

Automated and precise
static load testing with
absolute control and
high performance



Titan650

ATLAS Pile Testing systems presents the Titan 650, for automated, remote controlled static load testing of piles and anchorages

It has been designed with the aim to achieve the highest possible levels of safety, load test accuracy and control.

Primary Design Objectives

- To set new standards for safe working practices
- Achieve highest levels of accuracy
- Provide absolute and immediate test control
- Offer real-time reporting of data to all stakeholders
- Make testing simpler and more cost effective



ABOUT

The Titan 650 is a remote controlled, automated, programmable system for static load testing of foundations and anchorages.

The Titan 650 enables the test controller to apply and maintain a load in a schedule of steps and for any desired duration, in accordance with a test specification and settlement criteria. Titan's pressure control system delivers load through one or more hydraulic jacks, recording pile and reaction movement and presenting data continuously in real time.

Wireless displacement sensors record the pile settlement and reaction uplift. A wirelessly controlled load cell records data at 8 times a second to provide feedback to the controller enabling the test to proceed. Further wireless rotation sensors record the performance of the reaction frame or kentledge during and after the completion of the test.

This innovative design means that a load test is now conducted with absolute control and efficiency without the need for operatives to work in close proximity to a very hazardous working environment. All data is recorded continuously and viewable live by any stakeholder from anywhere in the world.



THE TITAN 650'S KEY FEATURES

- Safety (Removing operatives from a high risk environment)
- Accuracy (Accurate increments of load application)
- Transparency (View live data and amend the test schedules in progress)
- Expediency (Controller manages tests remotely from anywhere in the world)
- Efficiency (Tests are completed quicker and more directly)



ADDITIONAL FEATURES

- High precision and rapid application of a maintained load
- Automated testing without site attendance
- Fail-safe design that uses SMART technology
- Multi sensor wireless network for monitoring pile movement and reaction uplift
- Battery operated with 3 weeks of use between charging (110V/230Vac)
- Ultra-low noise emissions for use in built up environments over night
- Built-in multi-network communications platform for use anywhere in the world
- 15" Touch screen waterproof display panel for programming tests and viewing data
- Easy to use programmable test scheduler and guest web-view log in via Platform Interactive
- Programmable alarm settings and action protocol, communicated on-line and direct to screen
- Complete package of online telephone support 24/7
- Compact design for ease of transport and site set up
- Lifting eyes and fork lift compatible
- Designed to be trailer mounted or autonomous use



GENERAL DETAIL

• Colour	Traffic yellow, dark grey
• Weight	1869kgs
Dimensions	
• Width	1524mm
• Height	1655mm
• Length	2112mm
Materials	
• Frame	RHS Steel, zinc primed two stage wet paint system
• Panels	8mm UV Stabilised Polyethylene
• Doors	Aluminium lockable roller shutter doors
Utility	
• Lighting	LED auto internal lighting
• Crane Lift	Top mounted lifting eyes 4No. each 2.5 ton rated
• Fork-lift	Compatible
• Storage system	Roof top reference frame storage and dispensing system
Reference frame	
• Beams	6No. 2200mm x 300mm quick fit truss frames
• Stands	4No. 750mm c/w height adjustment
• Bracings	4No. 1200mm snap lock

Fully compliant with the new ICE Specification for Piling and Embedded Retaining Walls 3rd Edition



UTILITY & STORAGE

- Lockable reference frame dispensing system
- Top mounted lifting eyes each rated 2.5ton
- Skid base design for rough terrain
- Fork lift lifting inlets
- Vanguard lockable roller shutter doors
- Bespoke storage compartments for sensor
- LED internal, power save lighting system
- Encapsulated power supply and power train





LOAD DELIVERY SYSTEM

• Oil Capacity	100 litre
• Oil type	Meets DIN 51524 pt. 1 & 2. Bio46, ISO VG 46, 98% Bio-degradable
• Oil filtration system	1No. Input filter, 2No. Return filter (High pressure/ Low pressure), 1No. Magnetic Particle filter.
• Oil level	External oil level optic
• Oil level indicator sensor	4-20mA, Accuracy +/- 0.25% FS
• Oil temperature sensor	4-20mA, Accuracy +/- 0.25% FS (0-100°C)
• Pressure hoses	2No. 10m Feed & Return Hoses 700 Bar rating, 2800bar burst pressure rating. Quick couple unions, threaded taper lock unions to jack.
• Chassis mounted hydraulic ports (feed & return)	External taper lock unions
• Maximum delivery pressure	660 bar
• Maximum delivery rate	13 litres/min
• Minimum pulse rate	100 milliseconds
• Controllable accumulator pressure	95 – 115 bar
• Intensifier multiplier	X6 (Max. 660 bar)
• 24Vdc compressor	2.2KW Motor, Output 6Litres/min @120 bar
• Variable SMART valve pressure regulating manifold	(Multi orifice pressure control manifold MOPCoM)
• Automated pressure delivery system	Automatic closed loop load control application system
• Manual pressure release valves	Manual release over-ride valves (High & Low)

The Titan 650 is designed specifically for foundation testing and can be used for any type of pile, anchor or bearing test.

Low voltage, self-powered, and operating silently and efficiently for many weeks between recharging.

