

# DALMATIC DOOR AUTOMATIC

**B2 MB V.2 / CONTROLCARD V.1 – 3 x 400V**  
**OVITOR TVRFC5Z7M – DOOR OPERATOR**  
**CC-S16 PIC-PROGRAM**



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ORDER.....

COSTOMER.....

# DESCRIPTION

## DALMATIC DOOR AND GATE OPERATOR

Electronic programmable PIC processor control card: CONTROLCARD V.1,  
printboard measurements B x L x H = 63,5 x 66 x 12 mm. connection 24V DC.

CONTROLCARD V.1 printboard has exchangeable PIC processor, with options for different programs.

**B2 MB V.2** motherboard has the measurements B x L x H = 158 x 227 x 80 mm.

The electric motor relays max. 3,0 kW, 3 x 400 Volt - 50 Hz, AC 3 operation.

Steering transformer 400/18V AC - 16 VA.

Terminal connection.

Whit:

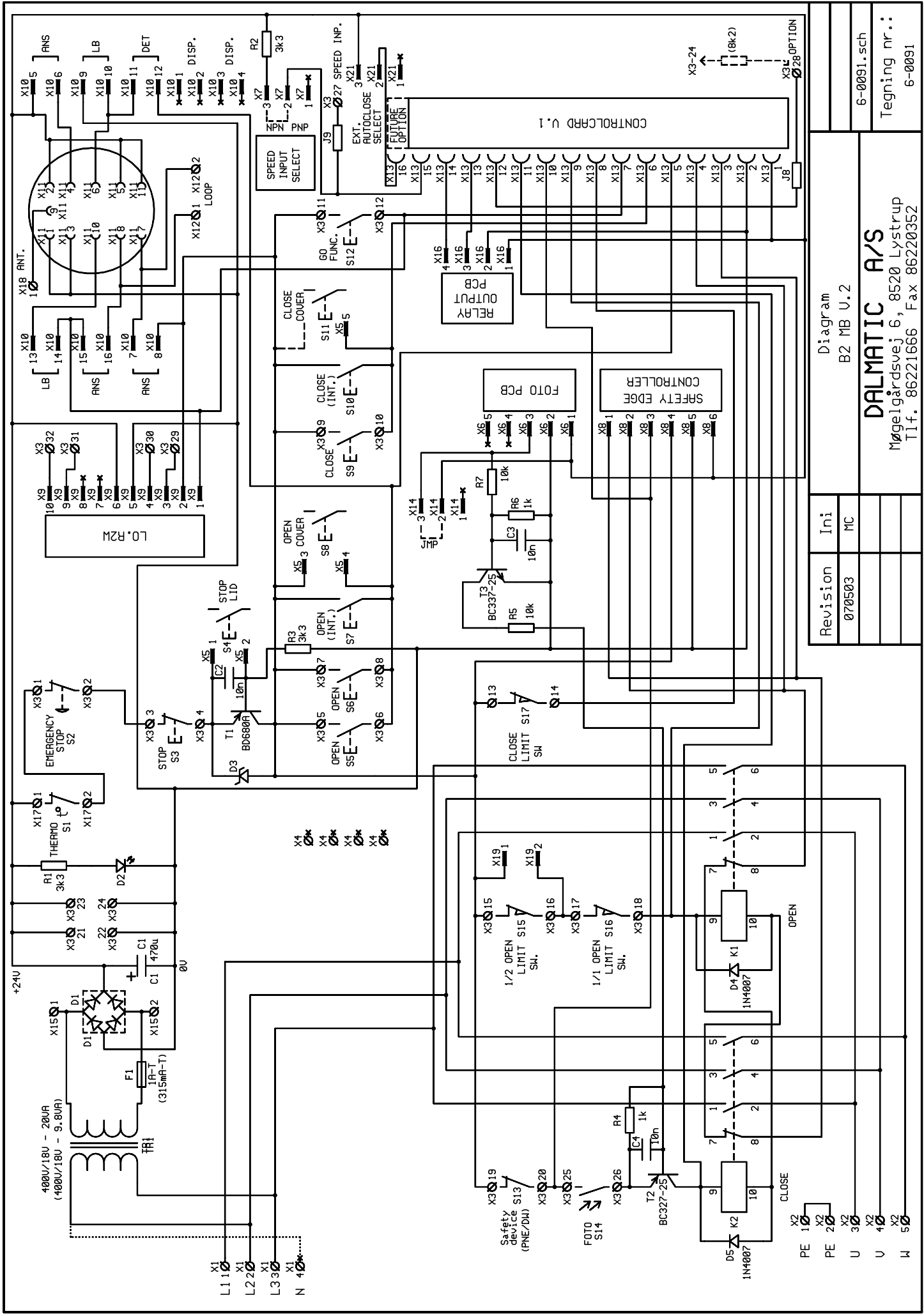
- 18 VAC outlet terminals. ( X15 )
- 24 VDC outlet terminals. ( X3 21-22 & 23-24 )

Connection options:

- Push buttons in lid open, stop, close and emergency stop. ( X5 )
- Photocells. ( X6 )
  - DALMATIC V.1
  - DOT 111.8
  - DOT 111.11
- Radio. ( X11 – X9 )
  - TELECO
  - BMT
  - LIFTBOY
  - ANSONIC
  - BENINCA (X9)
- Loopdetector. ( X11 / X12 )
  - JD 25-1 24 VDC
- Safety Edge Controller ( X8 ). - 8,2 kOhm
  - 1,2 kOhm
  - Diode
  - Bircher Infrasound ISM
  - Fraba optical OSE
- Change-over switch 1/2 - 1/1 open.
- speed control NPN/PNP ( X7 – X3 23 ).
- Electric sensor list with 8,2 kOhm resistor ( X3 24 ). OPTION – in program

