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BMD-20DIN-VER.2

DC-motorstyring

BMD-20DIN-VER.2
DC speed controller 12-24V, 0.2-20 A

- 12–24V DC
- Opptil 20 A kontinuerlig (peak 30 A)
- Innkapslet med DIN-skinnefeste
- Justerbar hastighet med intern eller ekstern potensiometer
- Analog hastighetsregulering −0–5 V, −10–10 V, 5–20 mA, PWM

PRODUKTBESKRIVELSE

DC-motorstyring BMD-20DIN ver.2
Motorhastighetsregulatoren BMD-20DIN ver.2 er utviklet for hastighetsregulering av børstede DC-motorer med forsyningsspenning opptil 24 V og effekt opptil 500 W.

Motorens hastighet kan reguleres på en av følgende måter:

- Intern potensiometer
- Ekstern potensiometer
- Analogt signal 4–20 mA
- Analogt signal −10 til +10 V DC
- Analogt signal 0–5 V DC
- PWM-regulering

Akselerasjon, retning og retardasjon stilles inn via interne regulatorer i enheten.

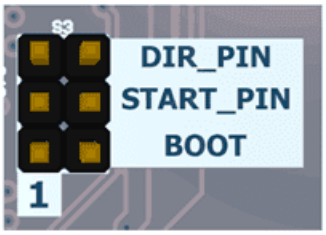
Funksjoner
DC-motorstyringen BMD-20DIN ver.2 tilbyr følgende funksjoner:

- Start og stopp av DC-motor via knapp på frontpanel eller ekstern signal
- Overbelastningsbeskyttelse med justerbar merkestrøm
- Justerbart forhold mellom akselerasjon og retardasjon
- Kortslutningsbeskyttelse for motor
- Nødstopp av DC-motor «HARDSTOPP» ved brudd i beskyttelseskretsen
- Temperaturbeskyttelse av effekttrinn

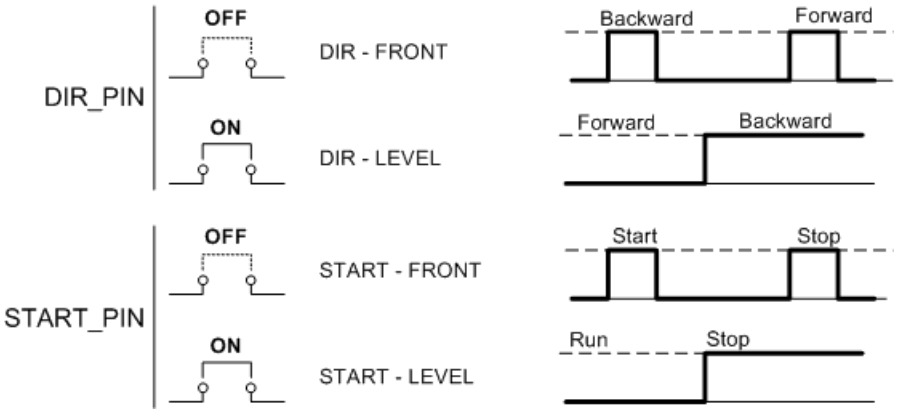
Parametere for eksterne retnings- og start/stopp-signaler

- Inngangstype: potensialfri kontakt
- Maksimal motstand for lukket kontakt: 4,7 kΩ
- Maksimal inngangsstrøm: 0,5 mA
- Logikken for «START/STOPP» og «DIR» kan justeres. Inngangene kan fungere både ved signalnivå og ved signalflanke. Standardinnstilling er flanke for «START/STOPP» og nivå for «DIR».

Endring av inngangslogikk utføres ved hjelp av jumperne «START_PIN» og «DIR_PIN» på styrekortet under kapslingen. For å endre logikken må bakdekselet fjernes og de to låsene ved kontaktene løsnes. Når kontaktparet er lukket med jumper, tilsvarer det «ON». Når jumper ikke er montert, tilsvarer det «OFF».



Styringslogikken for inngangene START/STOPP og DIR, samt REVERSE-knappen med ulike jumperposisjoner, er vist i figuren nedenfor.

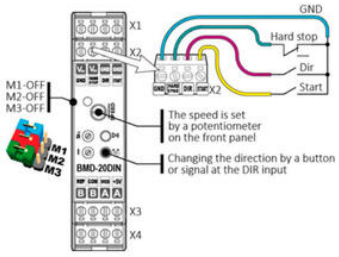


TEKNISKE DATA

Change direction of rotation (CW/CCW)	Ja
Current limit adjustable	Ja
Impulse/continuous mode	Ja
Maks strøm	(5s) 30
Potentiometer adjustable speed	Ja
Softstart/stop	Ja
Speed settings	Ja
Supplier	Smart Motor Devices
Vekt	200 g

Speed control with built-in "SPEED" potentiometer

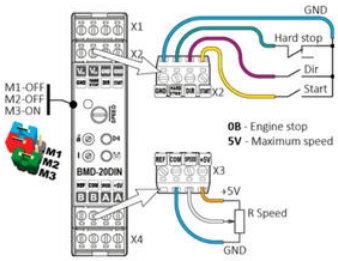
Additional connections are not required for the speed control if the built-in "SPEED" potentiometer is used. The extreme clockwise position of the potentiometer corresponds to the maximum rotation speed of the DC brush motor. The extreme counterclockwise position of the regulator corresponds to the minimum speed of the motor.



