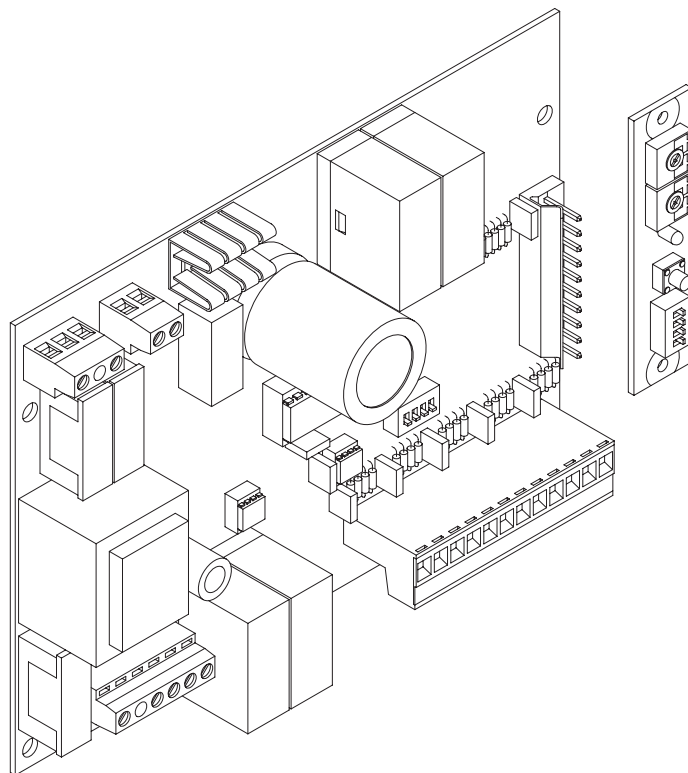


L8542619
Rev. 07/00/02



CENTRALINA A MICROPROCESSORE PER
CONTROL UNIT WITH MICROCONTROLLER FOR
MIKROCONTROLLER-STEUERUNG FÜR
CENTRALE A MICROCONTRÔLEUR POUR
CENTRALITA A MICROPROCESADOR POR

AU.TR
AU.TRL



Libro istruzioni
Operating instructions
Betriebsanleitung
Livret d'instructions
Libro de instrucciones

UNIONE NAZIONALE COSTRUTTORI
AUTOMATISMI PER CANCELLI, PORTE,
SERRANDE ED AFFINI

Dichiarazione CE di conformità
EC declaration of conformity
EG-Konformitätserklärung

Déclaration CE de conformité
Declaracion CE de conformidad

Con la presente dichiariamo che il nostro prodotto
We hereby declare that our product
Hiermit erklaren wir, dass unser Produkt
Nous déclarons par la présente que notre produit
Por la presente declaramos que nuestro producto

AU.TR

è conforme alle seguenti disposizioni pertinenti:
complies with the following relevant provisions:
folgenden einschlagigen Bestimmungen entspricht:
correspond aux dispositions pertinentes suivantes:
satisface las disposiciones pertinentes siguientes:

Direttiva sulla compatibilità elettromagnetica (89/336/CCE, 93/68/CEE)
EMC guidelines (89/336/EEC, 93/68/EEC)
EMV-Richtlinie (89/336/EWG, 93/68/EWG)
Directive EMV (89/336/CCE, 93/68/CEE) (Compatibilité électromagnétique)
Reglamento de compatibilidad electromagnética (89/336/MCE, 93/68/MCE)

Direttiva sulla bassa tensione (73/23/CEE, 93/68/CEE)
Low voltage guidelines (73/23/EEC, 93/68/EEC)
Tiefe Spannung Richtlinie (73/23/EWG, 93/68/EWG)
Directive bas voltage (73/23/CEE, 93/68/CEE)
Reglamento de bajo Voltaje (73/23/MCE, 93/68/MCE)

Norme armonizzate applicate in particolare:
Applied harmonized standards, in particular:
Angewendete harmonisierte Normen, insbesondere:
Normes harmonisées utilisées, notamment:
Normas armonizadas utilizadas particularmente:

Norme armonizzate applicate in particolare:
Applied harmonized standards, in particular:
Angewendete harmonisierte Normen, insbesondere:
Normes harmonisées utilisées, notamment:
Normas armonizadas utilizadas particularmente:

EN 55022, EN 61000-3-2, EN 61000-3-3, EN 50082-1

EN 60204-1, EN 60335-1

Norme e specifiche tecniche nazionali applicate in particolare:
Applied national technical standards and specifications, in particular:
Angewendete nationale Normen und technische Spezifikationen, insbesondere:
Normes et specifications techniques nationales qui ont été utilisées, notamment:
Normas y especificaciones técnicas nacionales que se utilizaron particularmente:

Data/Firma

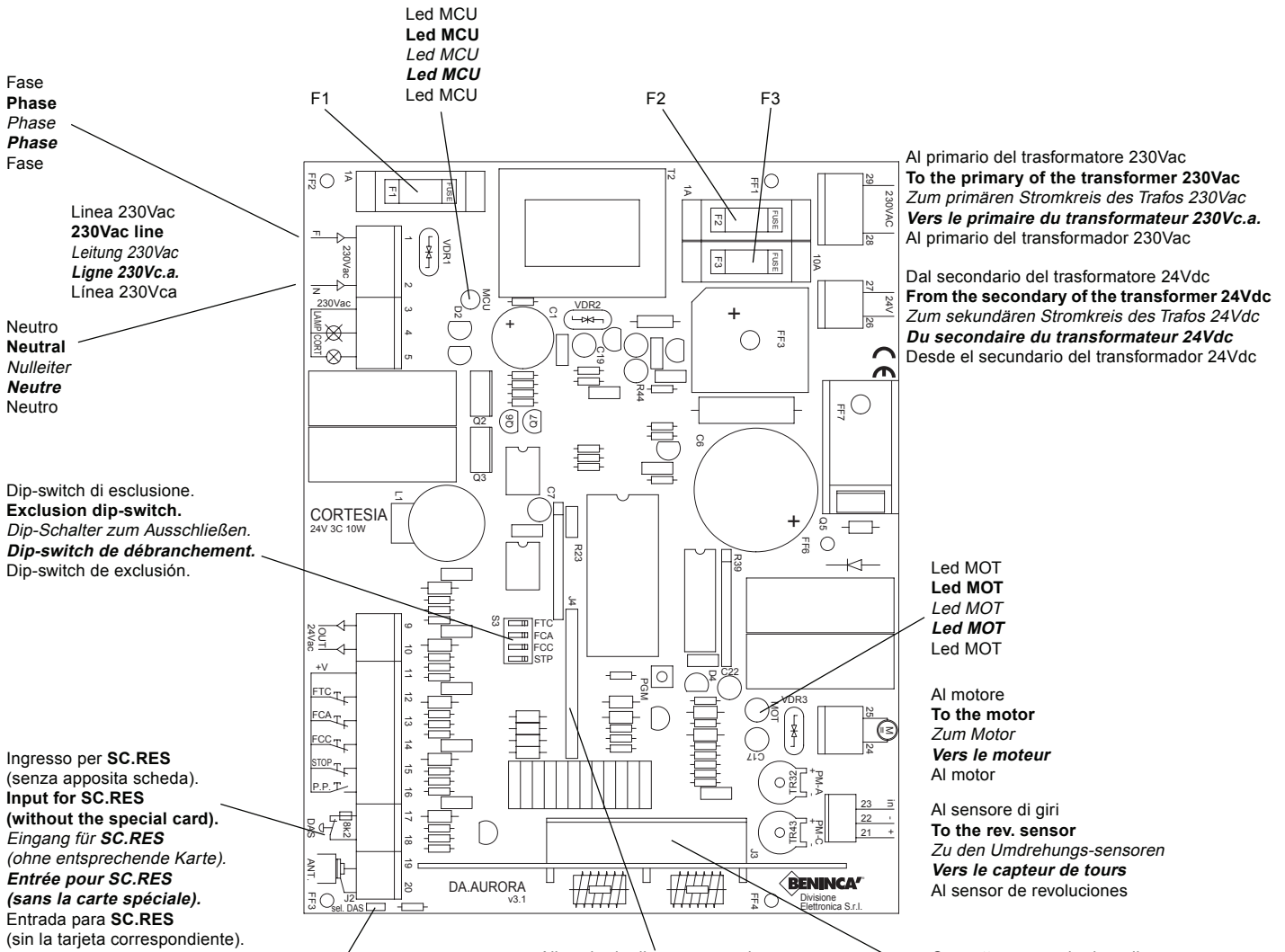
UNI 8612

Data/Firma

Data/Firma



Automatismi Benincà Srl
Via Capitello, 45
36066 SANDRIGO (VI)
ITALIA



Fase
Phase
Phase
Phase
Phase

Linea 230Vac
230Vac line
Leitung 230Vac
Ligne 230Vc.a.
Linea 230Vca

Neutro
Neutral
Nulleiter
Neutre
Neutro

Dip-switch di esclusione.
Exclusion dip-switch.
Dip-Schalter zum Ausschließen.
Dip-switch de débranchement.
Dip-switch de exclusión.

Ingresso per SC.RES
(senza apposita scheda).
Input for SC.RES
(without the special card).
Eingang für SC.RES
(ohne entsprechende Karte).
Entrée pour SC.RES
(sans la carte spéciale).
Entrada para SC.RES
(sin la tarjeta correspondiente).

Alla scheda di programmazione.
To the programming card.
Zur Programmierungskarte.
Vers la carte de programmation.
A la tarjeta de programación.

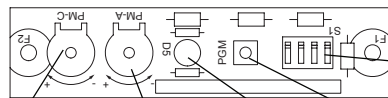
Led MOT
Led MOT
Led MOT
Led MOT
Led MOT

Al motore
To the motor
Zum Motor
Vers le moteur
Al motor

Al sensore di giri
To the rev. sensor
Zu den Umdrehungs-sensoren
Vers le capteur de tours
Al sensor de revoluciones

Connettore per scheda radio.
Radio board connection.
Eingabe Empfängersteckkarte.
Connecteur fiche radio.
Connectador ficha radio.

Ponticello da chiudere solo se si utilizza il bordo sensibile SC.RES senza l'apposita scheda.