## Beskrivelse B2 MB V.2

Klem-numre	Betegnelse	Dansk			English
<b>X1</b>		Printklemrække			Terminal strip
L1, L2, L3, N	L1 L2 L3 N	Tilgang 3x400V + N max.10A		L1 L2 L3 N	Supply 3x400V + N max.10A
<b>X2</b>		Printklemrække			Terminal strip
PE	PE	Jordleder		PE	Earth connection
U, V, W	U V W	Motor 3x400V max. 4A		U V W	Motor 3x400V max. 4A
<b>X3</b>		Printklemrække			Terminal strip
X3 : 1-2	S2	Nødstop (NC)		S2	Emergency stop (NC)
X3 : 3-4	S3	Stop (NC)		S3	Stop (NC)
X3 : 5-6	S5	Åbne - tryk (NO)		S5	Open - pushbutton (NO)
X3 : 7-8	S6	Åbne - tryk (NO)		S6	Open - pushbutton (NO)
X3 : 9-10	S9	Lukke - tryk (NO)		S9	Close - pushbutton (NO)
X3 : 11-12	S12	KIP (NO)		S12	KIP - go function (NO)
X3 : 13-14	S17	Lukke - endestop (NC)		S17	Close - limit switch (NC)
X3 : 15-16	S15	1/2 Åben - endestop (NC)		S15	1/2 open - limit switch (NC)
X3 : 17-18	S16	1/1 Åben - endestop (NC)		S16	1/1 open - limit switch (NC)
X3 : 19-20	S13	PNE - DW (NC)		S13	PNE - DW (NC)
X3 : 21-22		24 V DC - udtag			24 V DC
X3 : 23-24		24 V DC - udtag			24 V DC
X3 : 25-26	S14	Foto - ekstern (NC)		S14	Photocell - external (NC)
X3 : 27		Speed control indgang			Speed control input
X3 : 28		8,2 kOhm indgang			8,2 kOhm input
X3 : 29-30		Relæ udgang Beninca radio			Relay output Beninca radio
X3 : 31-32		Antenne Beninca radio			Antenna Beninca radio
<b>X4</b>		Printklemrække ekstra			Terminal strip extra
<b>X5</b>	S4, S8, S11	Sokkel for låge betjening		S4, S8, S11	Socket for pushbuttons in lid
<b>X6</b>		Sokkel for intern foto			Socket for internal photocell
<b>X7</b>		Valg af føler NPN / PNP			Sensor selection NPN / PNP
<b>X8</b>		Sokkel for Safety edge control.			Socket for Safety edge control.
<b>X9</b>		Sokkel for Beninca radio			Socket for Beninca radio
<b>X10</b>		Opsætning af 11 pol sokkel			Connection of 11 pole socket
X10 : 1-2		Disp.			Disp.
X10 : 3-4		Disp.			Disp.
X10 : 5-6	ANS	Ansonic radio		ANS	Ansonic radio
X10 : 7-8	ANS	Ansonic radio		ANS	Ansonic radio
X10 : 9-10	LB	Liftboy radio		LB	Liftboy radio
X10 : 11-12	DET	Loop detektor		DET	Loop detektor
X10 : 13-14	LB	Liftboy radio		LB	Liftboy radio
X10 : 15-16	ANS	Ansonic radio		ANS	Ansonic radio
<b>X11</b>		11 pol sokkel for radio/loop			11 pole socket for radio/loop
<b>X12</b>		Klemrække for loop			Terminal strip for loop
X12 : 1-2		Detektor sløjfe			Loop winding
<b>X13</b>		Controlcard v.1			Controlcard v.1
<b>X14</b>		Jumper ved ingen intern foto			Jumper when no photocell
<b>X15</b>		18 V AC – udtag			18 V AC
<b>X16</b>		LAMP-PCB v.1			LAMP-PCB v.1
<b>X17</b>	S1	Klemrække for termo		S1	Terminal strip thermo
X17 : 1-2		Termoføler (NC)			Thermo (NC)
<b>X18</b>		Antenne for radio X11			Antenna for radio X11
<b>X19</b>		Jumper ved ingen ½ åben			Jumper when no ½ open sw.
<b>X21</b>		Option			Option
K1	K1	Åbne kontaktor		K1	Close contactor
K2	K2	Lukke kontaktor		K2	Open contactor
TR1	TR1	Transformer		TR1	Transformer
F1	F1	Finsikring 1 A		F1	Fuse 1 A
S7	S7	Åbne tryk på print		S7	Open - pushbutton on PCB
S10	S10	Lukke tryk på print		S10	Close - pushbutton on PCB



Revision Inl  
 070503 MC

Diagram  
 B2 MB U.2

6-0091.sch  
 Tegning nr.:  
 6-0091

**DALMATIC A/S**  
 Møgelgårdsvej 6, 8520 Lystrup  
 Tlf. 86221666 Fax 86220352

# PIC CC-S07 / CC-S12 / CC-S16 PROGRAM DESCRIPTION

## PIC 16F872-I/SP For Control card V.1

With program-switch-function (Red/ Blue program)

DIL switch configuration	
S1 - 1	Reversing by speed control closing: OFF = stop ON = reversing
S1 - 2	Wire tighten : OFF = off ON = on
S1 - 3	car wash function: OFF = off ON = on
S1 - 4	Photo beam break time on car wash function: OFF = 0,05 sec. ON = 1 sec.
S1 - 5	Program select red/blue: OFF = blue, without DW supervision ON = red, with DW supervision
S1 - 6	Auto close: OFF = no auto close* ON = auto close on (RV3)

Potentiometer configuration	
RV - 1	Speed control closing, minimum = OFF
RV - 2	Electronic afterrun
RV - 3	Auto close time
RV - 4	Speed control open (if ON by RV-1)

POWER ON (green LED D3)

When the power is on the green LED (D3) is illuminated

OPEN PUSH-BUTTON (yellow LED D13)

When open push-button is activated the yellow LED (D13) is illuminated. Opens with self hold.

CLOSE PUSH-BUTTON (Yellow LED D14)

When close push-button is activated the yellow LED (D14) is illuminated. Closes with self hold.  
The gate must be stopped by pushing stop push-button or open push-button, until the door can be closed by pushing the close push-button.

