

EC-PWM-A1-MPC1-D PWM DRIVER

DESCRIPTION

Microprocessor-based PWM electronic driver for remote control of a single proportional solenoid valve.

OPERATION

The EC-PWM-A1-MPC1-D proportional valve driver receives a command signal from a potentiometer, PLC or other control systems, and supplies a solenoid with a PWM (Pulse Width Modulated) current proportional to the input signal. An auxiliary power supply (+5 V) is provided as a reference for the command signal. Adjustments of "Imin/Imax", "Ramp time" and "Dither" can be carried out directly from a key-pad integrated on the front panel.

Mounting option: female DIN 43650 socket on valve's side and sheathed exit cable to connect to power source and remote control devices.

FEATURES

- The current in the solenoid is independent from any change in the coil resistance or in the supply voltage.
- The inherent superimposed dither frequency helps to overcome friction and stiction effects in the controlled device.
- Power supply line is protected against reversed polarity and load dump.
- Input is protected against short circuits to GND and power supply.
- Output is protected against short circuits, over-current and over-temperature.
- The EC-PWM-A1-MPC1 is completely potted.
- Electro Magnetic Compatibility (EMC): EN 61000-6-2 (Immunity), EN 61000-6-3 (Emissions).



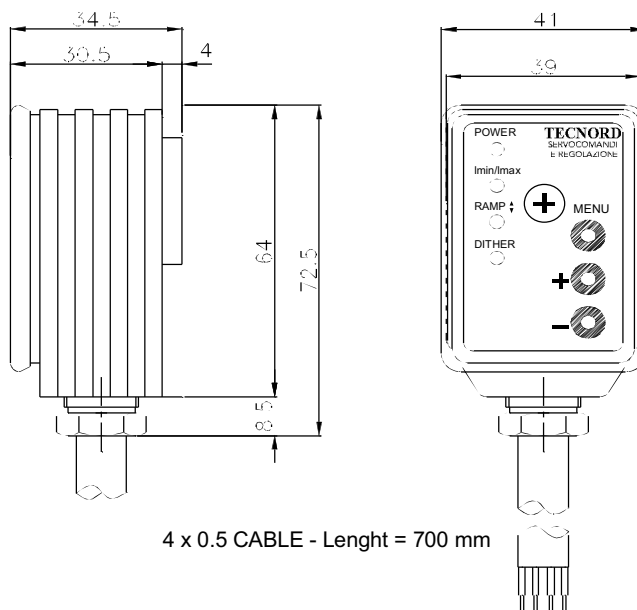
SPECIFICATIONS

Operating voltage:	8.5÷30 VDC
Max current consumption:	100 mA (no load applied)
Operating temperature:	-25°C / +85°C
Input resistance 0÷5 V voltage input:	560 KOhms
0÷10 V voltage input:	1 MOhm
0÷20mA current input:	250 Ohms
Degree of protection:	IP 67
Analog input signals available:	0÷5 V 0÷10 V 0÷20 mA
Typical ctrl pot resistance:	2÷47 kΩ
Current output range (PWM):	100÷3000 mA
PWM dither frequency:	55÷200 Hz (adjustable)
Ramp time:	0.05÷5 s (adjustable)
Max. current from auxiliary +5 V:	15 mA

APPLICATIONS

Primary applications are the control of proportional pressure reducing valves and proportional flow regulators to attain smooth acceleration/ deceleration and fine-metering control of electro-hydraulic functions.

DIMENSIONS



WARNING: the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.



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EC-PWM-A1-MPC1-D PWM DRIVER

CIRCUIT BOARD PINOUT - WIRING DIAGRAM

Connection Diagram for 0÷5 V Version

Power supply wiring colours

- Blue** (+) Positive from power source
Yellow/Green (-) Negative from (GND)

Remote potentiometer wiring colours

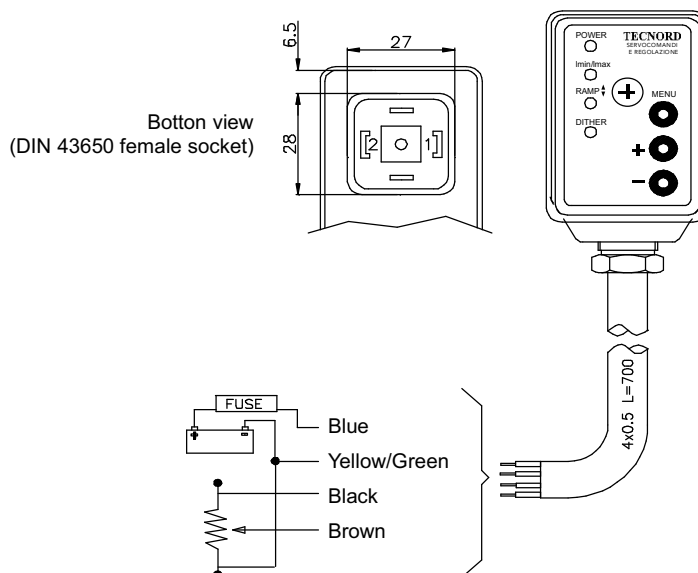
- Black** Command signal supply (+5 V)
Brown Command signal in

Proportional valve connector pins

- 1** Proportional coil output
2 Proportional coil current feedback line

Note

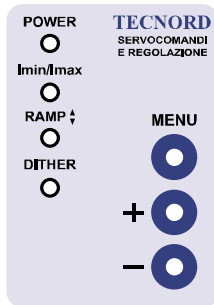
A 5A fuse must be inserted on the BLUE wire connecting the PWM driver to the power source.



