


Connections

- Safety

 The electrical connections may only be made by a qualified electrician, who accepts responsibility for ensuring that the electric connections have been carried out in accordance with the applicable standards and this instruction manual.

Always disconnect the power supply when connecting the control box.

Mechanical installation of the control unit must be carried out by persons with the necessary knowledge for the task.

- Installation

The location of the control unit must be selected with regard to the protection class of the enclosure, at least IP54. A heating and/or cooling element should be included if necessary to maintain the operating temperature stated in the technical specification.

The control unit must be securely fixed to a wall or a bracket intended for this purpose, using screw joints. The fixing holes are on the rear or underside of the enclosure.

Cables into and out of the enclosure must have cable entry seals that are approved for use with the particular cable. Cables outside the enclosure must be securely fixed to the surrounding structure. They must not hang loose and there must be no possibility of them catching on passing objects.

- High current

The power supply must be connected via a lockable main switch, and have T10A protection.

Connect the incoming earth to the earth bar.

Check that the power supply and motor voltage are compatible.

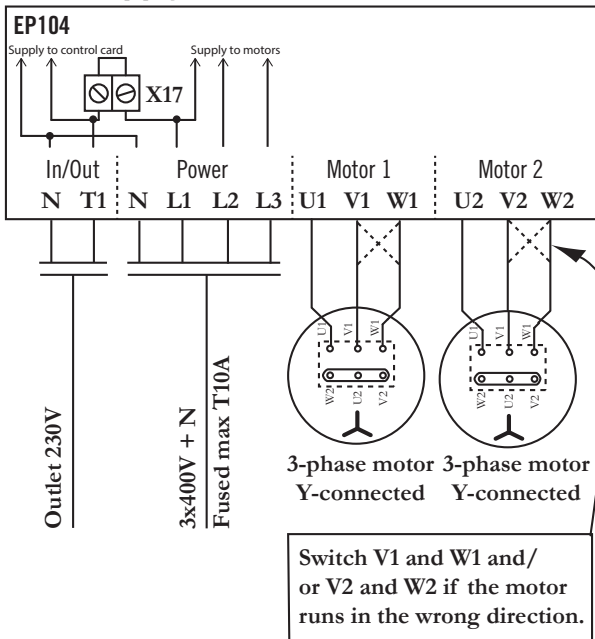
Motors

The largest motor that can be connected is 1.5 kW (3-phase 3x400 V).

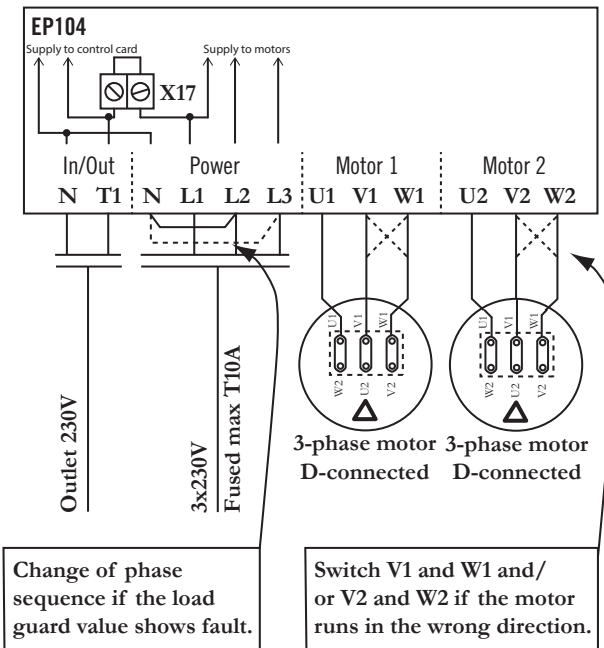
See "Commissioning" for details of how to check the direction of rotation.

Connecting motors to the EP104

Supply 3x400V with neutral

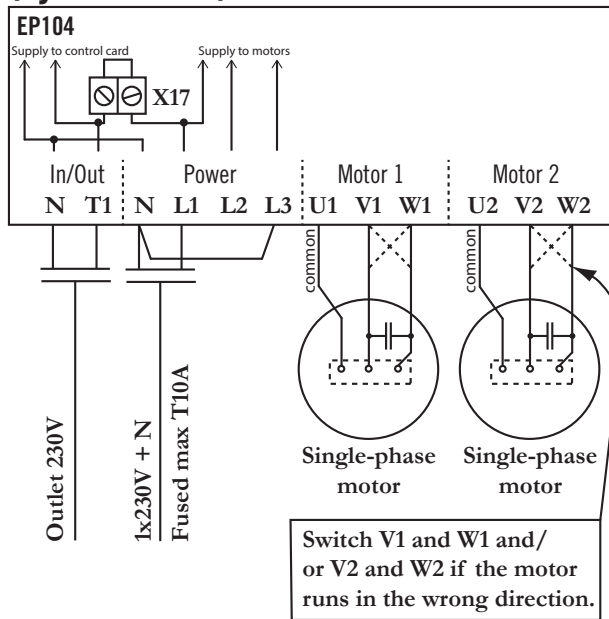


Supply 3x230V without neutral



For information about connecting to the frequency converter, see the instructions for add-in card DB409.

