

TSC SERIES

TORQUE AND SPEED CONDITIONNERS

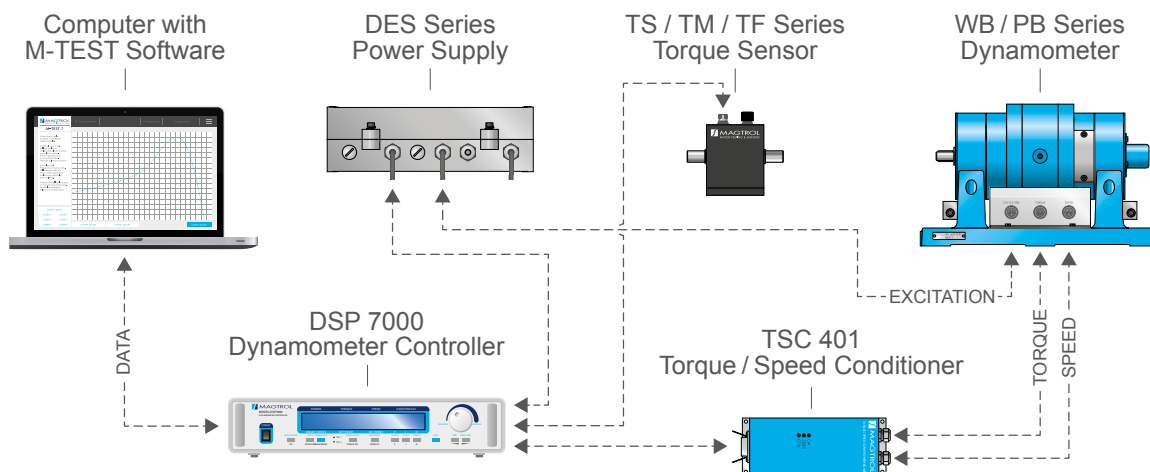
DESCRIPTION

The TSC Series is the Torque & Speed Conditioner used to connect Magtrol Eddy-Current (WB Series) or Powder (PB Series) Dynamometers to the DSP 7000 Controller. Powered by the DSP 7000, and based on a precision instrumentation amplifier, the unit amplifies and filters the torque signal. It also provides power supply and connections for the speed pickup sensor which is located in the dynamometer.



Fig. 1: TSC Series Torque/Speed conditioner with its dedicated cable for connection

SYSTEM CONFIGURATION



SPECIFICATIONS

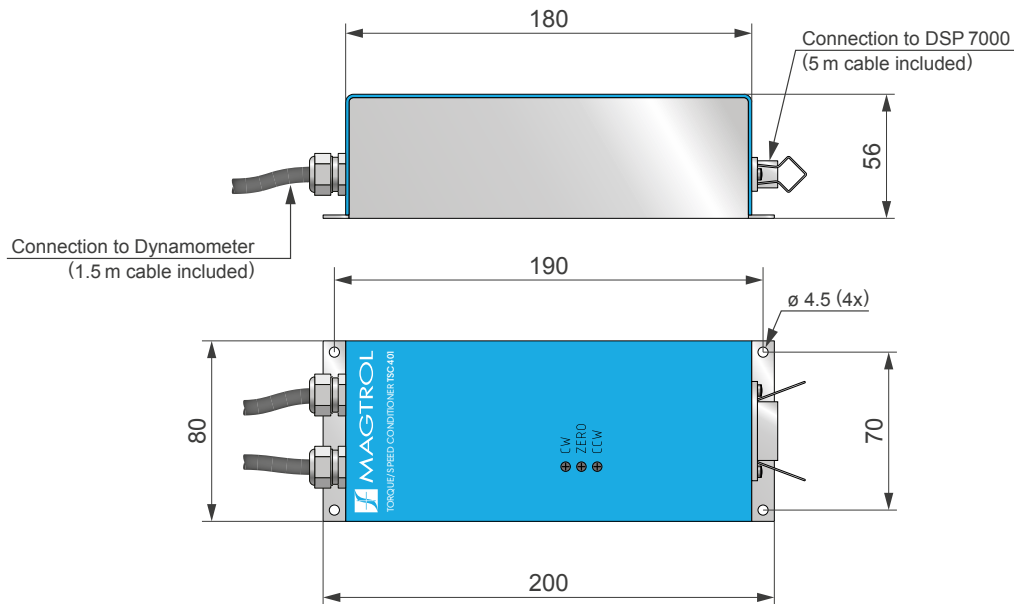
RATINGS	
Offset	±0.2% (Full Scale Defection)
Symmetry	±0.1% (Full Scale Defection)
Bandwidth (3 dB single pole)	20 Hz
Offset Drift	< 100 ppm/°C
Sensitivity Drift	< 50 ppm/°C
ELECTRICAL CHARACTERISTICS	
Supply Voltage	±20 - ±30 V
Supply Current ^{a)}	40 mA nominal / 45 mA max.
Torque O/P Voltage ^{b)}	5VDC ±0.2%
Max. O/P Current ^{c)}	5 mA
Min. O/P Load	1 kΩ

a) With a 350 Ω load cell bridge and no O/P load

c) Without distortion

b) Rated dynamometer torque

DIMENSIONS



RELATED PRODUCT

WB & PB SERIES - DYNAMOMETER



Fig. 2: 1PB115 | Powder Dynamometer

The WB Series (eddy current) and PB Series (magnetic powder) dynamometers are particularly suitable for demanding applications requiring low (PB) to high (WB up to 65,000 rpm) speeds. The PB brakes develop their nominal torque already at standstill, while the WB brakes develop a braking torque proportional to the speed and their maximum torque is reached at nominal speed. The brake is cooled by water circulating in the stator. As a result, these dynamometers are able to dissipate high permanent loads (up to 140 kW). The WB and PB dynamometers incorporate a torque measuring system which has an accuracy of ±0.3% to ±0.5% at full scale.

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DSP 7000 - HIGH-SPEED PROGRAMMABLE DYNAMOMETER CONTROLLERS

Magtrol's Model DSP 7000 High Speed Programmable Dynamometer Controller employs state-of-the-art Digital Signal Processing Technology to provide superior motor testing capabilities. Designed for use with any Magtrol Hysteresis, Eddy-Current or Powder Dynamometer, Magtrol In-Line Torque Transducer or auxiliary instrumentation, the DSP 7000 can provide complete PC control via the USB or optional IEEE-488 or RS-232 interface. With up to 500 readings per second, the DSP 7000 is ideally suited for both the test lab and the production line.



Fig. 3: DSP 7001 | Programmable Dynamometer Controllers

ORDERING INFORMATION

It is important to **specify which dynamometer will be used** with the TSC Series Torque/Speed Conditioner, so that it can be delivered with the appropriate cables. Because The TSC Series also requires calibration with its associated dynamometer, it is suggested that the dynamometer and Torque/Speed Conditioner be ordered together in order for Magtrol to perform this calibration before leaving the factory.

If purchased separately, the part number and serial number of the customer's dynamometer must be specified so that Magtrol can ship a pre-configured TSC Series. The customer must then perform the (Zero, CW & CCW) calibration on site, as outlined in the TSC Series User's Manual.

DYNAMOMETER	ORDERING NUMBER
WB/PB 2.7, 43	234-401-000-11x
WB/PB 65, 115, 15	234-401-000-12x