

Motor Test Console



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Our motor test consoles are designed for off-load testing of 3 phase, single phase and DC motors prior to re-commissioning and returning to service. The test console allows voltage to be stepped up to rated voltage incrementally, providing means of soft start and ensuring the motor performs satisfactorily at a reduced voltage before running at full rated voltage. A combined 0-5KV AC flash tester and 500VDC mega ohm meter enables verification of the motor's windings and insulation before subjecting it to an off-load test.



Motor Test Console (TC100-400)

At the heart of a rotary test console is a large multi-tapped transformer, this is a robust technology that gives many years of reliable service.

A motor is tested by first connecting it to the appropriately sized outlet of the console. The user then starts the test and brings the motor up to rated voltage gradually. Test variables such as voltage and current are then observed.

Up to 6 stepped voltage taps are available and can be specified at the time of ordering. E.g. 50V, 110V, 240V, 400V, 480V, 690V.

Our traditional console is a robust solution which has been used extensively within the industry for many years. Control of this is managed via physical switches.

- Manual tap change cam switches.
- Full load current can be determined using the simulated locked rotor method.
- 3 x ammeters (multiple scales), one for each phase.
- 1 x single switched voltmeter.
- Series of protected sockets to match your test motor: 16A, 32A, 65A, (see table).
- Built in HAL101 flash tester.
- Single phase / DC add on for testing of AC, DC shunt, series & compound machines.
- 3 x phase indicators.



High Voltage Flash Tester

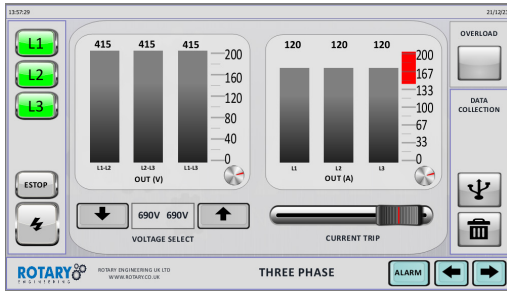
The test console has an integrated 5 kV flash tester / 500 Vdc high voltage tester for HiPot and Insulation Resistance tests. Features include:

- Electronic storage of test results with output to printer option.
- Visual and audible alarms.
- EN50191, IEC/EN 60950, IEC/EN 61010, BS EN 60335-1, BS EN 60598 and BS EN 60745 compliant.
- Provides bar-code read facility for control of inventory.
- Meets requirements for traceability of equipment and results.
- Fast automatic production testing using sequence capability.
- Single button operation with simple PASS/FAIL indication.
- Multiple language capability.
- Electrically isolated outputs provide protection for the user and safe environment.



Digital Motor Test Console (TC100-400)

Our digital motor test console merges the robust and proven technology of our traditional console with modern control. The result being a highly accurate, intuitive to use piece of test equipment which through a digital control system can provide an additional layer of protection and the capability to export test data.



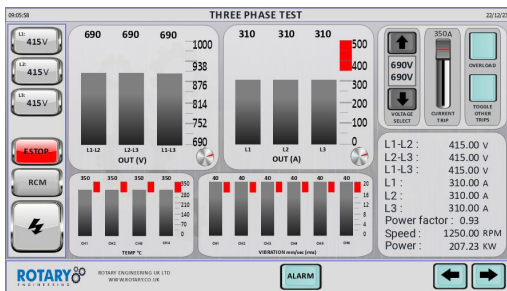
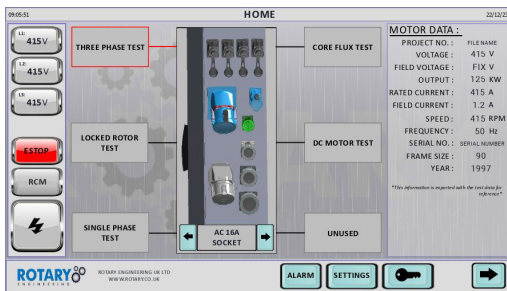
- Allows for collection of running data and export via CSV and PDF report.
- Control system provides an additional layer of safety.
- Control via intuitive HMI allows for ease of operation.
- Accurate digital metering.
- Easy integration with test cell.
- Adjustable current trip.