Supply 1x230V with neutral (symmetrical)

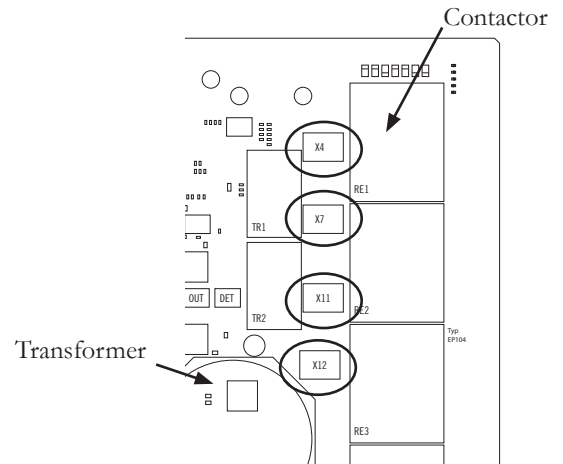


If a symmetrical single-phase motor is used (as shown on the left) make the following changes.

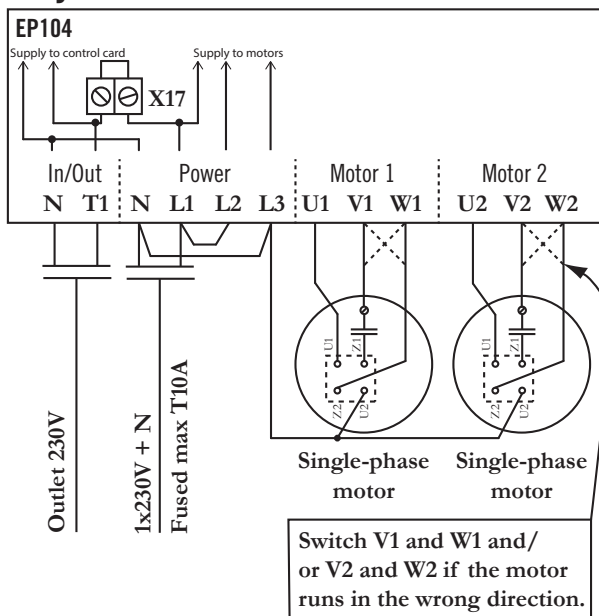
EP104-1: Swap the cable at X12: L1-1 with X12: L1-CUR1.

EP104-2: Remove the cable between X11: L2-1 and X4: L2-2.

Swap the cable at X12: L1-1 with X12: L1-CUR1. Swap the cable at X7: L1-2 with X7:L1-CUR2. See the diagram below for the terminal locations.



Supply 1x230V with neutral (asymmetrical)



• Connecting a safety edge

The safety edge resistor must be installed in the safety edge so that an open-circuit in the resistor or the cable is interpreted as actuation of the device. See the wiring diagram below. SE.C1 and SE.O1 must be used for a safety edge connected to the half to which motor 1 is connected, and SE.C2 and SE.O2 to the half to which motor 2 is connected.

The resistor can be between 1.0-8.2 kΩ with a 1% tolerance and a power capability of at least ½ W. FAAC Nordic AB recommends an impedance of 8.2 kΩ. A safety edge can only be connected in series.

When connecting in series, only one resistor is used in the outermost safety edge, as shown in the wiring diagram below. The maximum number of safety edges connected in series with an impedance of 8.2 kΩ is six per input.

Note that the impedance used for a safety edge must be checked and entered into the EP104 during commissioning, see Commissioning below.

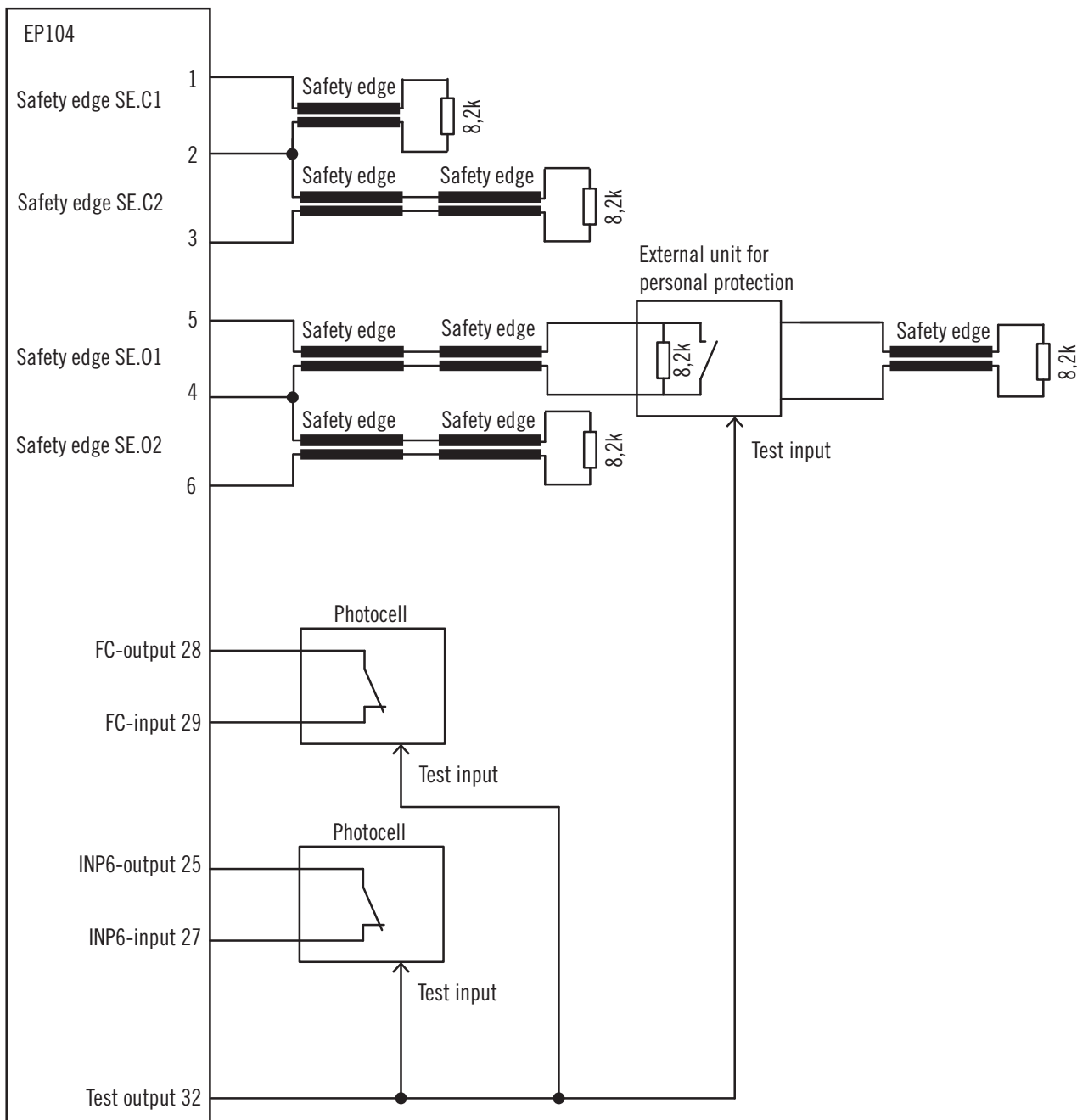
 Other types of impedance safety edge must not be connected directly to the safety edge inputs – they require an external control unit.

