAGEMENT	YES
LANGUAGE	ENGLISH, SPANISH
ALARM SIGNALLING	AUDIBLE & VISUAL
VISUALIZATION TOOLS	ZOOM, SCROLL
EXPORT FORMAT	CSV

PHYSICAL

HOUSING DIMENSIONS	585 x 585 x 1 135 Mm
HOUSING WEIGHT	60 kg

The software allows the user to easily generate and edit temperature profiles, run curing process, display temperature channels and save temperature and pressure data to a predefined file in csv format, with possibility of further offline retrieving and analysis.

Main Utilities coming with the software are:

- Users management. Three user levels are predefined: Administrator, Technician, and Operator, each with their own access privileges to different capabilities.
- Curing profiles programming. Complex time profiles including heating up and cooling down temperature ramps, as well as alarm bands, can be easily programmed following an intuitive sequential process in the profile editor.
- Stored Project data retrieve. Virtually unlimited number of profiles and measurement can be stored in the PC memory. Advanced zooming and scrolling.



- Automatic mode. In this mode, an operator can select a previously programmed temperature profile and immediately run it without editing capability. When the test ends, a process report can be printed out.
- Manual Operation Mode. Administrator can manually control heaters power, alarm on/off and temperature readings to check proper functioning before process is started. Thermocouples can be deselected during curing process.
- Temperature and vacuum sensors calibration dedicated utility. Both offset and span for each temperature and vacuum channel can be manually adjusted to reach a more precise measurement.