Motor Test Panel (MTP400-1000)

For testing large motors up to 1000HP, we can offer our motor test panel. This is of modular construction and allows for higher power and additional capabilities such as automated test sequencing, onboard vibration, temperature, and speed monitoring as well as a DC drive capable of testing high power DC machines (up to 250A output). The test console is operated remotely from a control enclosure through a 21" HMI to allow the operator to be situated at a safe distance.

- Built in measurement of physical running parameters.
 - 6 x vibration channels (mm/s rms).
 - 4 x temperature channels (°C/ °F).
 - Speed via laser tacho (RPM).
- Locked rotor testing in any phase orientation. An automated test sequence can be used alongside a peak hold function to easily determine phase balance and FLA.
- Can be used as an excitation supply for core loop flux testing via single pole sockets.
- Single phase testing via connecting between two phases.
- High power DC motor testing 250A 800VDC armature and 32A 800VDC field.
- Adjustable software interlocks/trips for overcurrent, over speed, over temp and excessive vibration.
- Outlets monitored by residual current monitoring device for safety of installation and personnel (earth leakage protection).
- 10 taps for gradual run-up (50V, 75V, 110V, 170V, 240V, 350V, 400V, 480V, 550V, 690V) can be specified at the time of ordering.
- Series of protected sockets to match your test motor: 16A, 32A, 63A, 750A (see table).
- Field undercurrent/field loss protection of DC supply.
- Overspeed protection of DC motors.
- Easily linked to your test cells safety system, door contacts, Estop buttons, key interlocks etc.
- Output to CSV and PDF test report.
- User management system with two levels of authorisation.
- Control station can be mounted remotely on a wall and is supplied with a 10m cable.



Technical Data

MOTOR TEST CONSOLE	TC100	TC150	TC250	TC320	TC400	MTP400	MTP650	MTP1000
Standard units	75 kW 100 HP	100 kW 150 HP	180 kW 250 HP	240 kW 320 HP	300 kW 400 HP	300 kW 400 HP	465 kW 650 HP	700 kW 940 HP
Current	83A	104A	153A	194A	243A	320A	500A	750A
Standard output voltages AC	50V, 110V, 240V, 415V, 480V, 690V These may be changed to suit your requirements (local supply voltage).					50V, 75V, 110V, 170V, 240V, 350V, 400V, 480V, 550V, 690V.		
Standard output voltages DC	Options available for 0-500VDC, 0-60A. Please enquire with your requirements.					Continuously variable 0-800VDC 250A & 0-800VDC 32A supplies		
Standard electrical supply	415V 3 phase, 50/60Hz Other supply voltages considered.							
Motor connections (amps). Sockets fitted and corresponding plugs supplied								
16 AC	✓	✓	✓	✓	✓	✓	✓	✓
32 AC	✓	✓	✓	✓	✓	✓	✓	✓
63 AC	✓	✓	✓	✓	✓	✓	✓	✓
125 AC	✓	✓	✓	✓	✓	✓	✓	✓
200 AC				✓				
250 AC					✓	✓	✓	✓
320 AC						✓		
500 AC							✓	
750 AC								✓
32A DC						✓	✓	✓
250A DC						✓	✓	✓
Transformer (KVA)	60	75	110	140	175	175	280	420
Metering								
Ammeters	L1,L2,L3, range switches x5, x10, x20, x30					L1, L2, L3. Digital metering with exact decimal value		
Voltmeters	With range switch for 0-150V, 300V and 600V and selection switch for L1 to L2, L2 to L3 or L3 to L1, line to line voltages.					All voltages displayed simultaneously. Exact decimal value displayed.		
Power factor						0-1		
Power (KW)						0-400	0-600	0-900KW
Vibration (mm/sec rms)						0-50 (other available) 6 channels		
Rotational velocity (RPM)						0-7500		
Temperature (°C/ °F)						PT100 type 4 channels		
Options for TC range of test consoles								
Touch screen control								
Operator interface via intuitive 21" HMI								
Data storage and data output via USB								
Adjustable current trip for a higher degree of protection								
Single phase AC & DC								
Single phase AC	Continuously variable 0-240V 30A/60A supply							
Single supply DC	Continuously variable 0-240V 30A/60A supply. Suitable for testing compound and series wound DC motors.							
Dual supply DC	Continuously variable supplies 1. 0-240V 30/60A 2. 0-240 6A. Suitable for testing compound, series and shunt wound DC motors.							
Other	We can accommodate other requirements e.g. 0-460V.							
HAL – HiPot / Flash & Insulation Resistance Tester								
AC HiPot / Flash Test								
Voltage Range	0.100 – 6.00KV (programmable)							
Voltage Resolution	10V/step (settable)							
Voltage Accuracy	1% of reading							
Maximum Output Current	10mA @ 6KV							
Display Current Range	0-01 – 10.0mA							
Current Accuracy	1 % of reading							
Display Current Resolution	0.01mA							
Output Ripple	<5% @6KV							