See the instruction manual for these safety edges.

Use only safety edges approved by FAAC Nordic AB.

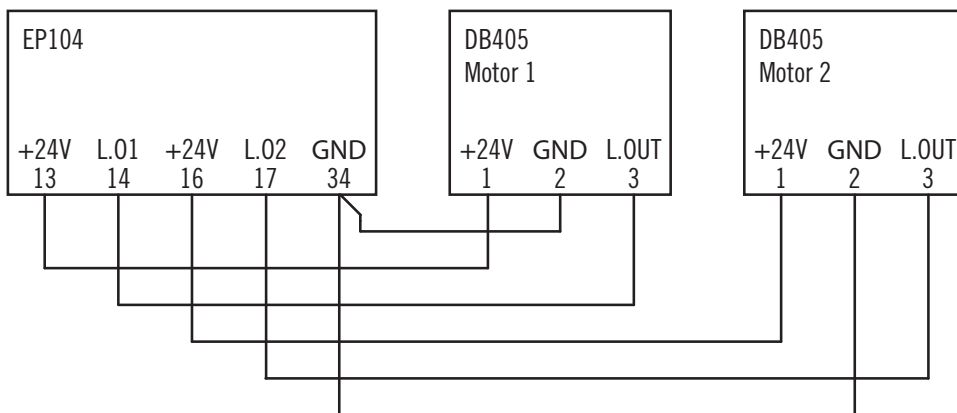
• Connecting safety edges and photocells

The diagram below illustrates how to connect an external safety edge unit.

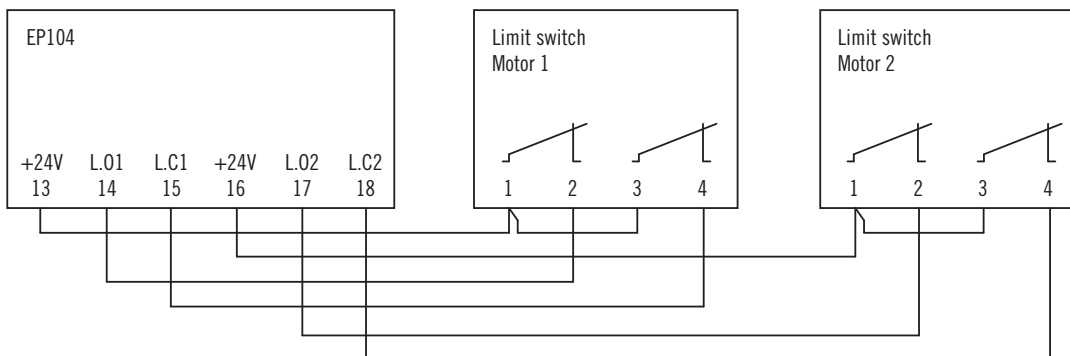


• **Connecting an encoder (electronic limit switch)**

EP104 supports DB405 type encoders. The encoder uses the same terminals as a conventional mechanical limit switch. The two diagrams below illustrate how to connect the encoder, and they also show which is the left and right motor from the point of view of the automatic control unit. Make sure the cable to the encoder does not share the same buried pipe as the motor power supply.

