DigPot

DigPot is a position feedback control system for 12 V or 24 V actuators with feedback, power control and programmable electrical end stops. DigPot allows for accurate, advanced, synchronized and complex control of one or many motors in a system.

DigPot feedback control system is ideal for:

- very accurate positioning thanks to high resolution feedback signal
- distributed power control that reduces the number of wires needed for each drive motor
- individually programmable actuator configuration with DigPot config tool
- real time motor performance control
- cycle counter to keep track of maintenance schedule.
- can be used instead of end limit switches, without any feedback

The DigPot family consists of 3 different variants.

- GLA, PCB board without protection cover which is designed for RE25 with cover
- GLB is molded in PA and designed for RE25 (standard motor) without cover
- GLC is molded in PA and designed for RE35 (strong motor) without cover.

Features

Programmable end stops, individually calibrated at delivery
Programmable acceleration and deceleration ramps
Programmable input functions for easy relay replacement
Built in programmable current cut off limits
“ED-level” monitor that prevents overheating
Distributed power control

Digital inputs for control by e.g. switches
High resolution feedback by PWM-output
Serial communication trough a one-wire bus
Easy operated PC software, DigPot config tool for programming and setup

Solid state – No relays	
Operating temperature	-20°C to +65°C. Fully functional, but the performance is valid for +20°C
Storage temperature	-40°C to +85°
EMC conformity	EN 61000-6-2 EN 61000-6-3 EN 60601-1-2 ISO 7176-21
Flammability rating	UL94 V-0
Material	ROHS compliant