Flip-Flop (yellow LED D12)

When flip-flop is activated the yellow LED (D12) is illuminated.  
If the door is closing and the flip-flop function is affected, the gate will reverse and open. The flip-flop function can only close the door at open limit switch. The flip-flop function is not active during fail. The time of reverse can not be adjusted.

STOP (yellow LED D4)

When stop is activated the yellow LED (D4) flashes and the door cannot run.

LIMIT SWITCH (yellow LED D9 and D10)

When a closed limit switch is activated the yellow LED (D9) is illuminated. When an open limit switch is activated the yellow LED (D10) is illuminated.

PROGRAM SWITCH

If S1-5 is ON the RED program is selected, supervision of the safety edge. If S1-5 is OFF the BLUE program is selected, no supervision.

Air switch (yellow LED D7)

If the air switch is actuated during closing the door will open automatically. That is if the gate stays unmoved between open and close limit switch, and the safety edge switch is actuated it will not open.  
The door cannot close if the air switch is actuated/ not working. If the control unit does not get a signal from the air switch safety edge when the gate is run by close limit switch, it will go into FAIL. (if the supervision is selected S1-5=ON).

FAIL ON SAFETY EDGE SWITCH (red LED D5) (only is supervision is selected)	If fail on the safety edge switch – detector list appears, a red LED (D5) flashes and the door can open automatically, but only deadman close. The fail will be reset by driving the gate into close limit switch, and the control unit will get a signal from the safety edge switch. A fail can be reset during adjustment by setting S1-5 on OFF and then return to ON.
ELECTRONIC POST MOVEMENT/ CLOSED LIMIT SWITCH	When the gate during closing hits a closed limit switch, the gate continues until the safety edge switch is actuated or the time of the electrical post movement runs out (RV2 0 - 0,6 sec.). After the electrical post movement has run out, an extra period of time for control of the safety edge switch signal starts. This period of time is about 0,5 sec.
PHOTO	If the gate is closing and the photocell is activated, the gate will automatically open. That is if the gate stands still between open- and close- limit switch, and the photocell is activated, the gate will not open. The gate cannot close if the photocells are broken.
REV.TIME	The reverse time is the time between each change of direction. If the gate is closing and the switch for open is pushed, the reverse time will stop the gate until the time has gone, then the gate will open. The reverse time is regularly 0,3 sec. and cannot be adjusted. When activating the safety edge switch the time of reverse is 0,005 sec.
*AUTO CLOSE	Auto close time can be adjusted on the potentiometer RV-3 (3-130 sec.). If the potentiometer is turned to minimum (against the clock) the auto close function is OFF. The auto close time is reset by open- or photo signal. Auto close can alternative be selected by OPTION 8k2 input. The 8k2 input must be short-circuit to “- 24V” terminal. B2 terminal X3:20 and 24 And the DIL SW6 must be in OFF position.
CARWASH FUNCTION	The carwash function is active when S1-3 is ON (only works if the potentiometer RV-3 is not turned to minimum). The auto close timer first starts when the photocell has been activated for more than 1,0 sec. (S1-4=ON) or 0,05 sec. (S1-4=OFF). The photo timer is active for time measurement when open limit switch is activated or the gate is opening. The auto close is first reset on closed limit switch, that is if the gate is closing and there is an open-signal, the gate will close again as soon as the open limit switch is activated and auto close time is run out again.
ADAPTIVE RUNTIMER	The runtimer is automatic learned by the first continuously door running from close limit to open limit. Yellow “RUN T” LED will flash fast until the runtimer is learned. The door will work without runtimer until this is learned. Max. time for adaptive runtimer is 4 min. Reset of runtimer for new learning is done by continuously push on close push button for 10 sec. when the door is in closed position.
RUN TIME (yellow LED D6)	The door stops if this time runs out, and the yellow LED (D6) is illuminated (running time error). After this the gate can be restarted by activating either the open-/ close button or the KIP-button. The running time can be adjusted on potentiometer RV-2 (3-130 sec.).

SPEED CONTROL (yellow LED D11)

The gear motor must be with 4 sampling pulses per rev. of the motor. A sensor type NPN or PNP is selected with jumper X7 on B2 motherboard.

The speed control close is adjusted on the potentiometer RV1.

The speed control open is adjusted on the potentiometer RV4.

The speed control is switched off if the potentiometer RV1 turned to minimum (against the clock).

In case of error on the speed control the gate will stop and the yellow LED (D11) is illuminated.

If S1-1 is ON, the gate will during closing reverse and open again, if there is error on the speed control.

COUNTER

Indication of the number of openings happens by pushing the open- and closing button at the same time, and the yellow LED's will flash like this:

D11 – SPEED	LED will indicate the number	1's
D10 – OLS	LED will indicate the number	10's
D9 – CLS	LED will indicate the number	100's
D8 - PHOTO	LED will indicate the number	1000's
D7 – PNE/DW	LED will indicate the number	10000's
D6 – RUN T	LED will indicate the number	100000's

TEST DATE

08-10-03 Erik Svendsen & Torben Laursen File name: CC-S07.hex

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

PROGRAM NUMBER  
CC-S16

RV4: SPEED CONTROL OPEN (IF ON BY RV1)

RV3: AUTO-CLOSE TIME

RV2: AFTER RUN TIME

RV1: SPEED CONTROL CLOSE, MINIMUM = OFF

ON: REVERSING AT SPEED CONTROL CLOSE

OFF: STOP AT SPEED CONTROL CLOSE

ON: WIRE TIGHTNER FUNCTION

OFF: NO WIRE TIGHTNER FUNCTION

ON: CARWASH FUNCTION

OFF: NO CARWASH FUNCTION

ON: 1 SEK. PHOTO BEAM BREAK TIME

OFF: 0,05 SEC. PHOTO BEAM BREAK TIME

ON: RED PROGRAM (WITH DW SUPERVISION)