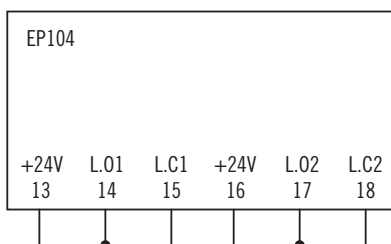


• **Connecting a mechanical limit switch (microswitch)**

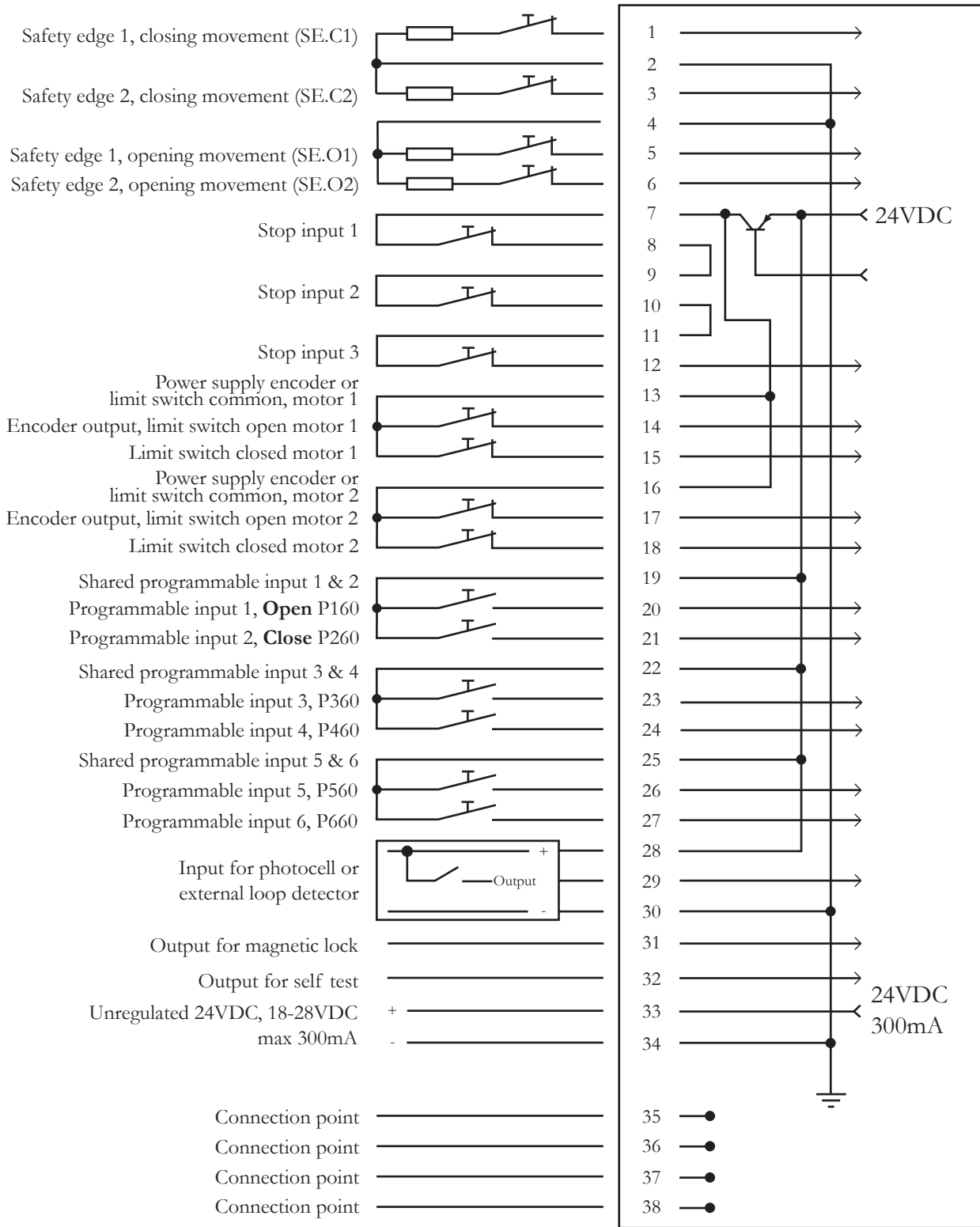


• **Connecting timer control limit switches**


Limit switches can still be used with timer control – they are connected as shown above (mechanical limit switch) but only for the open position. If there is no limit switch, make the connections as shown below. A mechanical stop in the open position must be fitted.



• Signal reference




• Low current

 The safety circuit, safety edge or limit switch must not be connected to, or used for, any other function. If signals from the EP104 are needed, a separate output card must be used.

The connection instructions are the same for all types of application, but not all signals may be needed.

If stop signals are unused, the associated input signals must be jumpered on the terminal block, see "Signal reference".

 Note that the 24 V for the stop circuit must not be combined with other 24 V circuits.



Channel reference

There are seven channel categories, each with its own letter and each handling different functions in the card.

- C-channels: General readout and configuration channels.
- d-channels: Channels relating to the DB402 vehicle detector.
- F-channels: Channels relating to settings for frequency converter, DB409
- L-channels: Channels relating to limit switches and timer control and the DB405 encoder.
- o-channels: Channels relating to output cards DB407 and DB410.
- P-channels: Channels relating to programmable inputs.
- r-channels: Channels relating to function of the DB411 radio card.

There is a reference column for each channel, showing where you can find more details and examples of how to use the channel, and the functions you can access with the channel.

Channels with a grey background are readout channels so they cannot be changed.

The  symbol means that the channel is a safety setting, and any change in value must be documented in the log book, with a name and date.

• General, C-channels

General readout channels

No.	Name	Range	Factory	Setting
C001	Software version			
C002	Release of software version			
C005	Voltage after stop circuit	00.0 – 30.0 V		
C014	Number of openings x1	000-999		
C015	Number of openings x1000	000-999		
C019	Time remaining to automatic closing	0.00-9.59 minutes		
C020	Most recent cause of motor stop			
	01	Limit switch motor 1 open		
	02	Limit switch motor 1 closed		
	03	Limit switch motor 2 open		
	04	Limit switch motor 2 closed		
	10	Stop		
	21	Photocell during opening movement		
	22	Photocell during closing movement		
	31	Loop 1 during opening movement		
	32	Loop 1 during closing movement		
	33	Loop 2 during opening movement		
	34	Loop 2 during closing movement		
	41	Safety edge opening reverse		
	42	Safety edge opening stop		
	43	Safety edge closing reverse		
	44	Safety edge closing stop		
	51	Photocell input 6 opening		
	52	Photocell input 6 closing		
	90	Mains voltage loss		
	91	Low 24VDC		