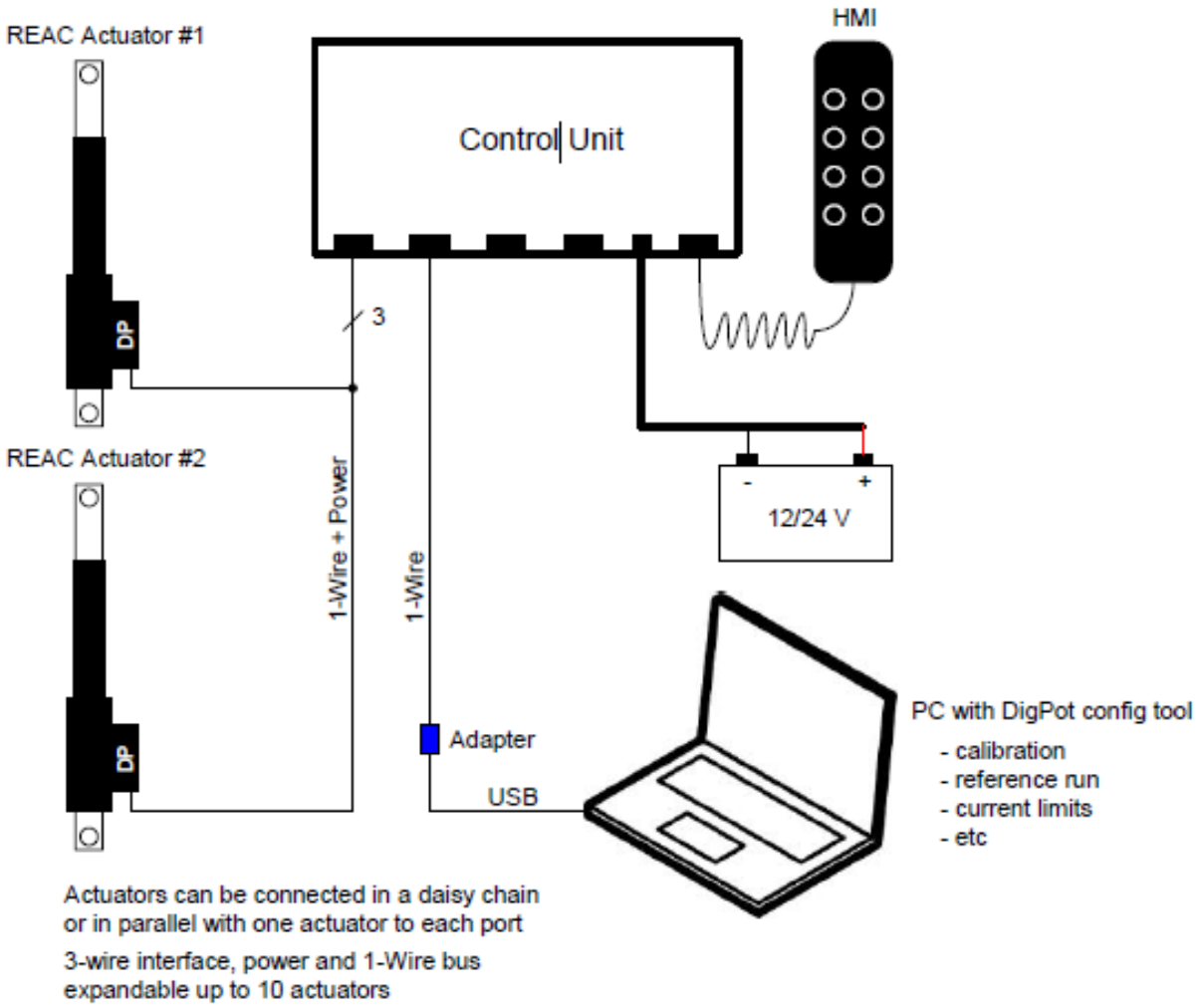
Application

The DigPot has integrated solid state H-bridge drivers for the actuator as well as contactless position feedback. Motor output is limited to approximately 16/32 A for max 100 mS – before programmable emergency stop occurs

The DigPot is operated either by UP and DOWN digital signals or through a 1-Wire bus communication protocol. The PWM output can e.g. be detected through a PLC or other control equipment and can be used as position feedback or as a digital error flag.