DC brush motor speed control using an internal potentiometer. Connection diagram

Speed control with external potentiometer

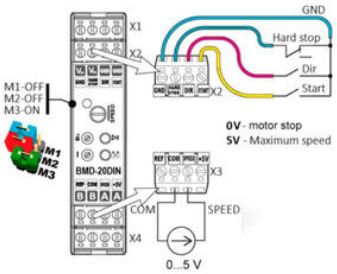
In the case of using an external potentiometer for DC brush motor speed regulation, the maximum speed corresponds to the extreme position of the regulator when 5 VDC is applied to the SPEED input. The minimum rotation speed corresponds to the position of the potentiometer when 0 VDC is applied to the SPEED input. Recommended resistance range of the external potentiometer is 2.2 ... 4.7 kOhm.



DC brush motor speed control using an internal potentiometer. Connection diagram

Speed control with analog voltage signal 0...5 VDC

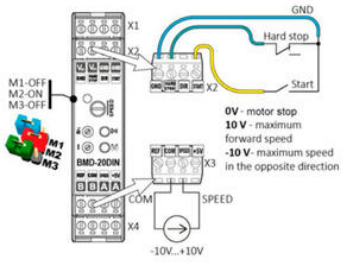
When using an external analog voltage signal 0...5 VDC for DC brush motor control, the rotation speed is proportional to the voltage level at the "SPEED" input. The maximum motor speed corresponds to a signal voltage of 5 VDC, the minimum speed corresponds to a signal voltage of 0 VDC.



DC brush motor speed control using analog voltage signal 0...5 VDC. Connection diagram

Speed and direction control with analog voltage signal -10...+10 VDC

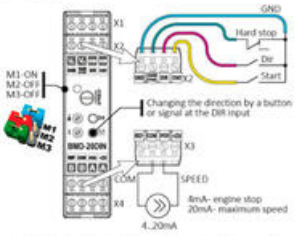
When speed is controlled by an analog signal of -10...+10VDC, the minimum speed (motor stop) corresponds to a signal level of 0 VDC, the maximum speed in the forward direction corresponds to a signal level of +10 VDC. The maximum speed in the reverse direction corresponds to a signal level of -10 VDC. This type of DC brush motor speed control is standard for most industrial control systems.



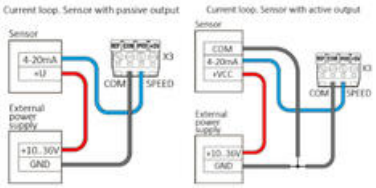
DC brush motor speed control using analog voltage signal -10...+10 VDC. Connection diagram

Speed control with analog signal 4...20 mA

When DC brush motor speed is controlled by a current analog signal of 4...20 mA, the maximum speed corresponds to a signal of 20 mA, the minimum rotation speed corresponds to a signal of 4 mA. Speed control using an analog current signal has several advantages that are fundamentally important for industrial systems: high noise immunity, signal transmission accuracy, and independence of the signal quality from the line length.

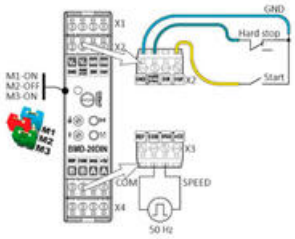


DC brush motor speed control using analog signal 4 ...20 mA. Connection diagram

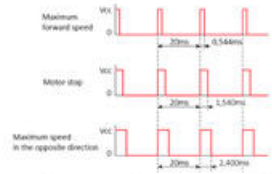


Speed control with duty ratio of an external PWM signal

The DC brush motor rotation speed can be regulated by an external PWM signal with a frequency of 50 Hz. The minimum speed (motor stop) corresponds to a pulse duration of 1540 µs. The maximum forward rotation speed corresponds to a pulse duration of 544 µs. The maximum rotation speed in the reverse direction corresponds to a pulse duration of 2400 µs.

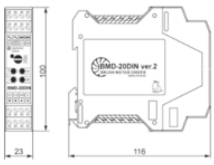


DC brush motor speed control using external PWM signal. Connection diagram



DC brush motor speed controller. Oscillogram of the PWM control signal

Dimensions of the DC brush motor speed controller BMD-20DIN ver.2



Connection of the DC brush motor speed controller BMD-20DIN ver.2