General configuration channels

No.	Name	Range	Factory	Setting
▲ C033	Pulse/hold-to-run	0 - 5	5	
	0	Open and close with hold-to-run and load guard inactive		
	1	Open with pulse and close with hold-to-run and load guard active		
	2	Open with hold-to-run and close with pulse and load guard active		
	3	Open and close with pulse and load guard active		
	4	Open and close with hold-to-run and load guard active		
	5	Service mode, only internal open/close buttons with hold-to-run. Enables L001/2 to be set to 4, operation without limit switch.		
C063	Reverse priority during movement	0 - 3	1	
	0	None		
	1	Open		
	2	Close		
	3	Open and close		

Safety edge

No.	Name	Range	Factory	Setting
▲ C101	Safety edge acknowledgement SE.C1	0 – 1	0	
	0	Disabled		
	1	Enabled		
▲ C102	Function of output for external protection	0 – 4	0	
	0	Check disabled, open output, setting of C113, C123, C133, C143, C343, P643 is disabled.		
	1	Closed to GND on activation, normally open.		
	2	Closed to +24 VDC on activation, normally open.		
	3	Open on activation, normally closed to GND.		
	4	Open on activation, normally closed to +24 VDC.		
▲ C103	Function of safety edge input during test of external safety edge unit	1 – 2	1	
	1	Low resistance during test		
	2	High resistance during test		
▲ C104*	Connection and safety edge function	1 – 2	1	
	1	SE.C1 or SE.C2 can be connected to either motor 1 or motor 2. SE.O1 or SE.O2 can be connected to either motor 1 or motor 2. Both safety edges reverse/stop an active motor		
	2	SE.C1 and SE.O1 must be connected to motor 1 SE.C2 and SE.O2 must be connected to motor 2 The safety edge function is attached to the motor concerned		
C105	Halved speed or activated safety edge (Only when using a frequency converter)	0 - 1	0	
	0	Disabled		
	1	Active		
▲ C111	Selects function for safety edge SE.C1	0-2	2	
	0	SE.C1 disabled		
	1	Limits according to set value in C115		
	2	Fixed limits between 5 kohm and 15 kohm		
▲ C112	Reverse/stop with activated safety edge SE.C1 (KSS)	1 - 2	1	
	1	Reverse		
	2	Stop		
▲ C113	Control of external protection connected to SE.C1	0 - 1	1	
	0	No check		
	1	Test of protection connected to SE.C1		
C114	Reading impedance SE.C1	00.0-99.9 kΩ		
▲ C115	Setting impedance value for safety edge SE.C1 Set to 1 only at C111.	1.0-9.9 kΩ	8.2	

* = Only displayed if EP104-2

No.	Name	Range	Factory	Setting
▲ C121	Selects function for safety edge SE.C2	0-2	2	
	0	SE.C2 disabled		
	1	Limits according to set value in C125		
	2	Fixed limits between 5 kohm and 15 kohm		
▲ C122	Reverse/stop with activated safety edge SE.C2	1 – 2	1	
	1	Reverse		
	2	Stop		
▲ C123	Control of external protection connected to SE.C2	0 - 1	1	
	0	No check		
	1	Test of protection connected to SE.C2		
C124	Reading impedance SE.C2	00.0-99.9 kΩ		
▲C125*	Setting impedance value for safety edge SE.C2 Set to 1 only at C121.	1.0-9.9 kΩ	8.2	
▲ C131	Selects function for SE.O1	0-2	0	
	0	SE.O1 disabled		
	1	Limits according to set value in C135		
	2	Fixed limits between 5 kohm and 15 kohm		
▲ C132	Reverse/stop with activated safety edge SEO1	1 – 2	1	
	1	Reverse		
	2	Stop		
▲ C133	Control of external protection connected to SE.O1	0 - 1	1	
	0	No check		
	1	Test of protection connected to SE.O1		
C134	Reading impedance SE.O1	00.0-99.9 kΩ		
▲C135	Setting impedance value for safety edge SE.O1. Set to 1 only at C131.	1.0-9.9 kΩ	8.2	
▲ C141	Selects function for SE.O2	0-2	0	
	0	SE.O2 disabled		
	1	Limits according to set value in C135		
	2	Fixed limits between 5 kohm and 15 kohm		
▲ C142	Reverse/stop with activated safety edge SE.O2	1 – 2	1	
	1	Reverse		
	2	Stop		
▲ C143	Control of external protection connected to SE.O2	0 - 1	1	
	0	No check		
	1	Test of protection connected to SE.O2		
C144	Reading impedance SE.O2	00.0-99.9 kΩ		
▲C145	Setting impedance value for safety edge SE.O2. Set to 1 only at C141.	1.0-9.9 kΩ	8.2	