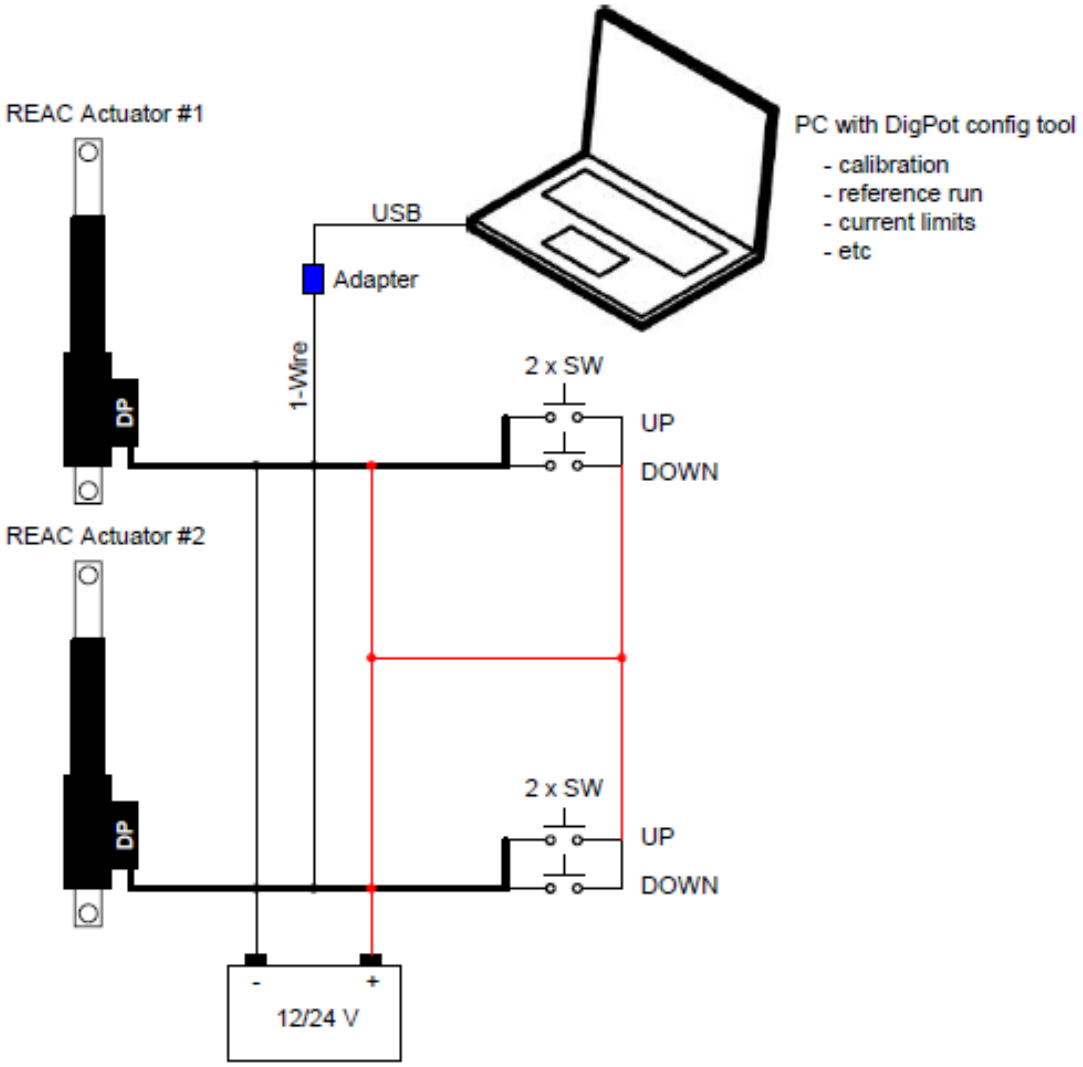
Typical application: Advanced system

DigPot controlled by a superior control system via the 1-Wire bus with real time position feedback.



Typical application: Basic system

DigPot controlled by switches via the digital inputs without real time position feedback. Programmable end stops can still be used, pre-configured at delivery or configured via DigPot config tool.



Detailed data

Data	Value	Comments
General		
Supply	8-30VDC	Referred to as Vs
Supply protection		Programmable max continuous and peak current limit • GLA/GLB 8A resp. 16A for 100mS • GLC 16A resp. 32A for 100mS
Supply reversal	-40V	GLA/GLB – serial diode protection GLC – parallel diode protection
Supply current	20mA when idle	
Stand-by current	500µA	
Max angle resolution	0,7º	Decreased when extended range is used
Max angle accuracy	± 3,5º	Decreased when extended range is used
Usable range (calibration)	0,5-128 revolutions 1-256 revolutions 2-521 revolutions	With full resolution and accuracy With 1,4º resolution and ±7º accuracy With 2,8º resolution and ±14º accuracy
Tracking speed	3300 rpm	Normal operation
Tracking speed at power down	750 rpm	Power down requires full stop within 1s after Vs dropped below 5V
PWM output		
Type	Open collector with 4,7 kΩ pull up to Vs	Internal serial resistor of 470 Ω provides short circuit proof output to either Vs or GND
Frequency	100 Hz ± 2,5%	
Duty cycle	5-95 %	3-98 % when out of range condition exist
Resolution	14 Bit	
Accuracy	< 0,1 %	Stroke less than 1000º will reduce overall accuracy due to sensor resolution
Digital inputs		
Type	Active high	Two digital inputs for e.g. control via switches
Input high	8-30V	
Input low	0-2V	
Position memory		
Flash memory life cycle	Typical 100 000 power cycles	
LED indication		
Flashing at ~1Hz	Calibration OK, Motor idle	
Flashing at ~5Hz	Calibration OK, motor running	
Flashing at ~0,5Hz (1 sec on, 1sec off)	Redo calibration	Calibration parameter error or self-diagnostics failed
Constant on	Run to min position	During min position calibration process
Constant on	Run to max position	During max position calibration process – over range is indicated by constant on

REAC AB
Forsbrogatan 4
662 34 Åmål, Sweden

REAC Poland Sp. z o.o
Ul. Sulejowska 45
97-300 Piotrków Trybunalski, Poland

www.reac.se
E-mail: info@reac.se
Phone: +46 532 78 50 00