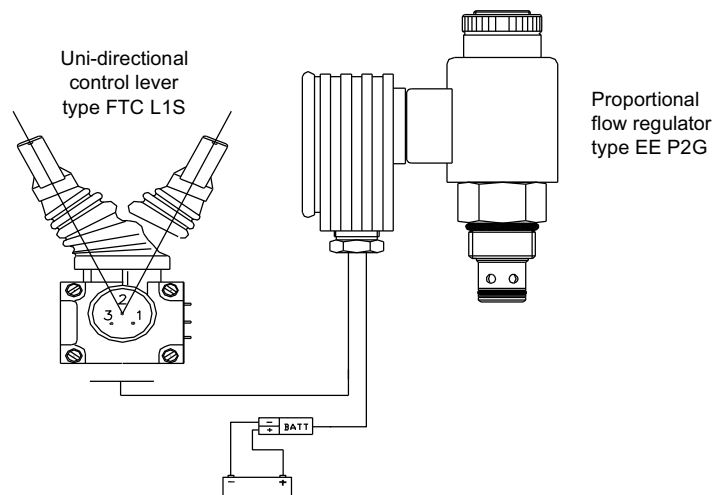
ADJUSTMENTS

The following adjustments can be made directly from the front key-pad by selecting the 3-pushpins in appropriate combinations:

- **Imin** (minimum output current)
- **Imax** (maximum output current)
- **Ramp-up time**
- **Ramp-down time**
- **Dither frequency**

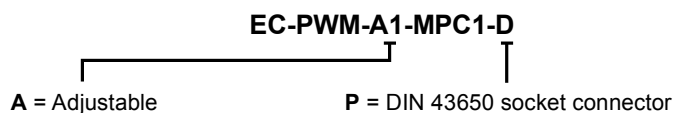


APPLICATION EXAMPLE



Remote operation of a proportional flow control valve from single axis/unidirectional control lever incorporating a rotary potentiometer.

ORDERING INFORMATION



Part numbers	Version
23.0409.046	0-5 V
23.0409.065	0-10 V
23.0409.077	0-20 mA

EC-PWM-A1-MPC1-E PWM DRIVER

DESCRIPTION

Microprocessor-based PWM electronic driver for remote control of a single proportional solenoid valve.

OPERATION

The EC-PWM-A1-MPC1-E proportional valve driver receives a command signal from a potentiometer, PLC or other control systems, and supplies a solenoid with a PWM (Pulse Width Modulated) current proportional to the input signal. An auxiliary power supply (+5 V) is provided as a reference for the command signal. Adjustments of "Imin/Imax", "Ramp time" and "Dither" can be carried out directly from a key-pad integrated on the front panel.

Mounting option: female DIN 43650 socket on valve's side and male DIN 43650 plug to connect to power source and remote control devices.

FEATURES

- The current in the solenoid is independent from any change in the coil resistance or in the supply voltage.
- The inherent superimposed dither frequency helps to overcome friction and stiction effects in the controlled device.
- Power supply line is protected against reversed polarity and load dump.
- Input is protected against short circuits to GND and power supply.
- Output is protected against short circuits, over-current and over-temperature.
- The EC-PWM-A1-MPC1 is completely potted.
- Electro Magnetic Compatibility (EMC): EN 61000-6-2 (Immunity), EN 61000-6-3 (Emissions).



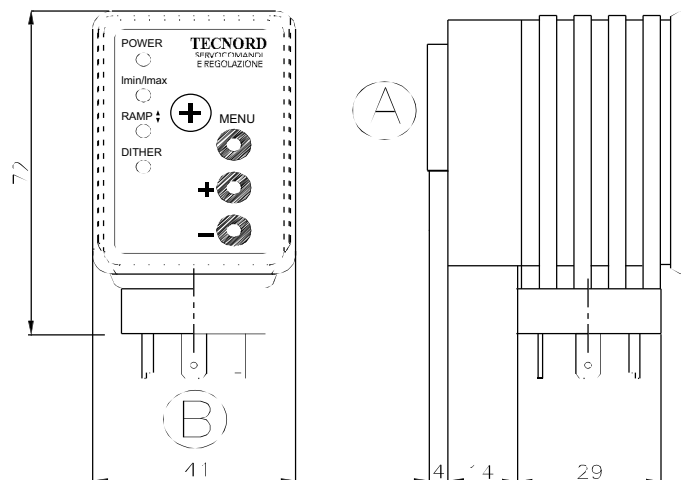
SPECIFICATIONS

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Max current consumption:	100 mA (no load applied)
Operating temperature:	-25°C / +85°C
Input resistance 0÷5 V voltage input:	560 KOhms
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Analog input signals available:	0÷5 V 0÷10 V 0÷20 mA
Typical ctrl pot resistance:	2÷47 kΩ
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Max. current from auxiliary +5 V:	15 mA