POWER SUPPLY

• Internal Supply	6No. 260AHr 12Vdc, AGM Non-spill, internal, encapsulated, battery bank providing 780AHr @24Vdc
• Charging Point	110/240Vac dual ports (18 hours for full charge)
• Main Isolator	Manual battery isolator c/w secondary 200Amp circuit breaker
• Emergency Isolator	Emergency compressor 'E Stop Switch'
• Power Management	Digital Management Interface
• Sensor Charging Station	Built-in wireless sensor charging ports with Peli case adaption





• Touch Screen Control	15” Siemens HMI Touch-screen control console
• IP Rating	IP65
• Interface lighting	Ambient automatic light sensing technology
• Computer Control	Siemens series 1200 PLC module
• Wireless Sensor Control Module	Datum wireless control module type, PH Hub
• Wi-fi Access	On board in-built Wi-fi access point for local access control
• Communications	3G/4G modem (Dual Redundant), Sierra Wireless AirLink RV50, c/w LTE worldwide bands, band 28 & 12. 300 Mbps down-link speed
• USB Local down-load function	USB drive support
• Remote Connectivity	VNC & Siemens Smart Client
• GPS Tracking	Enabled





TEST SENSORS AND LOADCELLS

• Storage	Peli storage cases c/w built-in charging ports
• Clamps	5No. Super-clamps, 700mm reach
• TITAN 650 Level Sensors	2No. +/- 0.057 degrees
• Air temperature	+/- 1°C
• Accumulator Pressure Sensor	mV/V, +/- 0.25%
• Jack Pressure Sensor	mV/V +/- 0.25%
• Load Cell	Geokon Model 3000 PH-SG-##, full bridge
Range (KN)	1500, 4000, 8000, 12000
Over-range	150% FS
Read frequency	8Hz
Resolution	0.025% FS
Accuracy	+/-0.5% FS
Temperature range	-20°C to +80°C
Outside diameter (mm)	120, 230, 300, 405
Communications	In-built wireless transmitter
Power	12Vdc Li PO4 (2 weeks between charging)
IP Rating	IP66
• Settlement & Uplift Sensors	Datum Model PH-P- ##
Range (mm)	100, 200
Read frequency	2Hz
Resolution	0.01% FS
Accuracy	+/-0.1% FS
Communications	In-built wireless transmitter
Power	12Vdc Li PO4 (2 weeks between charging)
IP Rating	IP66
• Reaction Monitoring Sensors	Datum Model PH-T- ##
Range	+/- 15 degrees
Read frequency	2Hz
Resolution	0.009% FS
Accuracy	+/- 0.057% FS
Communications	In-built wireless transmitter
Power	12Vdc Li PO4 (2 weeks between charging)
IP Rating	IP66

The Titan 650 has trailer mount options for fast and easy set-up.



TRAILER SYSTEM

• Configuration	Twin axle heavy duty transport bed
• Payload 3.5Ton Gross Vehicle Weight	GVW, Actual Weight 610Kg, Carrying Capacity 2890 Kg
• Lighting	LED lighting with auto-switching 12 to 24Vdc
• Lockable ball hitch	Standard
• Stabilising legs	Standard
• Spare wheel	Standard



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	Length	2112mm
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	Panels	8mm UV Stabilised Polyethylene
	Doors	Aluminium lockable roller shutter doors
Internal Lighting	LED auto internal lighting	
Crane lift	4No. Top Mounted lifting eyes, each 2.5 ton rated	
Fork-lift	Compatible	
Storage system	Roof top reference frame storage and dispensing system	
Reference frame	2.2m x 4.8cm gauge, truss frames, quick fit connections	
	Beams	6No. 2200mm x 300mm
	Stands	4No. 750mm c/w height adjustment
	Bracings	4No. 1200mm snap lock fittings
POWER		
Supply	6No. 260AHr 12Vdc, AGM Non-spill, internal, encapsulated, battery bank providing 780AHr @24Vdc	
Charging Point	110/240Vac dual ports (18 hours for full charge)	
Main Isolator	Manual battery isolator c/w secondary 200Amp circuit breaker	
Emergency Isolator	Emergency compressor 'E Stop Switch'	
Power Management	Digital Management Interface	
Sensor Charging Station	Built-in wireless sensor charging ports with Peli case adaption	
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Feed and return hydraulic ports	External taper lock unions	
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Maximum delivery rate	13 litres/min	
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Controllable accumulator pressure	95 – 115 bar	
Intensifier multiplier	X6 (Max. 660 bar)	
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CONTROL SYSTEM		
Touch Screen Control	15” Siemens HMI Touch Screen Control Console	
IP Rating	IP65	
Interface lighting	Ambient automatic light sensing Technology	
Computer Control	Siemens series 1200 PLC module	
Wireless Sensor Control Module	Datum Wireless control module type, PH Hub	
Wi-fi Access	On board in-built Wi-fi access point	
Communications	3G/4G modem (Dual Redundant), Sierra Wireless AirLink RV50, c/w LTE bands worldwide, band 28 & 12. 300 Mbps downlink speed	
USB Local down-load function	USB drive support	
Remote Connectivity	VNC & Siemens Smart Client	
GPS Tracking	Enabled	
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Clamps	5No. Super-clamps, 700mm reach	
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	IP Rating	IP66
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	Range (mm)	100, 200
	Read frequency	2Hz
	Resolution	0.01% FS
	Accuracy	+/-0.1mm
	Communications	In-built wireless transmitter
	Power	12Vdc Li PO4 (2 weeks between charging)
	IP Rating	IP Rating IP66
Reaction Monitoring Sensors	Datum Model PH-T- ##	
	Range (degrees)	+/- 15 degrees
	Read frequency	2Hz
	Resolution	0.009% FS
	Accuracy	+/- 0.057% FS
	Communications	In-built wireless transmitter
	Power	12Vdc Li PO4 (2 weeks between charging)
	IP Rating	IP66



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