Jumper to be short-circuited only if the SC.RES sensitive edge is used without the special card.
Die Brücke nur schließen, wenn die empfindliche Kante SC.RES ohne entsprechende Karte verwendet wird.
Pontet à fermer seulement lorsqu'on utilise le bourellet sensible SC.RES sans la carte spéciale.
Puente a cerrar sólo si se usa el borde sensible SC.RES sin la tarjeta correspondiente.



Regolazione potenza motore in chiusura PM-C.
Adjustment of motor power in the closing phase PM-C.
Motorleistung beim Schließen einstellen PM-C.
Réglage puissance moteur en fermeture PM-C.
Regulación potencia motor en cierre PM-C.

Regolazione potenza motore in apertura PM-A.
Adjustment of motor power in the opening phase PM-A.
Motorleistung beim Öffnen einstellen PM-A.
Réglage puissance moteur en ouverture PM-A.
Regulación potencia motor en apertura PM-A.

Dip-switch di programmazione.
Programming dip-switch.
Dip-Schalter zur Programmierung.
Dip-switch de programmation.
Dip-switch de programación.

Pulsante di programmazione.
Programming push button.
Eichungstaste zur Programmierung.
Bouton de programmation.
Botón de programación.

Led di programmazione.
Programming LED.
Eichungsleuchte zur Programmierung.
Led de programmation.
LED de programación.

N.B.: I dip-switch di programmazione hanno un doppio utilizzo: nel normale funzionamento impostano le funzioni elencate in tabella 4; nella programmazione selezionano prima la funzione (tabella 5 parte 1) e poi il valore selezionato (tabella 5 parte 2).

N.B.: the programming dip-switches have a double use: in the normal operation they serve to preset functions listed in table 4; in the programming mode, they first select the function (table 5, part 1) and then the selected value (table 5, part 2).

N.B.: Die Dip-Schalter zur Programmierung haben eine zweifache Funktion: im normalen Betrieb werden die in der Tabelle 4 aufgelisteten Funktionen eingestellt; durch die Programmierung, wählen sie zuerst die Funktion (Tabelle 5, Teil 1) und dann den Wert (Tabelle 5, Teil 2).

