Product	AMD	**Type/Series**	MS300	**Appl. Note Nr.**	MS300 pulse train
Issued by	DEN	**Author**	Arnoud de Bok	**Release Date**	July 31, 2018
Title	**MS300 PULSE TRAIN FREQUENCY COMMAND**				

Devices and special tools/equipment

Inverter: MS300 firmware 1.06
Encoder card: n.a
Motor: n.a

Test setup

n.a.

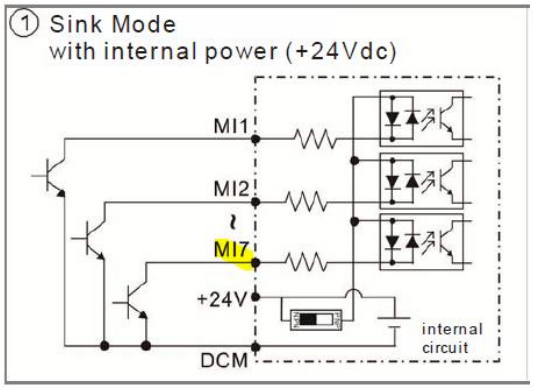
CONTENTS:

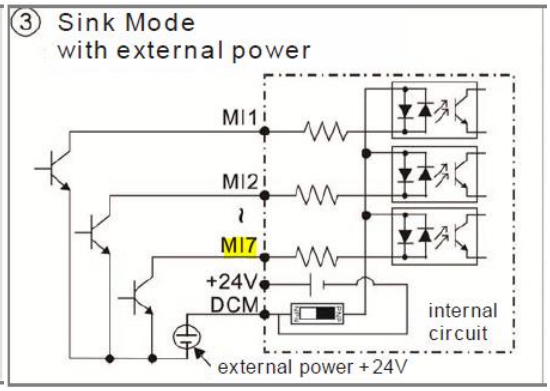
1 SET UP

1.1 MI7 for pulse train input

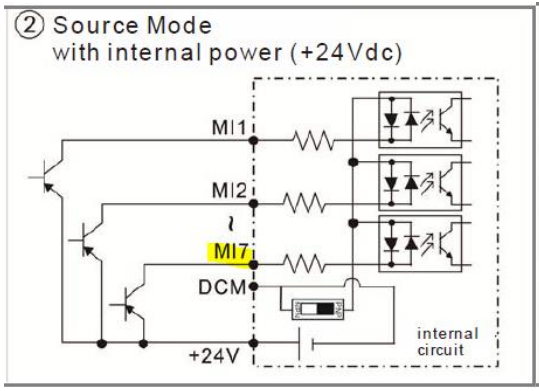
Set Pr02-07=0.
It can handle max 33kHz.

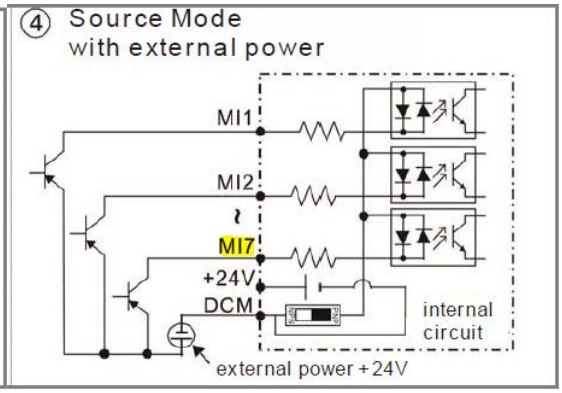
1.1.1 Wiring for NPN





1.1.2 Wiring for PNP





1.2 Enable pulse train input for frequency command

Pr00-20=4
Pr10-00=5
Pr10-16=5

Set Pr00-04=22 to view the pulse train input frequency command (so not the actual input pulse train frequency).

2 PR11-42 BIT11

Pr11-42 has bit setting.
The relevant bit is Bit11.

Bit11=0: Pr10-22 is disabled (can be set but no effect)
Bit11=1: Pr10-22 is enabled (setting has effect).

2.1 Bit11=0 in Pr11-42

The default setting of Pr11-42=0 and then Bit11=0. Pr10-22 has no effect.

2.2 Bit11=1 in Pr11-42

Pr11-42 is bit organized

Bit	11	10	9	8	7	6	5	4	3	2	1	0
Value	1	0	0	0	0	0	0	0	0	0	0	0

Decimal 2048 on standard keypad.
On KPC-CC01 (option keypad) you can set 800hex.

So set Pr11-42=2048 to enable Pr10-22 effect.

3 DRIVE OUTPUT FREQUENCY AS FUNCTION OF PARAMETERS

3.1 Pr11-42=0 (Pr10-22 has no effect)

The formula of the MS300 output frequency as function of the input frequency on MI7 is:

$$F_{out} = \left(\frac{F_{MI7}}{Pr10-01}\right) * \left(\frac{Pr10-17}{Pr10-18}\right) * \left(\frac{{}^{1}/_{2}\,(Pr05-04)}{4}\right)$$

where F_{out}=Output frequency of the drive in Hz
F_{MI7}=Frequency of signal on MI7 in Hz

3.2 Pr11-42 Bit11=1 (Pr10-22 enabled)

Set Pr11-42=2048dec (=800hex=1000000000000bin)

3.2.1 Pr10-22=0 Output frequency (Electronic frequency)

The output frequency is independent of Pr05-04 #pole setting.
The formula of the MS300 output frequency as function of the input frequency on MI7 is:

$$F_{out} = \left(\frac{F_{MI7}}{Pr10-01}\right) * \left(\frac{Pr10-17}{Pr10-18}\right) * 2$$

where F_{out}=Output frequency of the drive in Hz
F_{MI7}=Frequency of signal on MI7 in Hz

3.2.2 Pr10-22=1 Motor shaft frequency (Mechanical frequency)

The output frequency depends on Pr05-04 #pole setting.
In this case, the drive keeps the motor shaft frequency proportional to the input frequency, taking #poles into account.

The formula of the MS300 output frequency as function of the input frequency on MI7 is:

$$F_{out} = \left(\frac{F_{MI7}}{Pr10-01}\right) * \left(\frac{Pr10-17}{Pr10-18}\right) * (Pr05-04)$$

$$F_{shaft} = \frac{F_{out}}{Pr05-04}$$

where F_{out}=Output frequency of the drive in Hz
F_{MI7}=Frequency of signal on MI7 in Hz
F_{shaft}=Frequency of the motor shaft in Hz