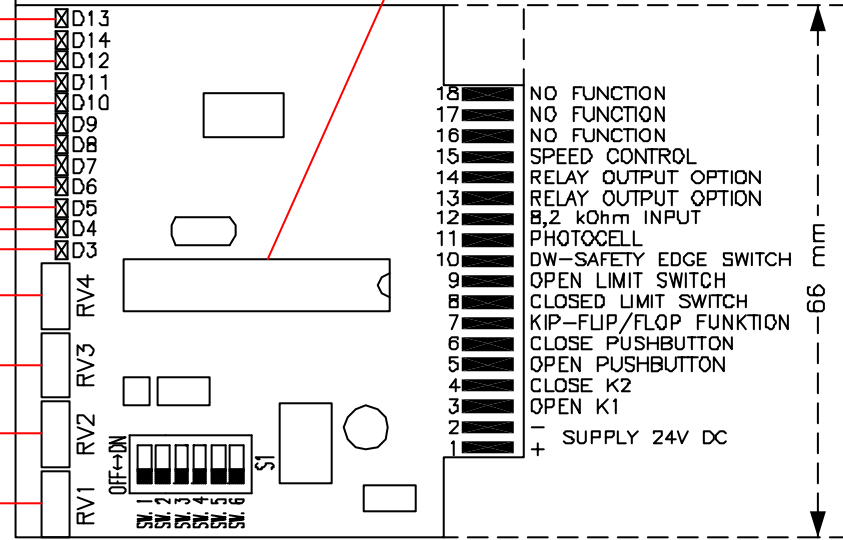
OFF: BLUE PROGRAM (WITHOUT DW SUPERVISION)

ON: AUTO CLOSE

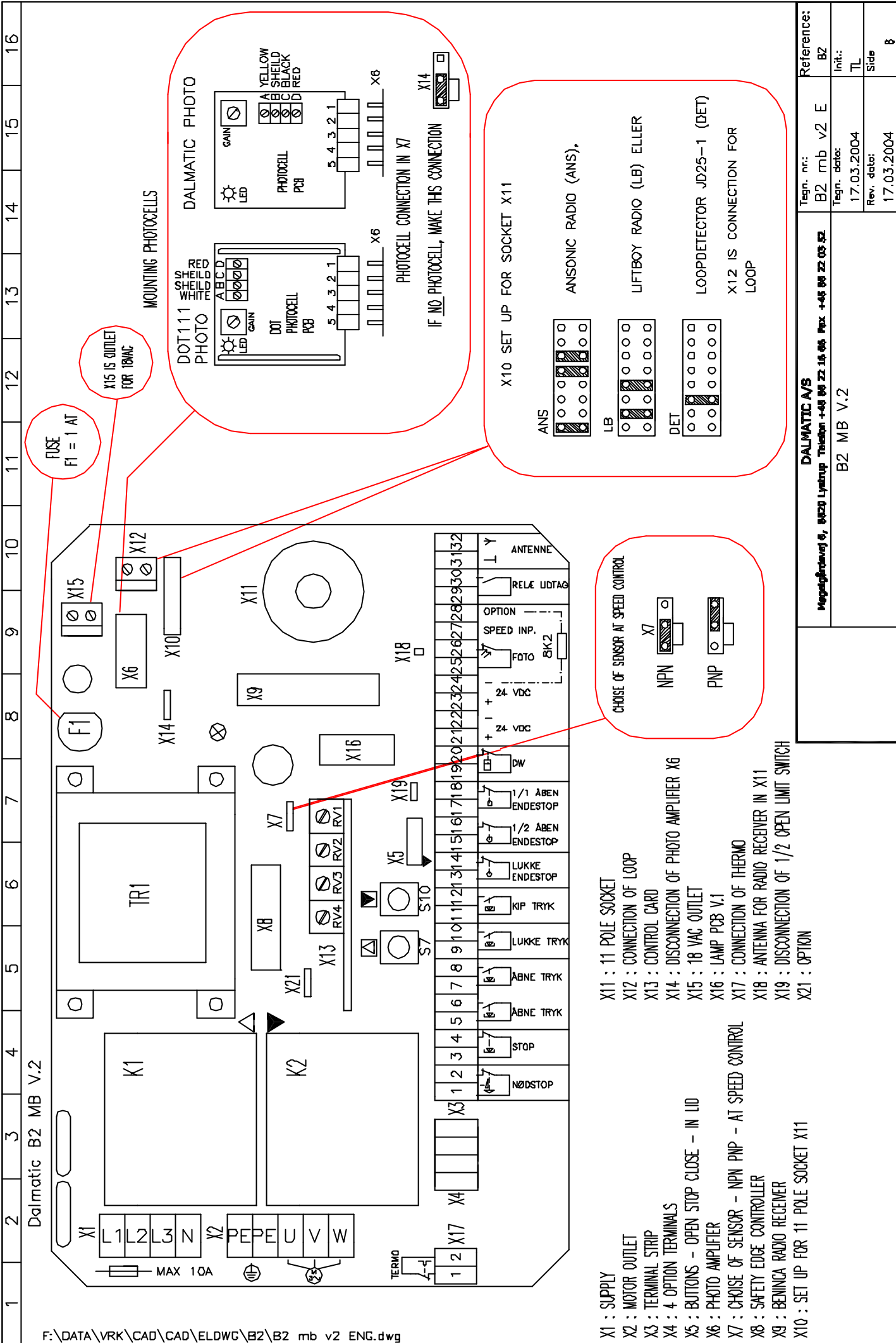
OFF: NO AUTO CLOSE

LIGHT-EMITTING DIODES

- D3: POWER ON
- D4: STOP ACTIVATED
- D5: DW FAIL
- D6: RUN TIME FAIL
- D7: DW ACTIVATED
- D8: PHOTOCELLS ACTIVATED
- D9: CLOSE LIMIT SWITCH ACTIVATED
- D10: OPEN LIMIT SWITCH ACTIVATED
- D11: SPEED CONTROL FAIL
- D12: KIP - FLIP/FLOP ACTIVATED
- D14: CLOSE PUSHBUTTON ACTIVATED
- D13: OPEN PUSHBUTTON ACTIVATED



<b>DALMATIČ A/S</b>		Teĝn. nr.:	CC-S16 ENG	Niĝesta
Morgunfjellveĝ 15, 8520 Lyngrup, Telefon +45 86 22 16 86, Fax +45 86 22 03 51.		Teĝn. dato:	14.04.2004	side:
CONTROLCARD V.1		Rev. dato:	14.04.2004	init.:
Program number : CC-S16				TL
				Side
				7