N.B.: Les dip-switch de programmation ont une double utilisation: en fonctionnement normal ils programment les fonctions énumérées au tableau 4; dans la programmation en sélectionnant d'abord la fonction (tableau 5 partie 1), puis la valeur sélectionnée (tableau 5 partie 2).

N.B.: Los dip-switch de programación tienen un doble uso: en el funcionamiento normal configuran las funciones indicadas en la tabla 4; en la programación seleccionan primero la función (tabla 5, parte 1) y seguidamente el valor seleccionado (tabla 5, parte 2).

Control unit with microcontroller for AU.TR

The microprocessor control unit "AU.TR" can be used to control 24Vdc motors, with a power not higher than 80W.

Inputs/Outputs - table 1

(1,2)	Input 230VAC= Power supply of control unit, 230VAC - 50Hz (phase= term.1, neutral= term.2)
(3,4)	Output, flashing light= To the flashing light. Lamp, 230V - 25W max.
(3,5)	Output, courtesy light= Lamp, 230V - 25W max.
(9,10)	Output, 24Vac= Output, power supply, 24Vac stabilized.
(11)	Output +V= Common terminal for FTC-FCA-FCC-STOP-PP inputs.
(12)	Input, FTC= Input for the N.C. contact of the photocell
(13)	Input, FCA= Input for the opening limit switch (only if an external limit switch is used). N.C. contact.
(14)	Input, FCC= Input for the closure limit switch (only if an external limit switch is used). N.C. contact.
(15)	Input, STOP= Normally closed contact
(16)	Input, P.P.= Step-by-step input, connected in parallel at the output of the radio board. N.O. contact.
(17,18)	Input, DAS= Input for sensitive edge SC.RES used without the special card. N.B.: If the sensitive edge SC.RES is not used, terminals 17 and 18 must be short-circuited.
(19,20)	Input, Antenna= Antenna input for receiver card. (Antena= term.19, Braiding= term. 20).
(21,22,23)	Input, Sensor= Input for the rev. sensor (pre-cabled)
(24,25)	Output, motor= To the motor 24Vdc (pre-cabled)
(26,27)	Input, 24Vac= From the secondary of the 24Vac transformer
(28,29)	Output, 230Vac= To the primary of the 230Vac transformer
J2	Jumper for SC.RES (close only if SC.RES is used without the appropriate card).
J3	Connector for radio board.

Led - Table 2

MCU	Power supply for control unit. If the LED is off, check the fuse F1 (1A).
MOT	Power supply of the motor. If the LED is off, check the fuse F3 (10A).

Trimmer - Table 3

PM-A	Adjust the motor power in the opening phase (rotate clockwise to increase the power).
PM-C	Adjust the motor power in the closing phase (rotate clockwise to increase the power).

Installation of the control unit

- 1 After assessing the characteristics and the risks of the installation, short-circuit all normally closed inputs which are not in use: STOP(15), FCC(14), FCA(13), FTC(12), by using the 4 exclusion dip-switches. The correspondences are: 1= FTC, 2= FCA, 3= FCC, 4= S TOP.
- 2 Connect the control inputs: PP(16), STOP(15).
- 3 Connect the 24Vac power supply (9,10) to any devices connected to the control unit (photocells, receivers, ...), keeping to the correct polarity. Connect the flashing light. After checking the connections again, power the control unit to the input terminals, 230Vac(1,2). When the unit is switched on, the LEDs MCU and MOT should be on. The LED PROG should flash.
- 4 The first operation of the control unit is carried out at reduced speed to measure the gate stroke. Adjust the trimmers PM-A and PM-C to half their value.
 - Press the programming button. The programming LED starts flashing rapidly.
 - Preset the programming dip-switches as follows: 1-OFF, 2-ON, 3-OFF, 4-ON.
 - Press the programming button. The programming LED stays on with fixed light.
 - Send an opening control signal (PP, remote control).
 - The control unit carries out the pre-warning flashing and then the opening phase starts at reduced speed.
 - When the door has reached the desired opening, send another impulse signal with the remote control or the step-by-step control.
 - The flashing light does not switch off and after some seconds the closing phase starts automatically at reduced speed.
 - When the door is at a few centimetres from the ground, give another impulse control with the step-by-step control or the remote control, keeping in mind that the distance between the ground and the door will be deducted from the opening of passage in the next operation.
 - The LED starts flashing slowly to indicate the return to normal operation.

