EM-282D basic applications (pcb -Dv3 firmware 282D v 2.1)

HEIGHT 60mm

180
172
dia. 4mm

Attenuation for pin 9 = speed input range "off" =0-5V & "on" =0-10V
Attenuation for pin 6 optional analog input 0-10V if 2="on"
Analog 0-5V output option for pin 10 if 3 & 4 are "on"
NOTICE! standard prog. will not support sw2-2 -3 and -4

SUPPLY
12-48V

FUSE

+

M

0V

1 +Vs
2
3
4

HEATSINK

122 114

shutdown
out 12V
Fan output

BRAKE LOAD OUT

+Vs

15   16

EXTERNAL BRAKING ENERGY
ABSORTION RESISTOR 0.5-10R

on
1
2
3
4
sw2

rx

SERIAL PORT :
PARAMETER SETTING
CONNECTOR FOR EM-236
OR EM-328 INTERFACE UNITS

FAULT
LED

stop input 2.2k bias (safety)
2.2kohm pull up to fault out
2.2kohm pull up to fault out
speed-2 input 250ohm

sw1
on
1
2
3
4

B
A Rs-485
GND

18 19
17

OPTIONAL EM-A1 CARD SOCKET
EM-A1 ENABLES TO USE SYMMETRIC
± 5V OR ±10V CONTROL SIGNAL

NOTICE !
IF EM-A1 CARD IS INSTALLED, THEN
SET PARAMETER 5=1

14 — limit BW
13 — limit FW
12 —> +12V
11 —> +5V
10 —< FAULT
9   —< SPEED-2 (speed input)
8   —< STOP (I-lim input)
7   —< run REV. (dir.)
6   —< run FW (pause)
5   — GND

The input function in brackets
is activated with parameter setting.
- speed input (param 5=0)
- speed input +dir. (param 5= 1)
- I -lim input (param 6&7= 0)

Optional braking resistor.
Braking resistor needed in application where motor
can supply energy back to supply
Recom. values 0.5R @ 12V, 1R @ 24V
Resistor power rating 50-200W, depends on solution

2-speed mode

Start commands with digital fw/bw switch.
Stop impulse from switch will stop the motor.
Active stop command will not prevent the
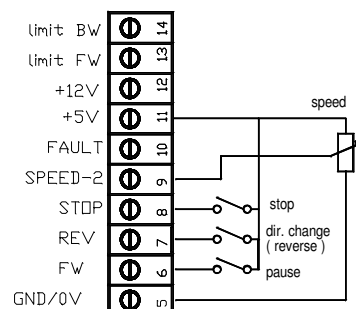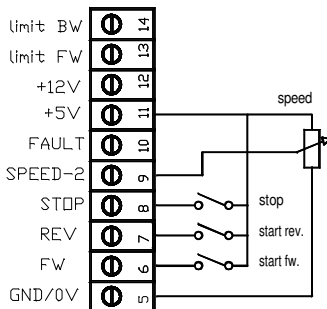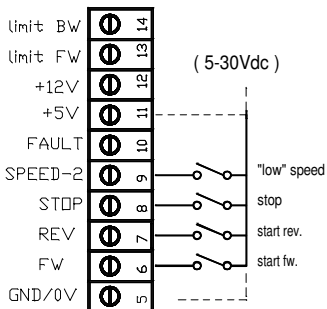new start with fw or bw command.
"speed-2" activates slow speed, value
set with parameter 5. Notice! When speed-2 is activated
the stop impulse will stop motor immediately (no ramp).
Command mode to continuous or impulse is set with
parameter 1. Input logic default is PNP but can
be changed to NPN with parameter 3.
In PNP mode the control command can be 5-30Vdc
In NPN mode switches can connect to gnd (0V)

Analog speed control mode-1

This mode is selected by setting param.5 = 0
Speed-2 input is changed in to speed input.
Motor starts with digital command fw or bw.
The speed adjust signal can be 0-5V or 0-10V
voltage signal. The basic range is selected
with dip-switch 1. and the fine tuning of range
can be done with parameter 4
In analog control mode-1 pls. use a PNP logic
for control logic. (see param. 3)
Potentimeter recom. value 1-100kohm

Analog speed control mode-2

This mode is selected by setting par.5 to val.1
Speed-2 input will be changed to speed input
and rev. input will work as direction change
input. (open =fw. / closed =bw.)
Motor starts when speed control signal starts
to increase from 0V. The basic range is
selected with dip-switch 1. and the fine tuning
of range can be done with parameter 4.
Use PNP logic for control logic (see param. 3)
Potentiometer recom. value 1-100k

(5-30Vdc)

limit BW 14
limit FW 13
+12V 12
+5V 11
FAULT 10
SPEED-2 9 "low" speed
STOP 8 stop
REV 7 start rev.
FW 6 start fw.
GND/0V 5

limit BW 14
limit FW 13
+12V 12
+5V 11 speed
FAULT 10
SPEED-2 9
STOP 8 stop
REV 7 start rev.
FW 6 start fw.
GND/0V 5

limit BW 14
limit FW 13
+12V 12
+5V 11 speed
FAULT 10
SPEED-2 9
STOP 8 stop
REV 7 dir. change (reverse)
FW 6 pause
GND/0V 5

Analog torque (current) adjust

Set parameters 6 & 7 to val. 0, then stop input
is changed to work as torque adjust input.
This option can be used with all above
examples. The adjust signal range is 0-5V.
Recom. potentiometer value 1-100k
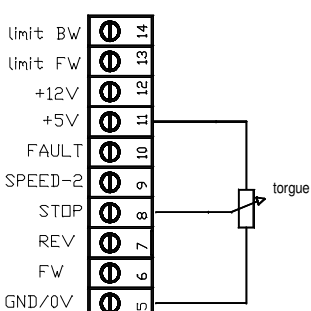
Fault output/input pin.

This pin works as NPN output in case of overheat
and other cases which are defined with parameter 10.
This pin works also as disable input if it is externally
pulled down. When this pin is pulled down the driver
stops immediately and will not start with any command !
This input can be connected as shown below or only
to LED or switch. The led voltage can be internal
5V or 12V or external 5-30V.
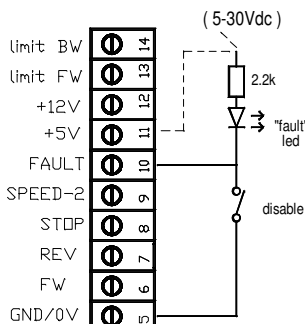
Limit inputs

These inputs stop and disable run to
fw. or bw. direction. As long as limit input
is active the drive is disabled to this direction.
Normally the limit inputs stops motor quickly
with dynamic brake but in 2-speed mode dynamic
brake is enabled only when speed-2 is activated
The logic of limit inputs can be set with param. 3
In PNP mode the control voltage can be 5-30Vdc
In NPN mode switch can be connected to gnd (0V)

limit BW 14
limit FW 13
+12V 12
+5V 11
FAULT 10
SPEED-2 9
STOP 8 torque
REV 7
FW 6
GND/0V 5

(5-30Vdc)

limit BW 14
limit FW 13
+12V 12
+5V 11
FAULT 10
SPEED-2 9
STOP 8
REV 7
FW 6
GND/0V 5

2.2k
"fault" led
disable

limit BW 14
limit FW 13
+12V 12
+5V 11
FAULT 10
SPEED-2 9
STOP 8
REV 7
FW 6
GND/0V 5

— (5-30Vdc)