Load guard and motor settings

No.	Name	Range	Factory	Setting
▲ C200	Load guard function	0 – 4	3	
	0	Disabled Service and troubleshooting only		
	1	Reverse when closing, stop when opening		
	2	Stop when closing and reverse when opening		
	3	Reverse when closing and opening		
	4	Stop when closing and opening		
▲ C202	Type of power supply	0 - 5	0	
	0	3x400 V with neutral		
	1	3x230 V without neutral		
	2	1x230 V with neutral, asymmetric		
	3	3x400 V without neutral (see separate instructions)		
	4	1x230 V with neutral, Frequency converter (see separate instructions DB409)		
	5	1x230 V with neutral, symmetric		
C205	Load guard for personal protection active during the closing movement	0-1	1	
	0	Disabled		
	1	Active		
▲ C211	Load guard delay	0.01-2.50 seconds	0.06	
▲ C212	Load guard, connection delay on start, all starts	0.1-2.5 seconds	1.0	
▲ C221	Motor protection delay	3.0-5.0 seconds	3.0	
▲ C230*	Set motor power readout for personal protection, motor 1	0.00 and 0.12-0.35 kW	0.20	
C231	Motor power readout, motor 1	0.00-1.99 kW		
▲ C232	Set load guard limit for motor 1 opening	0.05-1.99 kW	0.70	
▲ C233	Set load guard limit for motor 1 closing	0.05-1.99 kW	0.70	
▲ C240*	Set motor power readout for personal protection, motor 2	0.00 and 0.12-0.35 kW	0.20	
C241	Motor power readout, motor 2	0.00-1.99 kW		
▲ C242	Set load guard limit for motor 2 opening	0.05-1.99 kW	0.70	
▲ C243	Set load guard limit for motor 2 closing	0.05-1.99 kW	0.70	
C251	Motor current readout, motor 1	0.0-20.0A		
▲ C252	Set motor current readout, motor 1 opening	0.0 and 0.5-6.0A	0,8	
▲ C253	Set motor current readout, motor 1 closing	0.0 and 0.5-6.0A	0,8	
C261	Motor current readout, motor 2	0.0-20.0A		
▲ C262	Set motor current readout, motor 2 opening	0.0 and 0.5-6.0A	0,8	
▲ C263	Set motor current readout, motor 2 closing	0.0 and 0.5-6.0A	0,8	
C271	Power factor readout motor 1	0.00-0.99 cos φ		
C281	Power factor readout motor 2	0.00-0.99 cos φ		

* = Not displayed if C202=4, Frequency converter

Photocell

No.	Name	Range	Factory	Setting
C340	Safety function in closing movement	0 – 3	1	
	0	Disabled		
	1	Reverse to fully open		
	2	Stop with automatic restart of automatic closing		
	3	Stop, wait for new control signal or time in C520 and thereafter automatic closing.		
C341	Safety during run-on time or disengagement angle in closing movement.	0 - 1	1	
	0	Disabled when both halves are in run-on or disengagement angle		
	1	Activated according to C340		
C342	Safety function in opening movement	0 – 4	0	
	0	Disabled		
	1	Reverse to fully closed.		
	2	Stop with automatic restart of automatic closing		
	3	Stop, wait for new control signal or time in C520 and thereafter automatic closing.		
	4	Stop with restart of opening		
C343	Check of external protection connected to PHOTO	0 - 1	1	
	0	No check		
	1	Test of protection connected to PHOTO		
C351	PHOTO closing	0 – 1	0	
	0	Disabled		
	1	Enabled and subordinated to C340		
C354	Type of closing with PHOTO	1 – 2	2	
	1	Close immediately if PHOTO is clear		
	2	Open first then close if PHOTO is clear		

General time channels.

No.	Name	Range	Factory	Setting
C401**	Running time readout, motor 1	000-999 seconds		
C402**	Running time readout, motor 2	000-999 seconds		
C403**	Setting limited running time (Not used with encoder)	001-999 seconds	001	
C412**	Set limited opening, motor 1 with limit switch	00.3-99.9 seconds	05.0	
C414**	Set limited opening, motor 2 with limit switch	00.3-99.9 seconds	05.0	
C422**	Run-on time following limit switch open, motor 1	0.00-7.99 seconds	0.00	
C423**	Run-on time following limit switch closed, motor 1	0.00-7.99 seconds	0.00	
C432**	Run-on time following limit switch open, motor 2	0.00-7.99 seconds	0.00	
C433**	Run-on time following limit switch closed, motor 2	0.00-7.99 seconds	0.00	
▲ C436	Type of stop during run-on time when closing, subordinated to C448 and C449	0 - 3	3	
	0	Time		
	1	Time or load guard		
	2	Time or safety edge		
	3	Time, load guard or safety edge		
▲ C448	Safety edge reverse during run-on time in the closing movement, C423, C433, L117, L127	0 - 2	2	
	0	Function disabled		
	1	Safety edge reverse during run-on time		
	2	Safety edge reverse during run-on time and during the time in C492		
▲ C449	Reversing during run-on time with triggered load guard, C423, C433, L117, L127	0 - 1	1	
	0	Disabled		
	1	Reversing in closing movement		
C460	Delay of open motor 2 and close motor 1. Used with magnetic locks or if the door halves overlap	0.1-9.9 seconds	0.1	
C470	Delay before first motor starts, used for magnetic locks that need to lose residual magnetisation	0.00-0.99 seconds	0.00	
▲ C492	Reverse delay if PHOTO, SL1 or SL2 or control signal are activated.	0.1-4.0 seconds	0.8	
▲ C493	Reverse delay if safety edge or load guard are activated	0.03-2.00 seconds	0.10	
▲ C494	Reverse time for protection in the opening movement, safety edge and load guard	0.1-2.0 seconds	1.0	
C495	Engagement time for brake, motor 1	00, 10-50 ms	00	
C496	Engagement time for brake, motor 2	00, 10-50 ms	00	