Some values are set as indicated with "default" in part 2 of table 5. After the above adjustment, if the functions related to these values are to be modified, proceed as described in the "Programmable functions" section, otherwise preset the dip-switches for "Normal functions", as per table 4. After the stroke regulation, the trimmers PA and PC must be adjusted. They permit to control the power supplied by the motor.

WARNING! During the adjustment operation, the obstacle detection devices, except for the current limiting device (power adjuster), are switched off.











Normal functions of dip-switches – table 4

DSW1	Button "P.P." operation OFF: Open/Stop/Close/Stop sequence ON: Open/Close/Open/Close sequence
DSW2	Automatic closure OFF: disabled ON: enabled
DSW3	"Multi-users" function (the "P.P." button allows only the opening) OFF: disabled ON: enabled
DSW4	Pre-warning flashing OFF: Disabled ON: enabled

Programmable functions

The programmable functions are accessible:

- when the control unit is switched on;
- after pressing the "STOP" button;
- at completion of the closing phase;
- by stopping the closing phase with the "P.P." button.

Programming sequence of the control unit		
A		The LED PGM flashes slowly to indicate the normal operation of the control unit.
B		Press the button PGM to enter the programming mode.
C		The LED PGM flashes rapidly to indicate the operation in the programming mode.
D		Select the desired function by presetting the dip-switch as shown in table 5, part 1.
E		Press the button PGM to activate the function.
F		The LED PGM stays on waiting for the desired value to be typed in.
G		Preset the dip-switch as shown in the second column of table 1.
H		Press the button PGM to confirm the value.
I		The LED PGM starts to flash rapidly again. To modify another function, repeat the procedure from point D.
J		To store the functions in memory and exit from the programming mode, position all the dip-switches on OFF and press the button PGM.

Note: To insert braking during the last opening length, proceed as described on menu 2.

N.B.: Use this option for sectional doors only.