DC HiPot / Flash Test	
Voltage Range	0.100 – 6.000kV (programmable)
Voltage Resolution	10V/Step (Settable)
Voltage Accuracy	1% of reading
Maximum Output Current	10mA @ 6kV
Display Current Range	0.01 – 10.00mA
Current Accuracy	1% of reading
Display Current Resolution	0.01mA
Output Ripple	<5% @ 6kV
Insulation Resistance	
DC Output Voltage	250, 500 or 1000V selectable or fully adjustable from 10-1000V
Resistance Ranges	0.1 100.0MOhm / 0.1 – 1GOhm
Measurement	0.1-700MOhm, 5% of reading @ 700M
Accuracy	1GOhm, 10% of reading
ARC Detection	
Detect Current	10 Levels
External Connections	
Printer	RS-232
PC	RS-232



VTS Analyser

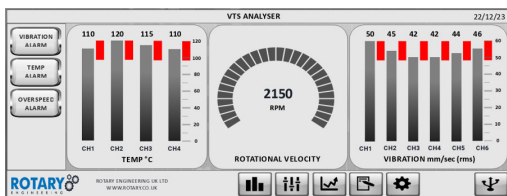
Housed in a convenient and portable carrier, the VTS analyser unit gives you the tools required to assess a motor's physical condition during testing.

- 6 vibration channels (mm/s rms).
- 4 temperature channels (°C/ °F). thermocouple/RTD.
- Speed via laser tachometer (RPM).
- HMI to manage and view data.
- Export of PDF reports or data via .CSV file.
- Option to integrate flash tester.
- Ability to be integrated into test consoles safety circuit. This allows a test console to trip and remove power automatically when an over speed, vibration or temperature condition arises.

An option for advanced analysis is offered which allows the user to perform further diagnostics of the test motor and isolate the cause of a potential problem. i.e. drive end bearing worn / fan defect. The different software allows various modes of analysis, such as:

- Fast Fourier Transform (FFT)
- Phase
- Orbits
- Bode

All required equipment such as laptop, software and transducers are supplied.



Bespoke Solution

As a specialist engineering company, we are open to custom projects. Ranging from a slight deviation from our advertised solutions to completely bespoke pieces of equipment, we can draw on decades of experience to produce a test console to match your exact requirements.



Rotary Engineering works in partnership with clients worldwide, manufacturing a range of equipment and offering everything from a one off piece of equipment to an entire workshop.

Our experienced team are happy to provide specialist advice, respond to tenders and support our contacts around the world.

Rotary's origins can be traced back to 1896 when W.E Burnand first made industrial equipment from our workshop here in Sheffield. Today the business has evolved to become Rotary Engineering UK Ltd, proudly established as an innovative specialist UK manufacturer supplying the motor rewind and coil manufactures in addition to the design, manufacture and repair of electromagnets.



Designed and manufactured in the UK



Specialist advice and support available



Option to configure specifications to meet individual requirements



Easy to operate, cost effective equipment



Worldwide service and support