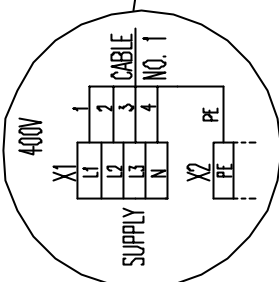
- X1 : SUPPLY
- X2 : MOTOR OUTLET
- X3 : TERMINAL STRIP
- X4 : 4 OPTION TERMINALS
- X5 : BUTTONS - OPEN STOP CLOSE - IN LID
- X6 : PHOTO AMPLIFIER
- X7 : CHOICE OF SENSOR - NPN PNP - AT SPEED CONTROL
- X8 : SAFETY EDGE CONTROLLER
- X9 : BENINCA RADIO RECEIVER
- X10 : SET UP FOR 11 POLE SOCKET X11
- X11 : 11 POLE SOCKET
- X12 : CONNECTION OF LOOP
- X13 : CONTROL CARD
- X14 : DISCONNECTION OF PHOTO AMPLIFIER X6
- X15 : 18 VAC OUTLET
- X16 : LAMP PCB V.1
- X17 : CONNECTION OF THERMO
- X18 : ANTENNA FOR RADIO RECEIVER IN X11
- X19 : DISCONNECTION OF 1/2 OPEN LIMIT SWITCH
- X21 : OPTION

<b>DALMATIC A/S</b>	
Techn. nr.:	B2 mb v2 E
Techn. date:	17.03.2004
Rev. date:	17.03.2004
Reference:	BZ
Init.:	TL
Side:	B

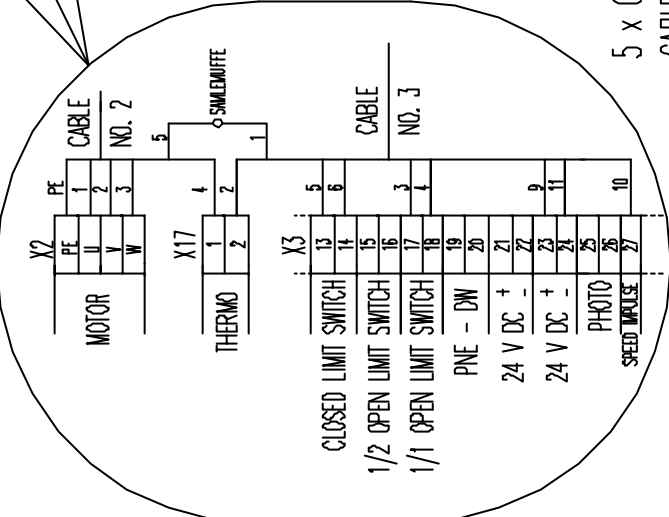
Megetgårdvej 6, 8830 Lystrup Telefon +45 86 22 16 66 Fax +45 86 22 03 52  
 B2 MB V.2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

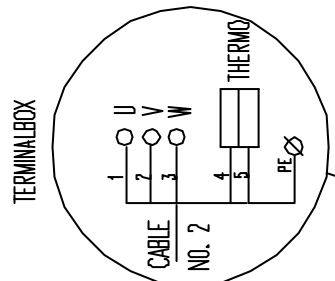
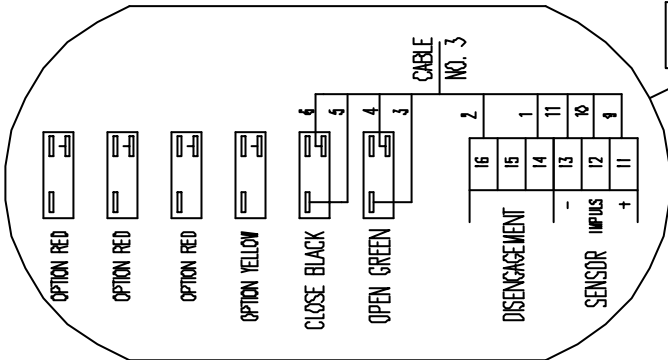
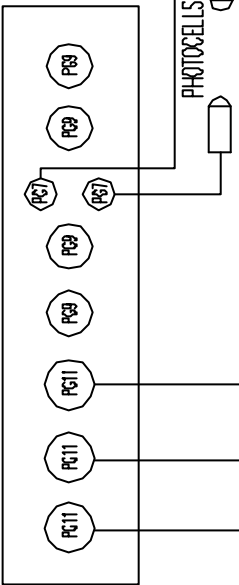
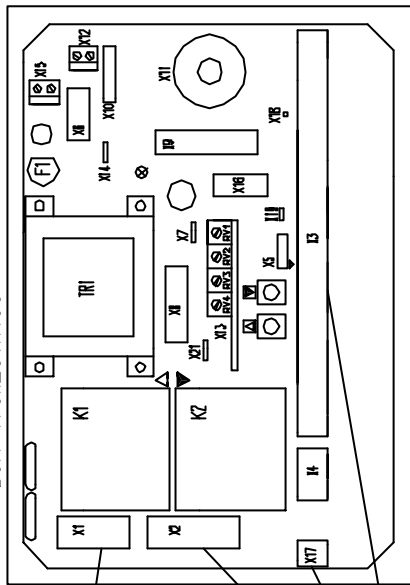
SUPPLY TO MOTHERBOARD



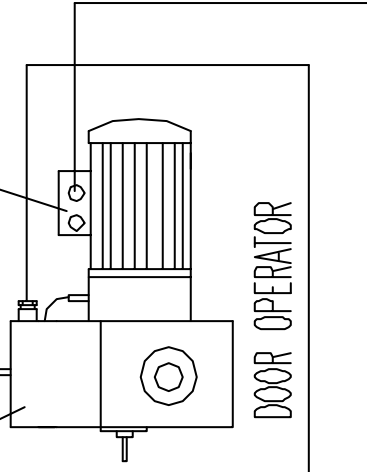
MOUNTING MOTOR AND LIMIT SWITCH ON MOTHERBOARD