** = Only displayed if L001 and/or L002 are set to 2 or 3.

Automatic closing

No.	Name	Range	Factory	Setting
C500	Automatic closing time	0.00-9.59 minutes	0.00	
C501	Short automatic closing time	0.0-9.9 seconds	0.0	
C510	Time for LOOP1, LOOP2 and PHOTO closing during passage	00-99 seconds	00	
C520	Blocking time for automatic closing after the stop button is pressed	0.00 and 0.20-9.59 minutes	0.00	
C591	Direction sensing for internal closing pulse	00 - 14	00	
	00	Disabled		
	01	Presence detection, LOOP1 must first be activated, signal when LOOP1 is disabled.		
	02	Presence detection, LOOP2 must first be activated, signal when LOOP2 is disabled.		
	03	Presence detection, LOOP1 or LOOP2 must first be activated, signal when either LOOP1 or LOOP2 is activated.		
	04	Presence detection, PHOTO must first be activated, signal when PHOTO is disabled.		
	05	Presence detection, PHOTO and LOOP1 must first be activated simultaneously, signal when either PHOTO or LOOP1 is clear.		
	06	Presence detection, PHOTO and LOOP2 must first be activated simultaneously, signal when either PHOTO or LOOP2 is clear.		
	07	Presence detection, PHOTO LOOP1 and LOOP2 must first be activated simultaneously, signal when either PHOTO, LOOP1 or LOOP2 is clear.		
	08	Presence detection, LOOP1 and LOOP2 must first be activated simultaneously, signal when either LOOP1 or LOOP2 is clear.		
	09	Direction sensing, LOOP1 must first be activated, during the time LOOP2 must be activated, then LOOP1 must be disabled, signal when LOOP2 is disabled.		
	10	Direction sensing, LOOP1 must first be activated, during the time PHOTO must be activated, then LOOP1 must be disabled, signal when PHOTO is disabled.		
	11	Direction sensing, LOOP2 must first be activated, during the time LOOP1 must be activated, then LOOP2 must be disabled, signal when LOOP1 is disabled.		
	12	Direction sensing, LOOP2 must first be activated, during the time PHOTO must be activated, then LOOP2 must be disabled, signal when PHOTO is disabled.		
	13	Direction sensing, PHOTO must first be activated, during the time LOOP1 must be activated, then PHOTO must be disabled, signal when LOOP1 is disabled.		
	14	Direction sensing, PHOTO must first be activated, during the time LOOP2 must be activated, then PHOTO must be disabled, signal when LOOP2 is disabled.		

Interlock block

No.	Name	Range	Factory	Setting
C664	Block of local door	0 – 3	0	
	0	No block		
	1	Block of open on local door until remote door is closed		
	2	Block of open on local door until remote door is open		
	3	Blocking of close on local door until remote door is closed		
C665	In block of local door	0 – 3	3	
	0	Local door does not remember open and stop, stop does not cancel block of remote door		
	1	Local door remembers open and stop, stop does not cancel block of remote door		
	2	Local door does not remember open and stop, stop cancels block of remote door		
	3	Local door remembers open and stop, stop cancels block of remote door		
C695	Network number for communication	0 – 2	0	
	0	Disabled		
	1	Automatic control unit no. 1 in communication		
	2	Automatic control unit no. 2 in communication		

Service channels

No.	Name	Range	Factory	Setting
C900	Service channel, for service personnel only Random number	000-999		
C901	Service channel, for service personnel only	00-99		
C902	Service channel, for service personnel only, checksum	0000-FFFF		
C903	Error code list showing the most recent error messages.			
	0000	Start of the list, followed by the oldest error message		
	...	Error messages, use + and - to step up or down.		
	9999	End of the list, after the last error message		
C999	Show only channels that differ from factory set values		0	
	0	Disabled		
	1	Shows only channels that differ from factory settings, use + and - to step up or down. The button to the far left is used for rapid advance, which has no function in this mode.		



- DB402, Vehicle detector, d-channels

Vehicle loop 1

No.	Name	Range	Factory	Setting
d100	Loop 1 used	0 – 1	0	
	0	Input disabled		
	1	Input enabled		
d101	Loop reading x1	000-999		
d102	Loop reading x1000	00-99		
d103	Activation by passing vehicle	000-999		
d110	Detection limit for a vehicle in the loop	05-99	15	
d111	Difference between on and off in the loop	00-50	03	
d120	Loop presence reset	000 and 005-240 minutes	120	
d121	Fast loop presence reset	00-99 sec	00	
d131	Compensation for activation from door half motor 1 on the loop in the closed position	00-50	03	
d132	Compensation for activation from door half motor 2 on the loop in the closed position	00-50	03	
d140	Safety function in closing movement	0 - 4	1	
	0	Disabled		
	1	Reverse		
	2	Stop with automatic restart of automatic closing		
	3	Stop without automatic restart of automatic closing, wait for new control signal		
	4	Safety only in open position. Used when the gate passes over the loop in the closing movement.		
d141	Safety during run-on time or disengagement angle in closing movement.	0 – 1	1	
	0	Disabled		
	1	Activated according to P140		
d142	Safety function in opening movement	0 - 4	0	
	0	Disabled		
	1	Reverse to fully closed		
	2	Stop with automatic restart of automatic closing		
	3	Stop without automatic restart of automatic closing, wait for new control signal		
	4	Safety only in closed position. Used when the gate passes over the loop in the opening movement.		
d151	Loop-based closing	0 - 1	0	
	0	Disabled		
	1	Active		
d154	Type of closing	1 - 2	2	
	1	Close immediately when loop is clear		
	2	Continue to fully open, then close		
d160	Control function	0 - 1	0	
	0	Disabled		
	1	Open		

No.	Name	Range	Factory	Setting
d161	Type of control signal when activated	1 - 2	1	
	1	Pulse		
	2	Constant signal when loop is activated		
d162	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motors 1 and 2		
d163	Limited opening	0 - 1	0	
	0	Disabled		
	1	Opening for the time set in channels C412 and C414		
d170	Allows the opening function, via LOOP1, using a programmable input.	0 - 6	0	
	0	Disabled, normal opening/closing function. (Programmable input has no function for LOOP1)		
	1	Opening possible only if there is a signal at programmable input 1		
	2	Opening possible only if there is a signal at programmable input 2		
	3	Opening possible only if there is a signal at programmable input 3		
	4	Opening possible only if there is a signal at programmable input 4		
	5	Opening possible only if there is a signal at programmable input 5		
	6	Opening possible only if there is a signal at programmable input 6		
d175	Opening via loop after activation for the set time, the loop will not open the gate until it has been activated for the set time.	0.0-9.0 sec	0.0	
d190	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Sends a normal open signal to the remote door		