Table 5																																																																																						
Function - part 1	Selectable values - part 2																																																																																					
End of programming Dip-switch 1+4= Off/Off/Off/Off 	End of the programming phase and storage of changes in memory.																																																																																					
Menu 1 Dip-switch 1+4= On/Off/Off/Off 	Dip-switch1 = operation of courtesy light Off: normal (default) On: flashing Dip-switch2 = reduction of closing time after passing the photocell. Off: no change (default) On: the closing time is reduced to 1/4th of the total value. Dip-switch3 = Automatic closure if the gate movement is stopped with button "P.P" in the opening phase. Off: disabled automatic closure (default) On: enabled automatic closure. Dip-switch4 = Operation of the flashing light. Off: constant flashing (default) On: slow flashing in the opening phase, rapid flashing in the closing phase.																																																																																					
Menu 2 Dip-switch 1+4= Off/On/Off/Off 	Dip-switch1 = Flashing during the dwell time for the automatic closure. Off: flashing light off (default) On: flashing light on Dip-switch2 = Switching of photocells during the open. phase. Off: no activation (default) On: stop until the photocell remains activated. Dip-switch3 = Braking at end of opening. Off: braking activated On: braking deactivated (default). Dip-switch4 = Not in use.																																																																																					
Dwell time for automatic closure Dip-switch 1+4= On/On/Off/Off  If the contact of the input FTC is open, the dwell time is reset.	<table border="1"> <thead> <tr> <th>Dsw1</th> <th>Dsw2</th> <th>Dsw3</th> <th>Dsw4</th> <th>Seconds</th> </tr> </thead> <tbody> <tr><td>Off</td><td>Off</td><td>Off</td><td>Off</td><td>20</td></tr> <tr><td>On</td><td>Off</td><td>Off</td><td>Off</td><td>40</td></tr> <tr><td>Off</td><td>On</td><td>Off</td><td>Off</td><td>60</td></tr> <tr><td>On</td><td>On</td><td>Off</td><td>Off</td><td>80 (default)</td></tr> <tr><td>Off</td><td>Off</td><td>On</td><td>Off</td><td>100</td></tr> <tr><td>On</td><td>Off</td><td>On</td><td>Off</td><td>120</td></tr> <tr><td>Off</td><td>On</td><td>On</td><td>Off</td><td>140</td></tr> <tr><td>On</td><td>On</td><td>On</td><td>Off</td><td>160</td></tr> <tr><td>Off</td><td>Off</td><td>Off</td><td>On</td><td>180</td></tr> <tr><td>On</td><td>Off</td><td>Off</td><td>On</td><td>200</td></tr> <tr><td>Off</td><td>On</td><td>Off</td><td>On</td><td>220</td></tr> <tr><td>On</td><td>On</td><td>Off</td><td>On</td><td>240</td></tr> <tr><td>Off</td><td>Off</td><td>On</td><td>On</td><td>260</td></tr> <tr><td>On</td><td>Off</td><td>On</td><td>On</td><td>280</td></tr> <tr><td>Off</td><td>On</td><td>On</td><td>On</td><td>300</td></tr> <tr><td>On</td><td>On</td><td>On</td><td>On</td><td>320</td></tr> </tbody> </table>	Dsw1	Dsw2	Dsw3	Dsw4	Seconds	Off	Off	Off	Off	20	On	Off	Off	Off	40	Off	On	Off	Off	60	On	On	Off	Off	80 (default)	Off	Off	On	Off	100	On	Off	On	Off	120	Off	On	On	Off	140	On	On	On	Off	160	Off	Off	Off	On	180	On	Off	Off	On	200	Off	On	Off	On	220	On	On	Off	On	240	Off	Off	On	On	260	On	Off	On	On	280	Off	On	On	On	300	On	On	On	On	320
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Duration of courtesy light Dip-switch 1+4= Off/Off/On/Off  The time during which the courtesy light is on is reset if the contact of the input FTC is opened and then closed (passage of people or vehicles) during the dwell time of automatic closure.	