PRODUCT OVERVIEW

Transcutaneous Energy Transmission Thermal Testing System

KP3100 | Robotic positioning and temperature monitoring

KingPo KP3100 supports local temperature evaluation of transcutaneous energy transmission components used in active implantable circulatory support devices. It brings robotic positioning, a transparent test tank, temperature acquisition and a software workflow into one laboratory platform.



KP3100 system illustration with robotic test platform and mobile control cabinet.

At a glance

Product attribute	KP3100 configuration
Test objects	TET transmitter and receiver assemblies
Primary evaluation	Local temperature changes and temperature-rise analysis
Standard reference	ISO 14708-5:2020, Clause 6.6.3.5.6
System arrangement	Robotic test area, temperature acquisition and integrated operator interface

Thermal evaluation addresses one aspect of TET qualification. Input/output power and transfer efficiency require separately confirmed measurement instrumentation.

Hardware and measurement arrangement

The illustrated system places the test area and operator interface on a mobile cabinet. The transparent tank and component fixtures provide access for DUT installation, probe placement and visual inspection.



Robotic test assembly and TP700 temperature acquisition instrument. Images are illustrative.

System element	Technical description
Positioning assembly	KUKA robotic arm for arranging the test components; operating envelope and positioning performance to be confirmed
Test area	Transparent tank on a support frame; usable dimensions and test medium defined for the DUT
Operator interface	Integrated display, emergency stop and cabinet-mounted instrument modules
Temperature acquisition	TP700 multi-channel temperature acquisition instrument
Mechanical arrangement	Mobile cabinet with casters

Temperature measurement configuration

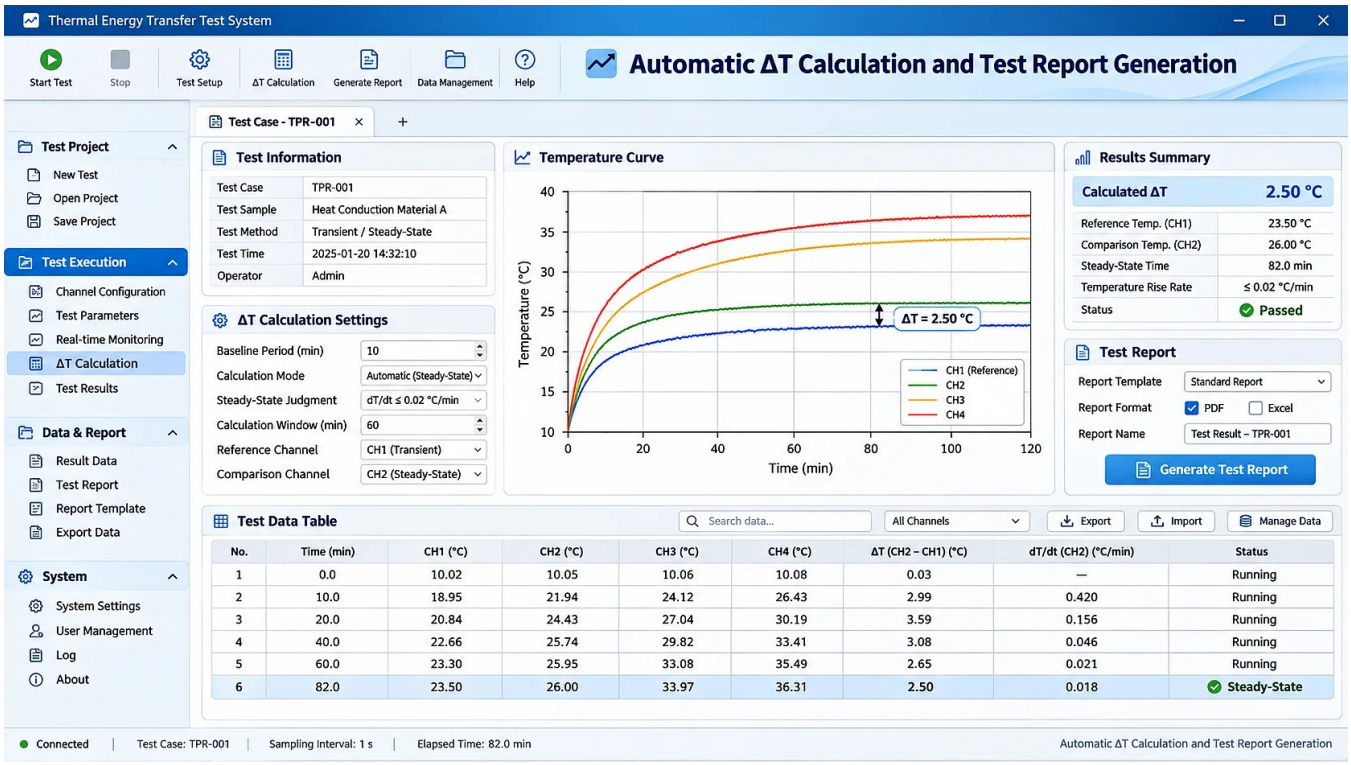
Define the installed channel count, probe type, wiring arrangement, measurement range, uncertainty and sampling interval for the intended test. These values depend on the selected acquisition and sensor configuration.