APPLICATIONS

Primary applications are the control of proportional pressure reducing valves and proportional flow regulators to attain smooth acceleration/ deceleration and fine-metering control of electro-hydraulic functions.

DIMENSIONS



A socket connector type DIN 43650 (to proportional valve)

B plug connector type DIN 43650
(from voltage supply and remote potentiometer)

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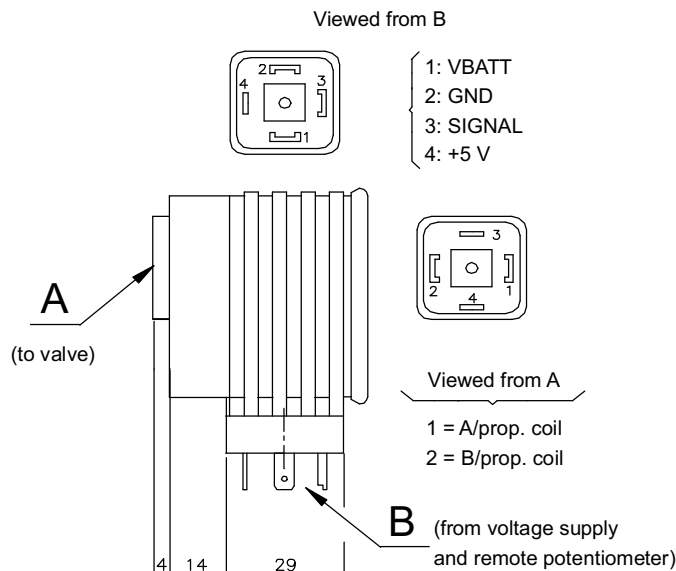
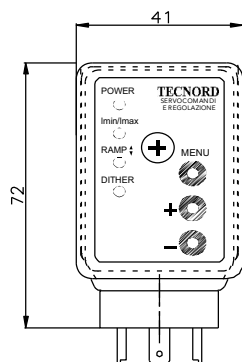


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EC-PWM-A1-MPC1-E PWM DRIVER

CIRCUIT BOARD PINOUT - WIRING DIAGRAM

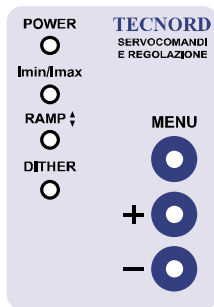
Connection Diagram for 0÷5 V Version



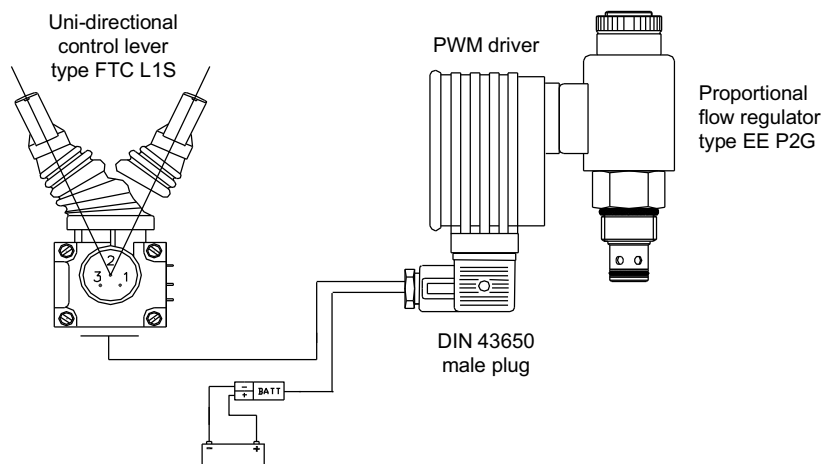
ADJUSTMENTS

The following adjustments can be made directly from the front key-pad by selecting the 3-pushpins in appropriate combinations:

- Imin (minimum output current)
- Imax (maximum output current)
- Ramp-up time
- Ramp-down time
- Dither frequency



APPLICATION EXAMPLE



Remote operation of a proportional flow control valve from single axis/unidirectional control lever incorporating a rotary potentiometer.

ORDERING INFORMATION

EC-PWM-A1-MPC1-E
A = Adjustable
E = DIN 43650 plug connector

Part numbers	Version
23.0409.089	0-5 V
23.0409.047	0-10 V
23.0409.137	0-20 mA