<table border="1"> <thead> <tr> <th>Dsw1</th> <th>Dsw2</th> <th>Dsw3</th> <th>Dsw4</th> <th>Seconds</th> </tr> </thead> <tbody> <tr><td>Off</td><td>Off</td><td>Off</td><td>Off</td><td>0</td></tr> <tr><td>On</td><td>Off</td><td>Off</td><td>Off</td><td>20</td></tr> <tr><td>Off</td><td>On</td><td>Off</td><td>Off</td><td>40</td></tr> <tr><td>On</td><td>On</td><td>Off</td><td>Off</td><td>60</td></tr> <tr><td>Off</td><td>Off</td><td>On</td><td>Off</td><td>80 (default)</td></tr> <tr><td>On</td><td>Off</td><td>On</td><td>Off</td><td>100</td></tr> <tr><td>Off</td><td>On</td><td>On</td><td>Off</td><td>120</td></tr> <tr><td>On</td><td>On</td><td>On</td><td>Off</td><td>140</td></tr> <tr><td>Off</td><td>Off</td><td>Off</td><td>On</td><td>160</td></tr> <tr><td>On</td><td>Off</td><td>Off</td><td>On</td><td>180</td></tr> <tr><td>Off</td><td>On</td><td>Off</td><td>On</td><td>200</td></tr> <tr><td>On</td><td>On</td><td>Off</td><td>On</td><td>220</td></tr> <tr><td>Off</td><td>Off</td><td>On</td><td>On</td><td>240</td></tr> <tr><td>On</td><td>Off</td><td>On</td><td>On</td><td>260</td></tr> <tr><td>Off</td><td>On</td><td>On</td><td>On</td><td>280</td></tr> <tr><td>On</td><td>On</td><td>On</td><td>On</td><td>300</td></tr> </tbody> </table>	Dsw1	Dsw2	Dsw3	Dsw4	Seconds	Off	Off	Off	Off	0	On	Off	Off	Off	20	Off	On	Off	Off	40	On	On	Off	Off	60	Off	Off	On	Off	80 (default)	On	Off	On	Off	100	Off	On	On	Off	120	On	On	On	Off	140	Off	Off	Off	On	160	On	Off	Off	On	180	Off	On	Off	On	200	On	On	Off	On	220	Off	Off	On	On	240	On	Off	On	On	260	Off	On	On	On	280	On	On	On	On	300
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Sensitivity to speed changes during the normal stroke. Dip-switch 1+4= On/Off/On/Off (Default= 25%). 	It presets the intervention threshold if the motor speed is reduced. <table border="1"> <thead> <tr> <th>Dsw1</th> <th>Dsw2</th> <th>% Changes in the clos. phase</th> </tr> </thead> <tbody> <tr> <td>Off</td> <td>Off</td> <td>5% (very sensitive)</td> </tr> <tr> <td>On</td> <td>Off</td> <td>10%</td> </tr> <tr> <td>Off</td> <td>On</td> <td>25%</td> </tr> <tr> <td>On</td> <td>On</td> <td>50% (default)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Dsw3</th> <th>Dsw4</th> <th>% Changes in the open. phase</th> </tr> </thead> <tbody> <tr> <td>Off</td> <td>Off</td> <td>5% (very sensitive)</td> </tr> <tr> <td>On</td> <td>Off</td> <td>10%</td> </tr> <tr> <td>Off</td> <td>On</td> <td>25%</td> </tr> <tr> <td>On</td> <td>On</td> <td>50% (default)</td> </tr> </tbody> </table>	Dsw1	Dsw2	% Changes in the clos. phase	Off	Off	5% (very sensitive)	On	Off	10%	Off	On	25%	On	On	50% (default)	Dsw3	Dsw4	% Changes in the open. phase	Off	Off	5% (very sensitive)	On	Off	10%	Off	On	25%	On	On	50% (default)						
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Motor power during braking. Dip-switch 1+4= Off/Off/Off/On 	<table border="1"> <thead> <tr> <th>Dsw1</th> <th>Dsw2</th> <th>Dsw3</th> <th>% Power</th> </tr> </thead> <tbody> <tr> <td>Off</td> <td>Off</td> <td>Off</td> <td>20%</td> </tr> <tr> <td>On</td> <td>Off</td> <td>Off</td> <td>30%</td> </tr> <tr> <td>Off</td> <td>On</td> <td>Off</td> <td>40% (default)</td> </tr> <tr> <td>On</td> <td>On</td> <td>Off</td> <td>50%</td> </tr> <tr> <td>Off</td> <td>Off</td> <td>On</td> <td>60%</td> </tr> <tr> <td>On</td> <td>Off</td> <td>On</td> <td>70%</td> </tr> <tr> <td>Off</td> <td>On</td> <td>On</td> <td>80%</td> </tr> <tr> <td>On</td> <td>On</td> <td>On</td> <td>90%</td> </tr> </tbody> </table>	Dsw1	Dsw2	Dsw3	% Power	Off	Off	Off	20%	On	Off	Off	30%	Off	On	Off	40% (default)	On	On	Off	50%	Off	Off	On	60%	On	Off	On	70%	Off	On	On	80%	On	On	On	90%
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N.B.: If the door does not completely close and then opens wider and wider, increase the motor power during slowing down.
 If, with door reaching the closing position, the belt loosens and clatters, decrease the motor power during slowing down (see programming example).

Programming example

To reduce the motor power during slowing down from the preset 40% to 30%, proceed as follows:

- 1 Press the programming button: the programming LED starts to flash rapidly.
- 2 Preset the dip-switch as shown in table 5, part 1: 1-OFF, 2-OFF, 3-OFF, 4-ON.
- 3 Press the programming button.
- 4 The programming LED stays on with fixed light.
- 5 Preset the dip-switch as shown in table 5, part 2: 1-ON, 2-OFF, 3-OFF, 4-irrelevant.
- 6 Press the programming button.
- 7 The programming LED starts to flash rapidly again.
- 8 To modify other functions, repeat the procedure from point 2 or set all dip-switches on OFF and press the button to store the changed functions in memory.
- 9 Preset the dip-switches for "Normal functions" (see table 4).