BOX 175x250x150



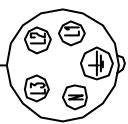
MOUNTING OF MOTOR AND LIMIT SWITCH



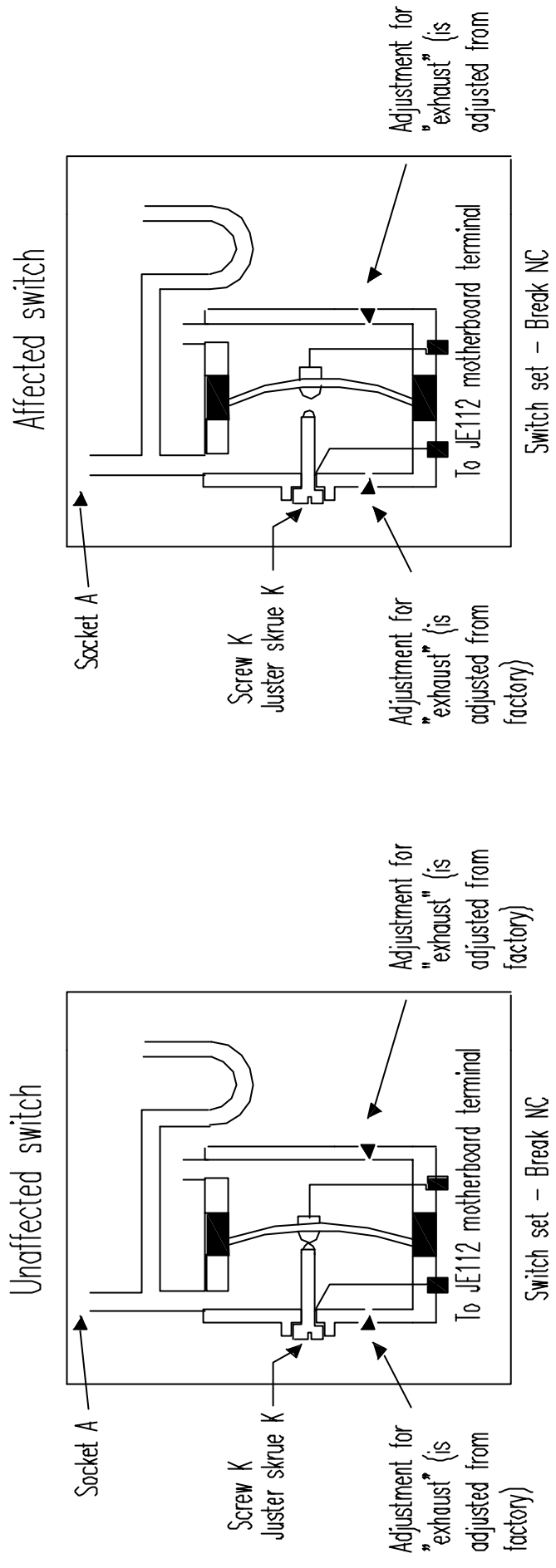
12 x 0,75 mm<sup>2</sup> Y-JZ - CABLE NO.3

5 x 0,75 mm<sup>2</sup> Y-JZ - CABLE NO.2

5 x 0,75 mm<sup>2</sup> Y-JZ  
CABLE NO. 1  
L = 1,2 M



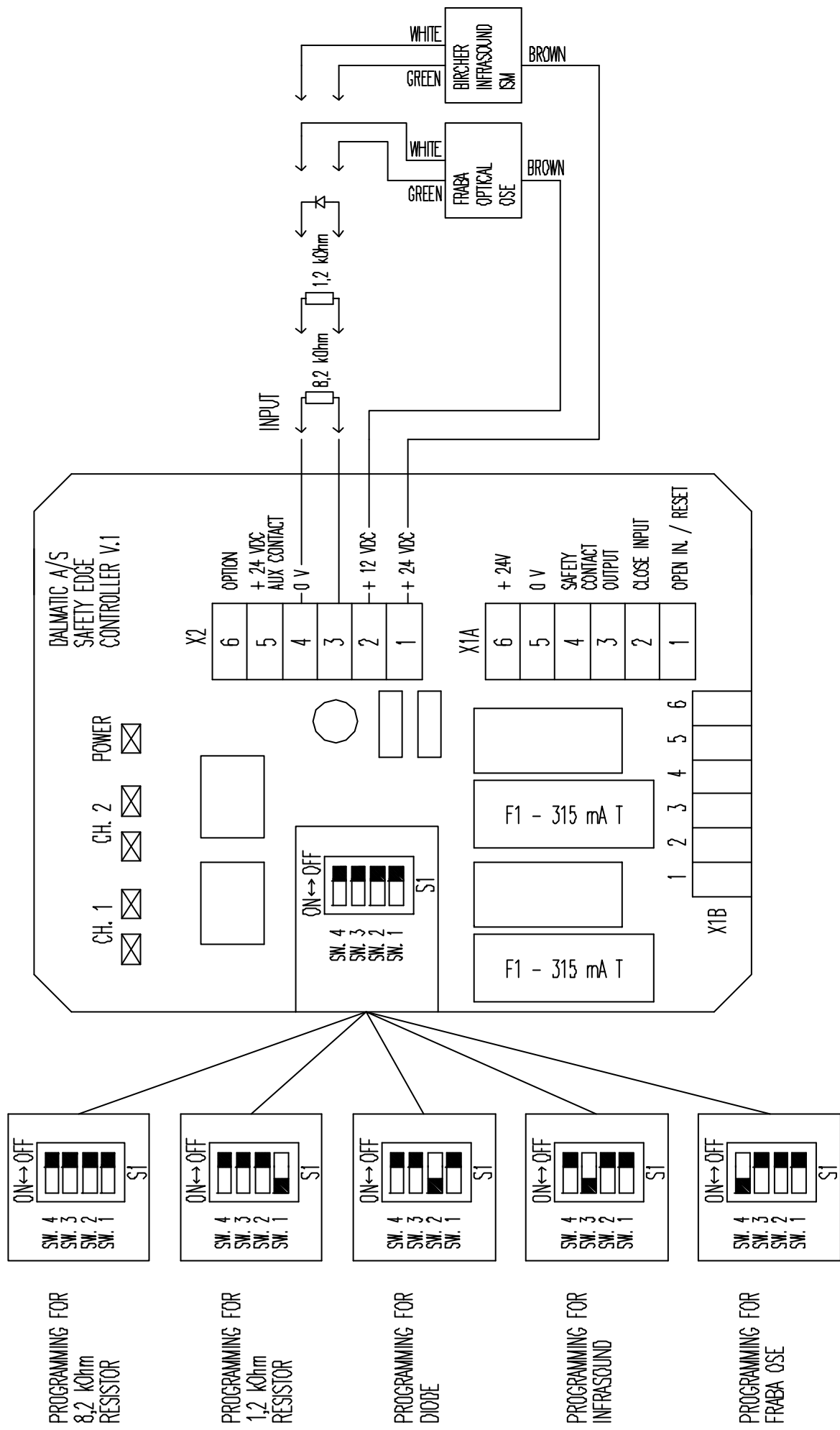
<p><b>DALMATIČ A/S</b>                  Møglingshøjvej 5, 8520 Lystrup Telefon +45 86 22 16 66 Fax +45 86 22 03 52</p>		<p>Legh. nr.: B2V2-TV-R-ENG                  Tegh. dato: 14.04.2004                  Rev. dato: 14.04.2004</p>	<p>Reference: B2                  Init.: TL                  Side: 9</p>
<p>MOUNTING DRAWING                  B2 MB V.1 AND                  OVIOR DRIVE UNIT                  TVRFSZ7M1</p>			



