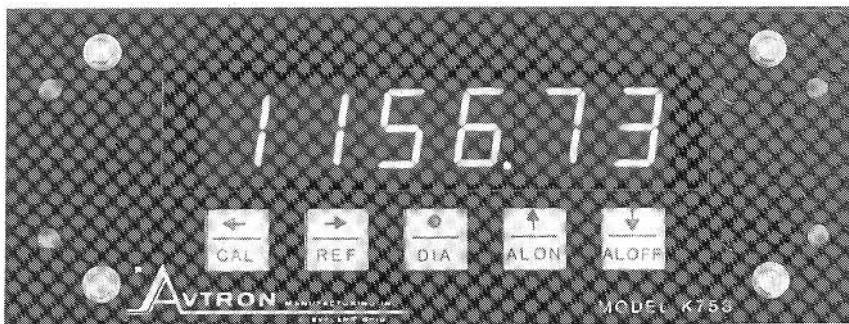


MILL DUTY SPEED METER



- Extra large digital readout
- Automatic calibration
- Target/Alarm outputs for out-of-limit conditions
- Eliminates transducer bearings and couplings
- Serial link output for computer interfacing

DESCRIPTION

The Avtron Model K753 is a microprocessor-based digital speed indicator. It is designed to take a wide range of frequency inputs, calibrate them into engineering units, and display the value on a six-digit readout.

Selectable limits can be used to help monitor and control process variables that are subject to fluctuation. If the input varies beyond a previously established range, a contact closure can notify the operator to take action before serious problems result.

APPLICATION

The Avtron Model K753 is designed for measurement of a single process variable in engineering units like feet per minute (FPM) and meters per minute (MPM). The K753 will accept a frequency input from any input device like an Avtron Rotary Pulse Generator.

In applications where tachometer mounting is a problem, the Avtron Model M185 UNIPULSER™ can be used. The M185 is a non-contact, non-photoelectric, one pulse per revolution tachometer that eliminates bearings and couplings.

ACCURACY

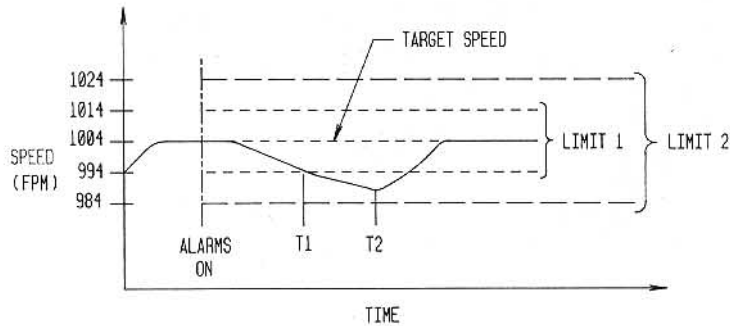
The K753 accepts frequencies from one hertz to 20 kilohertz with an accuracy of 0.01% in a one second update time. Unlike older style counters, the K753 is not susceptible to the traditional plus or minus 1 pulse error that can occur. This is possible because the K753 not only counts pulses over a precise time interval, but also measures the time from the start of the count time to the first pulse, and from the end of the count time to the next pulse, making the overall calculation accurate to 0.01%.

COMMUNICATION

To communicate with external computers and data acquisition systems, the K753 is equipped with RS-422 Serial Link capabilities. This allows for direct communication with a computer, or, through the use of an Avtron Remote Interface Module (RIM), with an Avtron printer for hard copy reports. The printer can generate printouts either automatically or upon request.

COMPATIBILITY

The K753 is similar in design to the Model K653 with the exception of the limits and contact outputs which make the K753 approximately 1" longer.



OPERATION

The above diagram represents a typical K753 application and proper use of its capabilities. Limit 1 has been set at ± 10 FPM. Limit 2 has been set at ± 20 FPM and represents "out of specification" material.

When the process reached an optimum speed as determined by the operator, he depressed the "ALARMS ON" key located on the front panel of the K753. The K753 automatically established 1004 FPM as the target speed and began to check each update against the target and its limits.

When the speed fell below Limit 1 at T_1 , the contact closed and notified the operator that a problem had occurred. The operator responded by adjusting the speed at T_2 and returned it to within limits. This avoided the production of out of specification/unsaleable product.

The K753 can also be configured to have pre-determined target values loaded into its memory for processes where optimized conditions have already been established.

SPECIFICATIONS

OPERATING POWER	115 VAC, 50/60 Hz, 0.25 Amp Typical, 0.5 Amp Max.	DIMENSIONS:	8.75" W \times 3.25" H \times 9.05" D.
OPERATING TEMPERATURE	32-140°F (0-60°C)	SERIAL LINK	RS422 electrical configuration with custom Avtron protocol.
OPERATING HUMIDITY	5-95% rh		Baud rate - Keyboard selectable, 110, 150, 300, 600, 1200, 2400, 4800, 9600, or 19,200 Baud.
SIGNAL INPUTS	The tach signal input is isolated from ground and transformer coupled, and is designed to work with both reluctance and zero-speed tach signals. Frequencies from 0.125 Hz to 20 KHz accepted.		Parity - Keyboard selectable, even, odd, none, mark, or space.
OPERATOR DISPLAY	6-digit, 0.8 inch memory display, with seven-segment characters.		Ability to transmit data down link at selectable time intervals, via hardware inputs, in response to limit activity, or when requested via serial link.
CALIBRATION	(1) Compute and enter a calibration number, or (2) Enter machine data (roll diameter, tach PPR, gear ratio), or (3) Simply enter the current speed as measured by separate instrument. All calibration data is entered through a 5-key keyboard with range of 0.00001 to 999999. If power is lost, data is retained in memory.	CONTROL INPUTS	Transfer - Sends data down serial link upon request. Transfer at intervals - Sends data down serial link at selected intervals. Hold - Display frozen, internal calculations are still performed. Relay reset - Resets tripped relays. Alarms On/Off - Turns alarms on and off via hardware input.
COUNT TIME	Selection of 0.25, 0.5, 1.0, 2.0, 4.0, or 8.0 seconds	CONTROL OUTPUTS	Two (2) Form C Relay contacts rated for 1.2 Amps at 115 VAC. Programmable for either momentary or latched operation.
LOCK FEATURE	Keyboard functions can be locked out by connecting a jumper on rear terminal block.	LIMITS	Four (4) selectable limit values configurable for either Manual or Automatic operation.
INSTALLATION	All connections are on two rows of 14 terminals on two blocks with 3/8 inch centers. All units are heat tested at 140°F for 100 hours to ensure reliable operation. Potentially weak components are therefore eliminated prior to shipment.	ALARMS	Single key to turn alarms ON or OFF. In Automatic mode, Alarms ON establishes target speed.
TACH SUPPLY	A +12 Volt, 250mA tach supply is available on rear terminal block.	REFERENCE	Single key to display reference speed on readout.

Features subject to change without notice.

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