

NOISE - HARDENED TORQUEMETERS

For use in severe electromagnetic interference (EMI)

- ✓ **Improves Noise Immunity by A Factor of 10***
- ✓ **Now Standard on Virtually All MCRT® Torquemeters**
- ✓ **Retains Original Torquemeter Features and Specifications**

** When compared to a similar torque sensor without noise hardening*

Modern adjustable speed drives (ASD's) rapidly switch insulated gate bipolar transistors (IGBT's) under microprocessor control. Most switch the motor currents when they are high, not at axis crossings when the current is zero.

As a result, these drives generate severe EMI which can cause large measurement errors with ordinary torquemeters. Noise Hardening incorporates new technology that *improves noise immunity by a factor of ten or more, compared to that of the same model without it. The improvement virtually eliminates EMI as a factor*

and is standard on all Himmelstein torquemeters.

When operated in severe EMI, even Government mandated tests aren't a reliable guide to torquemeter noise immunity. For example, both standard and noise hardened MCRT® torquemeters pass EU 89/336/EEC electromagnetic and electrostatic discharge immunity tests and are **CE** marked. Nonetheless, *when subjected to high ac magnetic fields, only the noise hardened units are error free.* See Bulletin 701 for additional details. The table below summarizes availability of noise hardening for production torquemeters.

MCRT® Model	Overload Capacity	Output Signal	Power Source	Noise Hardening (Option G)
3120TA thru 31200T	500%	4 mV/V	3 kHz ±10% Sine Wave	Standard
39001X thru 39091X	400%	4 to 20 mA	10 to 28 Volts DC	Standard
27820T, 27830T & 27930T	200%	4 mV/V	3 kHz ±10% Sine Wave	Standard
27835T, 27840T & 27920T	1,000%	4 mV/V	3 kHz ±10% Sine Wave	Standard
27820V, 27830V & 27930V	200%	±5V	10.5 to 24 Volts DC	Standard
27835V, 27840V & 27920V	1,000%	±5V	10.5 to 24 Volts DC	Standard
28000T thru 28091T	200%	1.5 mV/V	3 kHz ±10% Sine Wave	Standard, except unavailable on 28000T
28550T & 28551T	200%	1.5 mV/V	3 kHz ±10% Sine Wave	Standard
29000T thru 29091T	400%	1.5 mV/V	3 kHz ±10% Sine Wave	Standard
48000V thru 48091V	200%	±5V	10.5 to 24 Volts DC	Standard, except unavailable on 48000V
48201V thru 48204V	200%	±5V, ±10V, RS232C	10 to 14 Volts DC	Standard
48701V thru 48791V	200%	±5V, ±10V, RS232C	11 to 24 Volts DC	Standard
48001P thru 48091P	200%	±5V, ±10V, RS232C	11 to 24 Volts DC	Standard
49000V thru 49091V	400%	±5V	10.5 to 24 Volts DC	Standard
49701V thru 49791V	400%	±5V, ±10V, RS232C	11 to 24 Volts DC	Standard
49001P thru 49091P	400%	±5V, ±10V, RS232C	11 to 24 Volts DC	Standard
59001V thru 59091V	1,000%	±5V	10.5 to 24 Volts DC	Standard
59701V thru 59791V	1,000%	±5V, ±10V, RS232C	11 to 24 Volts DC	Standard
79001V thru 79091V	1,000%	±5V	10.5 to 24 Volts DC	Standard
79701V thru 79791V	1,000%	±5V, ±10V, RS232C	11 to 24 Volts DC	Standard
86001V thru 86010V	200%	±5V, ±10V, RS232C	10 to 26 Volts DC	Standard
87001V thru 87010V	400%	±5V, ±10V, RS232C	10 to 26 Volts DC	Standard
88701V thru 87010V	400%	±5V, ±10V, RS232C	10 to 26 Volts DC	Standard

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