Fixture and probe arrangement

Select the mounting arrangement around the transmitter, receiver and measurement locations. Probe contact, cable routing and the test medium can influence the observed thermal response and should remain documented across repeated runs.

From test setup to temperature review

The software workflow covers test configuration, temperature monitoring, data review and reporting. The illustration below shows an example analysis interface; final functions and export formats are defined in the agreed configuration.



Illustrative analysis screen. Values, curves and status indicators are demonstration content.

Workflow stage	Purpose
Test configuration	Organize test cases and record measurement locations and positioning conditions
Temperature monitoring	Review temperature traces from the configured measurement points
Data analysis	Evaluate the temperature difference using the baseline and channel definitions in the test protocol
Results and reporting	Review recorded data and prepare the configured report output

Define the temperature baseline

For the temperature rise at a single measurement point, use $\Delta T = T(t) - T_0$. A simultaneous difference between two channels is a separate quantity, $T_2(t) - T_1(t)$. The test report should state which calculation is used.

Example screen data does not establish measurement accuracy, acceptance limits, steady-state criteria or evidence of conformity.

Match the system to your test plan

Standard scope

ISO 14708-5:2020 addresses active implantable circulatory support devices. Clause 6.6.3.5.6 concerns transcutaneous energy transmission systems. KP3100 supports the local temperature-rise aspect of TET evaluation; complete qualification requires additional assessments.

The agreed protocol defines DUT operation, component arrangement, test medium, measurement locations, test duration and acceptance criteria.

Configuration checklist

Selection item	Information needed
DUT and positioning	Transmitter and receiver drawings, dimensions, mass, separation and angular conditions
Temperature acquisition	Expected temperature range, measurement uncertainty, number of points and probe dimensions
Data and analysis	Sampling interval, test duration, baseline definition and comparison method
Tank and fixtures	Usable dimensions, test medium, mounting details and cable routing
Additional measurements	Input/output power or transfer-efficiency measurement, if required
Installation and records	Footprint, electrical supply, interfaces, calibration scope and report requirements

Technical inquiry

Send the applicable standard and clause, DUT drawings, operating conditions and a measurement-point layout. Include your required uncertainty, automation needs and data output format so the proposed configuration can be reviewed against your test plan.

KingPo Technology Development Limited
Website www.dgkingpo.com
Telephone 0769-816277526

Standard reference: ISO 14708-5:2020, Implants for surgery — Active implantable medical devices — Part 5: Circulatory support devices. Official record: https://www.iso.org/standard/69898.html

KP3100 DS EN | 04 November 2026
Product images and software screens are illustrative. Numerical performance specifications require confirmation in the configuration-specific technical offer.