



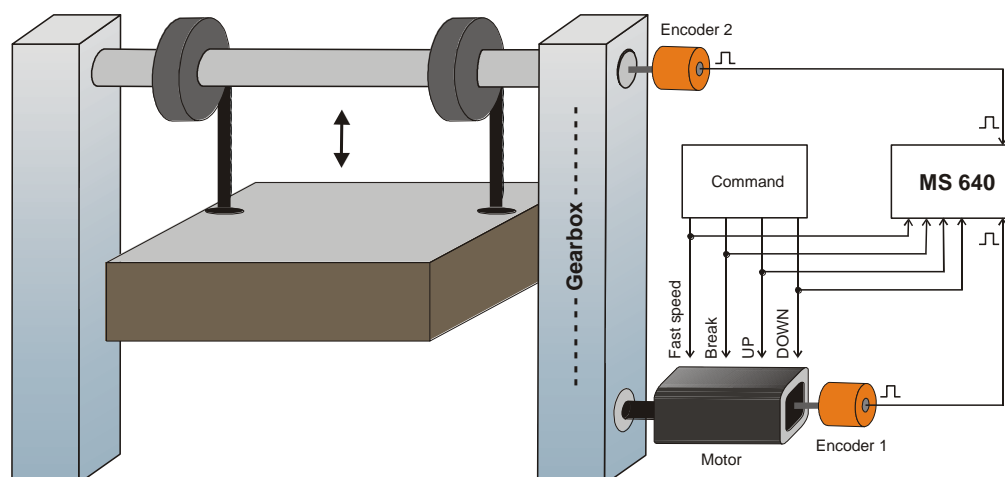
MS640

Programmable motion monitor unit for secure and redundant control of motion sequences

Product Features:

- Suitable for monitoring of overspeed, underspeed, standstill, direction of rotation, slip, shaft or gearbox fracture, impermissible motion etc.
- Four digital control inputs + six logical inputs for plausibility considerations and control of logical conditions
- Two programmable A, /A, B, /B quadrature encoder inputs for counting frequencies up to 500 kHz
- Four safety relays with forced-guided contacts and four high-speed transistor outputs, all with feedback and control of the actual output state
- Serial interface for remote access to all functions and data by superior control units
- High safety level on the machine site by redundant and logical control algorithms
- High functional safety of the monitor itself by internal test routines and diagnostics

Application Example: Hoisting Unit



Technical Specifications:		
Power supply:	Input voltage (AC): - Power consumption: Input voltage (DC): - Protection circuit: - Ripple: - Consumption: Connections:	24 VAC +/- 10 % 15 VA 17 ... 40 VDC reverse polarity protection ≤ 10 % (at 24 V) approx. 100 mA (at 24 V and unloaded encoder supply) screw terminals, 1.5 mm ² / AWG 16
Encoder supply:	Number of aux. voltages: Output voltage 1: Output current 1: Output voltage 2: Output current 2: Connections:	2 (each double-performed) 24 VDC max. 120 mA each 5.2 VDC max. 150 mA each screw terminal, 1.5 mm ² / AWG 16
Incremental inputs:	Number of inputs: Signal levels: Channels: Frequency: Internal resistance: Connections:	2 universal encoder inputs HTL: LOW 0 ... 2.5 V, HIGH 10 ... 30 V TTL: LOW 0 ... 0.8 V, HIGH 3 ... 5 V RS422: Differential voltage > 1 V symmetrical: A, /A, B, /B or asymmetrical: A, B RS422 / TTL symmetrical: 500 kHz HTL or TTL asymmetrical: 200 kHz Ri ≈ 8.5 kOhm screw terminals, 1.5 mm ² / AWG 16
Control inputs:	Number of inputs: Signal level: Internal resistance: Min. pulse time: Connections:	4 control inputs: HTL (PNP / NPN / Namur) 6 logical inputs: HTL (only PNP) HTL: LOW 0 ... 2, V, HIGH 10 ... 30 V Ri ≈ 3.3 kOhm 50 μs (only control inputs) screw terminals, 1.5 mm ² / AWG 16
Transistor outputs:	Number of outputs: Protection circuit: Characteristic: Output current: Reaction time: Connections:	4 fast transistor outputs short circuit proof PNP, 5 ... 30 V 350 mA each < 1 ms screw terminal, 1.5 mm ² / AWG 16
Relay outputs:	Number of outputs: Switching capacity: Reaction time: Connections:	4 force-guided and potential free changeover relays 250 VAC / 1 A / 250 VA or 100 VDC / 1 A / 100 W approx. 5 ... 10 ms screw terminals, 2.5 mm ² / AWG 14
Serial interface:	Format: Baud rate: Connections:	RS232 or RS485 (2-wire) 600, 1200, 2400, 4800, 9600, 19200, 38400 Baud (selectable) screw terminals, 1.5 mm ² / AWG 16
Display elements:	Display:	red LED, 6 digits, height: 15 mm / 0.591"
Housing:	Type: Material: Mounting: Dimensions (w x h x d): Cut out (w x h): Protection class: Weight:	Norly UL94-V-0 plastic panel 110 x 48 x 141 mm / 4.331 x 1.889 x 5.551 inch 89 x 91 mm / 3.504 x 3.583 inch front: IP 65 / rear: IP20 approx. 490 g
Ambient temperature:	Operation: Storage:	0 °C ... +45 °C / +32 ... +113 °F (not condensing) -25 °C ... +70 °C / -13 ... +158 °F (not condensing)
Failure rate:	MTBF in years	45 a (long-term usage at 60 °C / 140 °F)
Conformity & standards:	EMC 2004/108/EC: LV 2006/95/EC Guideline 2011/65/EU:	EN 61000-6-2, EN 61000-6-3, EN 61000-6-4 EN 61010-1 RoHS-conform