**EXAMPLE OF ADJUSTMENT NC :**

Screw K is adjusted thus connection (NC) between the terminals on the DW-switch is made. Then the screw is turned 1/2 round. Assemble the air hose from the safe edge on socket A.

<b>DALMATIČ A/S</b> Mergelgårdsvej 6, 8520 Lystrup, Telefon +45 86 22 16 66, Fax +45 86 22 03 51.		Teqn. nr.:	DWE	Nisste side:	
		Teqn. dato:	13.10.1992	init.:	TL
		Rev. dato:	25.06.2002	Side	11
ADJUSTMENT OF DW AIR-SWITCH					



PROGRAMMING FOR  
8,2 kOhm  
RESISTOR

PROGRAMMING FOR  
1,2 kOhm  
RESISTOR

PROGRAMMING FOR  
DIODE

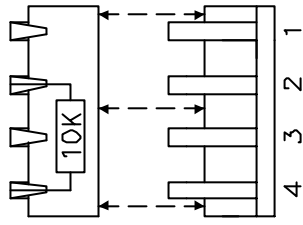
PROGRAMMING FOR  
INFRASOUND

PROGRAMMING FOR  
FRABA OSE

<b>DALMATIC A/S</b>		Techn. nr.:	S E C	Reference:	BR2000
Mergelgårdsvej 6, 8520 Lystrup, Telefon +45 86 22 16 66, Fax +45 86 22 03 57.		Techn. dato:	28.11.2000	Init.:	TL
SAFETY EDGE CONTROLLER		Rev. dato:	01.06.2001	Side	11

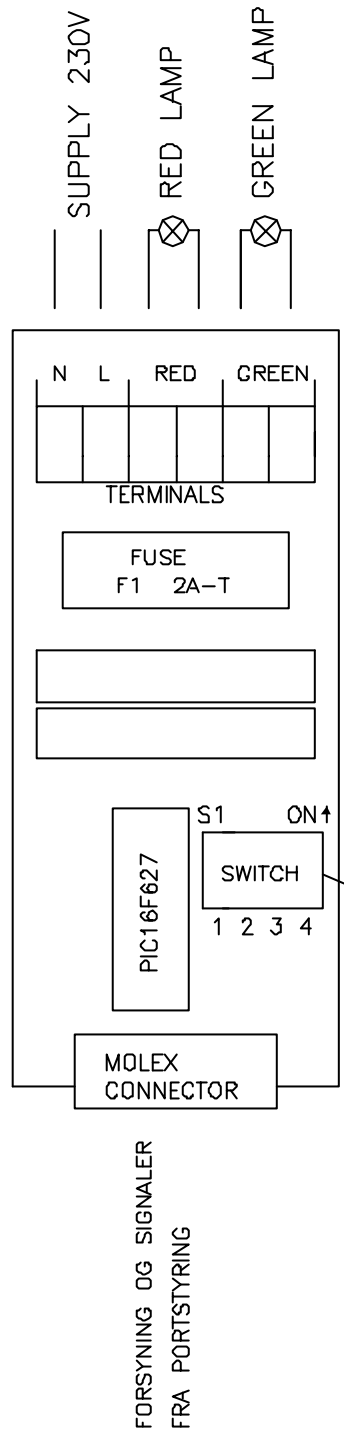
IN B3 CONTROL UNIT: X10  
 IN B2 CONTROL UNIT: X16

CONNECTOR WITH 10KOHM RESISTOR



REMOVE CONNECTOR WITH RESISTOR AND MOUNT LAMP-PCB V.1

LAMP-PCB V.1



ADJUSTMENT OF S1 DIP-SWITCH  
 LOOK AT PAGE 13

DALMATIK A/S Megafabrikvej 6, 8550 Lystrup. Telefon +45 86 22 16 66. Fax +45 86 22 03 52.		Techn. nr.: LAMP-PCB-E	Næste side: TL
		Techn. dato: 17.03.2004	Side: 12
LAMP-PCB V.1		Rev. dato: 17.03.2004	Side: 12

## Lamp control unit LAMP-PCB V.1

The function of red/green traffic light can be chosen according to the following scene.

