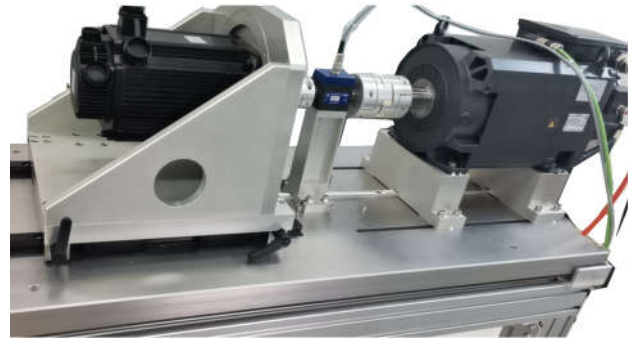


# 4Q-SERVO MOTOR TEST SYSTEM (4Q-SMTS)

Servo Motors Test System is a turnkey stand-alone test bench to measure all required performance tests in the servo motor field.

The performance of servo is not limited to the motor capabilities thus the system consisting of servo motor, the inverter and the controller must be test together to measure the system performance and to predict the motor performance with other inverters.

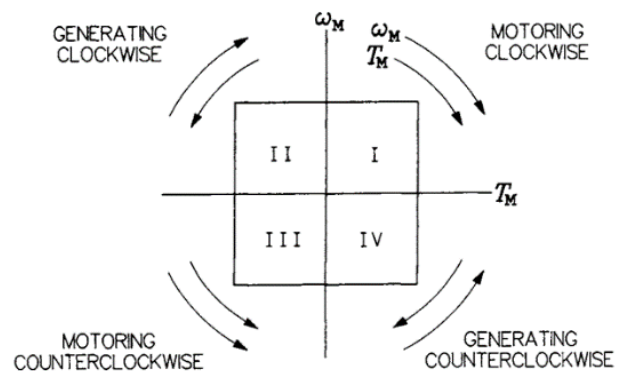


4Q-SMTS Test Stand

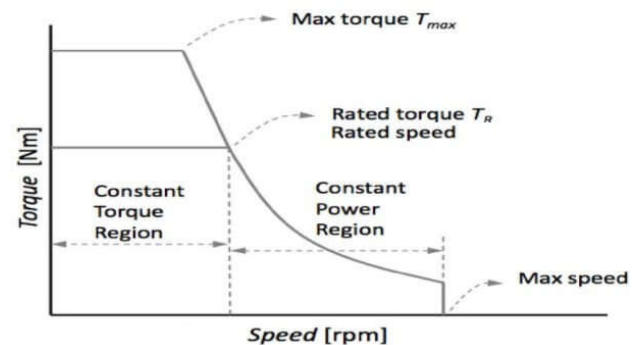
The system can be found in design / performance validation lab and in production floor as EOL performance test bench.

Using 4Q-SMTS allows the following measurements and displays

- ✚ Load Test (speed mode & Torque mode)
- ✚ Temperature Rise test (speed mode & Torque mode)
- ✚ Stall Torque & Peak Torque
- ✚ Friction measurement
- ✚ Torque Ripple at low rpm level. (10-30rpm)
- ✚ Torque Ripple at high rpm level (1000-8000rpm)
- ✚ Transient analysis of speed and torque
- ✚  $K_t$  – Torque Constant
- ✚  $K_e$  – Back EMF Constant
- ✚ Inertia Simulation
- ✚ Stiffness Calculation
- ✚ Input measurement of driver and motor
- ✚ Motor and Driver efficiency Electric & Electromechanical time constants measurements.
- ✚ And others...



4Q operation



Performance curve of Servo Motor + Inverter

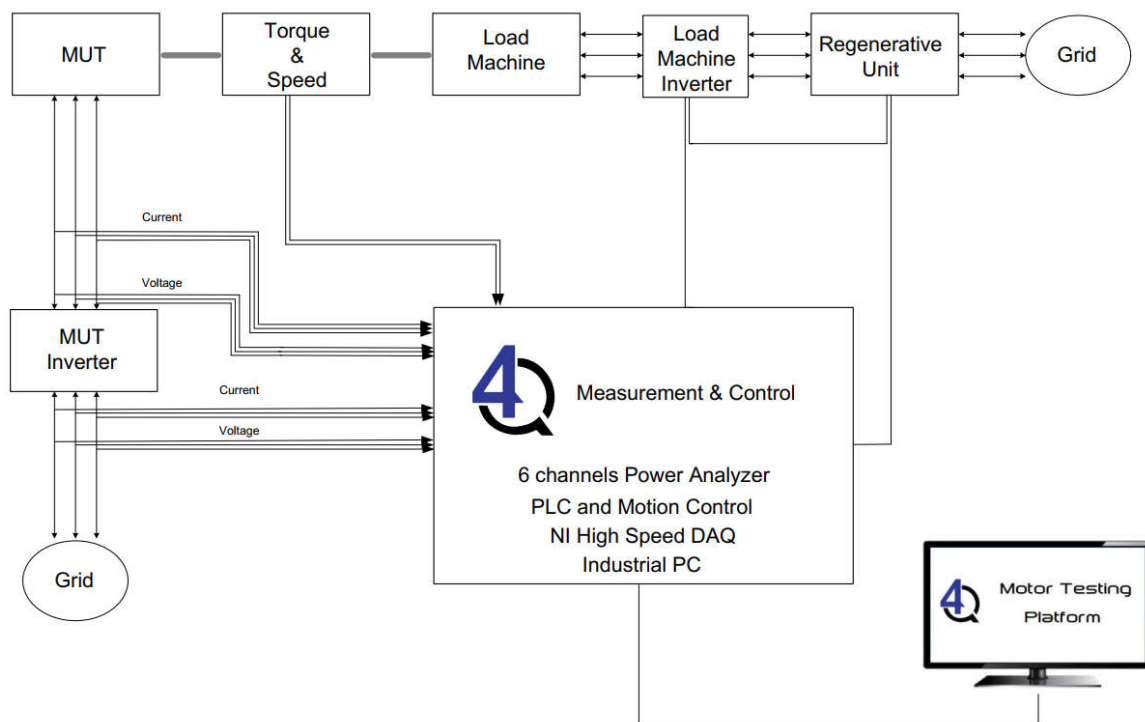
4Q-SMTS is using low inertia AC asynchronous servo motor as the load unit. The system has very fast respond and can change from generating to motoring dynamically in milliseconds.

The system is also designed to have low vibration level and give easy tools for the alignment of the MUT in the test bench. All measurement items such as torque and speed can be easily calibrated using the system software interface along with the electrical measurement of Voltage and Current that can be calibrated also.

The system is usually supplied with WT1800 with 6 elements allow to measure the motor performance and motor and driver performance. From these two measurements the driver efficiency is extracted.

#### 4Q-SMTS PRODUCT RANGE:

Model	Rated Power [kW]	Rated Power [Nm]	Maximum Speed [rpm]
4Q-010	1.5	10	12000
4Q-020	5	20	15000
4Q-050	7.5	50	15000
4Q-100	11	100	15000
4Q-200	22	200	15000
4Q-500	60	500	10000



System Structure