S1 on LAMP-PCB V.1

0 = OFF

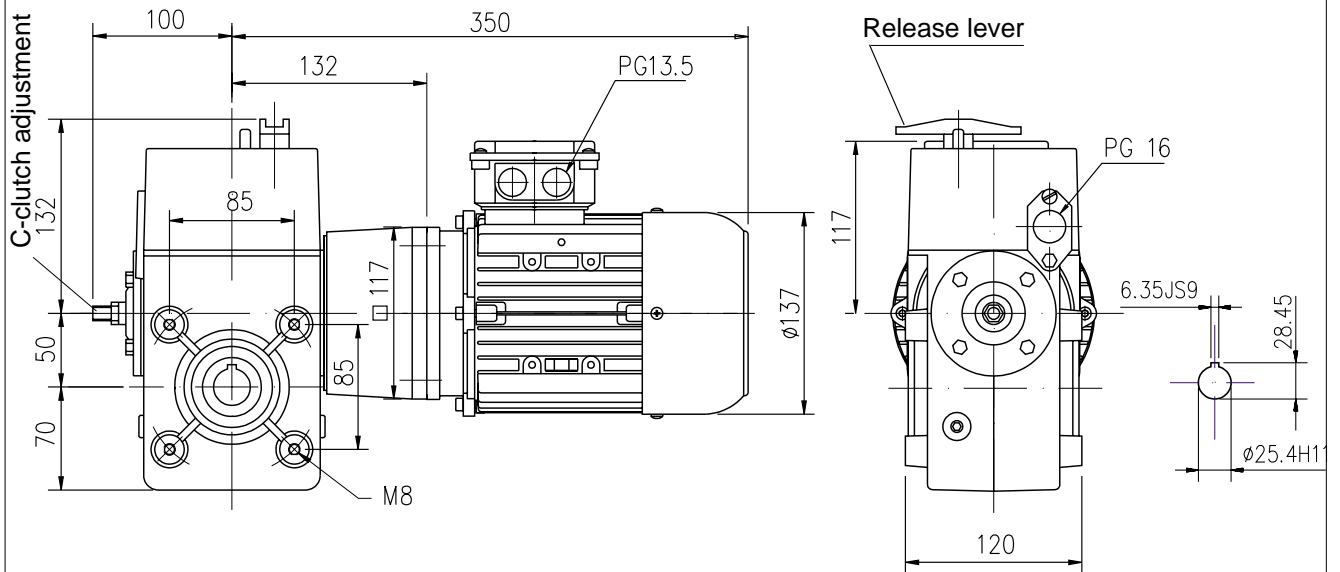
1 = ON

Name	SW1	SW2	SW3	SW4	Functional description
L1	0	0	0	0	Red light when door is not open Green light when door is open
L1G	1	0	0	0	Red light when door is not open Green light is blinking when the door is open
L1R	0	1	0	0	Red light is blinking when the door is not open Green light is blinking when the door is open
L1RG	1	1	0	0	Red light is blinking when the door is not open Green light is blinking when the door is open
L2	0	0	1	0	Red light when the door is opening or closing Green light when the door is open No light when the door is closed
L2G	1	0	1	0	Red light when the door is opening or closing Green light when the door is open No light when the door is closed
L2R	0	1	1	0	Red light is blinking when the door is opening or closing Green light when the door is open No light when the door is closed
L2RG	1	1	1	0	Red light is blinking when the door is opening or closing Green light is blinking when the door is open No light when the door is closed
L3	0	0	0	1	Red light when the door is nor open nor closed Green light when the door is open Warning when closing from open limit switches. Red light appears before closing
L3G	1	0	0	1	Red light when the door is not open or closed Green light is blinking when the door is open Warning when closing from open limit switches. Red light appears before closing
L3R	0	1	0	1	Red light blinks when the door is nor open nor closed Green light when the door is open Warning when closing from open limit switches. Red light starts blinking before closing
L3RG	1	1	0	1	Red light is blinking when the door is nor open nor closed Green light blinks when the door is open Warning when closing from open limit switches. Red light starts blinking before closing.

DOOR OPERATOR

# TEMEC TVRFC 5 Z7M

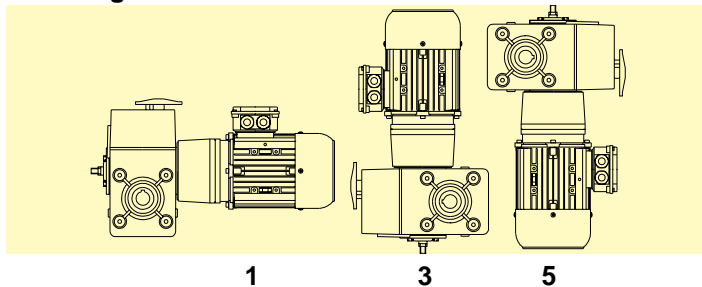
**6225/7076**



Gear TV			3-400V 50Hz Motor M7076				
RPM	Transmission ratio i	Nominal torque <sup>*)</sup> Nm	Effect kW	RPM	Current A	S3 %	Thermal relay setting A
22	62:1	90	0,55	1380	1,8	15	≤1,8
31	45:1	75					
48	29:1	62					
77	36:2	45					
95	29:2	40					
156	36:4	27					

\*) Starting torque = 2,1x Nominal torque

**Mounting:**



Transmission ratios of limit switches	
Transmission ratio	Max. number of revolutions of the output shaft
14:1	12,5
25:1	22,5
38:1	33,5



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# DECLARATION OF CONFORMITY

The undersigned declare under sole responsibility that the products:

**Dalmatic B2 MB V.2**  
**Dalmatic B3 MB V.3**

manufactured at:

Dalmatic A/S  
Møgelgårdsvej 6, DK-8520 Lystrup  
Tel. +45 7023 1666  
Fax. +45 7020 0337

to which this declaration is in conformity with:

**Low Voltage Directive 73/23/EEC**  
**Electromagnetic compatibility Directive 89/336/EEC.**

Following standards is used:

EN60439-1  
EN61000-6-2  
EN61000-6-3  
EN12453  
EN12445

Comments:

Note that to fulfill the EN12453 and EN12445, all mechanical parts in the door must be taken into account.

Name: Hans Hilmar Dall

Date: \_\_\_\_\_

Signature: \_\_\_\_\_