Vehicle loop 2

No.	Name	Range	Factory	Setting
d200	Loop 2 used	0 - 1	0	
	0	Input disabled		
	1	Input enabled		
d201	Loop reading x1	000-999		
d202	Loop reading x1000	00-99		
d203	Activation by passing vehicle	000-999		
d210	Detection limit for a vehicle in the loop	05-99	15	
d211	Difference between on and off in the loop	00-50	03	
d220	Loop presence reset	000 and 005-240 minutes	120	
d221	Fast loop presence reset	00-99 sec	00	
d231	Compensation for activation from door half motor 1 on the loop in the closed position	00-50	03	
d232	Compensation for activation from door half motor 2 on the loop in the closed position	00-50	03	
d240	Safety function in closing movement	0 - 4	1	
	0	Disabled		
	1	Reverse		
	2	Stop with automatic restart of automatic closing		
	3	Stop without automatic restart of automatic closing, wait for new control signal		
	4	Safety only in open position. Used when the gate passes over the loop in the closing movement.		
d241	Safety during run-on time or disengagement angle in closing movement.	0 - 1	1	
	0	Disabled		
	1	Activated according to P240		
d242	Safety function in opening movement	0 - 4	0	
	0	Disabled		
	1	Reverse to fully closed		
	2	Stop with automatic restart of automatic closing		
	3	Stop without automatic restart of automatic closing, wait for new control signal		
	4	Safety only in closed position. Used when the gate passes over the loop in the opening movement.		
d251	Loop-based closing	0 - 1	0	
	0	Disabled		
	1	Enabled		
d254	Type of closing with loop	1 - 2	2	
	1	Close immediately when loop is clear		
	2	Open fully first, then close		
d260	Control function	0 - 1	0	
	0	Disabled		
	1	Open		

No.	Name	Range	Factory	Setting
d261	Type of control signal when activated	1 - 2	1	
	1	Pulse		
	2	Signal when loop is activated		
d262	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motors 1 and 2		
d263	Limited opening	0 - 1	0	
	0	Disabled		
	1	Opening for the time set in channels C412 and C414		
d270	Allows the opening function, via LOOP2, using a programmable input.	0 - 6	0	
	0	Disabled, normal opening/closing function. (Programmable input has no function for LOOP2)		
	1	Opening possible only if there is a signal at programmable input 1		
	2	Opening possible only if there is a signal at programmable input 2		
	3	Opening possible only if there is a signal at programmable input 3		
	4	Opening possible only if there is a signal at programmable input 4		
	5	Opening possible only if there is a signal at programmable input 5		
	6	Opening possible only if there is a signal at programmable input 6		
d275	Opening via loop after activation for the set time, the loop will not open the gate until it has been activated for the set time.	0.0-9.9 sec	0.0	
d290	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Sends a normal open signal to the remote door		

- DB409, Frequency Converter Board, F-channels

No.	Name	Range	Factory	Setting
F001	Communication with frequency converter	0 - 1	1	
	0	Communication disabled		
	1	Communication activated		
F002	Acceleration time from closed position motor 1 and 2 (from 0-100Hz)	0.5-9.9 seconds	1.0 sec	
F003	Acceleration time in all movements except at closed position motor 1 and 2 (from 0-100Hz)	0.5-9.9 seconds	3.0 sec	
F004	Acceleration time when P500 is set to 2 and the input is activated, battery backup	5.0-12.0 seconds	7.0 sec	
F005	Retardation time with limit switch and change of direction for motor 1 and 2 (from 100-0Hz)	0.5-9.9 seconds	3.0 sec	
F006	Retardation time with photocell and vehicle loops for motor 1 and 2 (from 100-0Hz)	0.5-9.9 seconds	1.0 sec	
F008	Low-speed frequency for opening movement	5-20 Hz	10 Hz	
F009	Low-speed frequency for closing movement	5-20Hz	10 Hz	
F012	Opening frequency / Opening speed for motor 1	21-99Hz	60Hz	
F013	Closing frequency / Closing speed for motor 1	21-99Hz	30Hz	
F014*	Increase in limit in L114 as speed will decrease during the opening movement, motor 1. (Only when using a frequency converter)	0-60	0	
F015*	Increase in limit in L115 as speed will decrease during the closing movement, motor 1. (Only when using a frequency converter)	0-60	0	
F022	Opening frequency / Opening speed for motor 2	21-99Hz	60Hz	
F023	Closing frequency / Closing speed for motor 2	21-99Hz	30Hz	
F024*	Increase in limit in L124 as speed will decrease during the opening movement, motor 2. (Only when using a frequency converter)	0-60	0	
F025*	Increase in limit in L125 as speed will decrease during the closing movement, motor 2. (Only when using a frequency converter)	0-60	0	

F-channels are viewed only if C202=4, frequency converter

No.	Name	Range	Factory	Setting
F030*	Choice of ratio for motor 1	0 - 7	0	
	0	Not selected, in this position the motor only rotates at 25Hz		
	1	MK with pulleys 40/71 (ratio 1318:1)		
	2	MK with pulleys 50/71 (ratio 1098:1)		
	3	MK with pulleys 71/71 (ratio 791:1)		
	4	MK with pulleys 100/71 (ratio 565:1)		
	5	MK with pulleys 125/71 (ratio 456:1)		
	6	MK with pulleys 140/71 (ratio 409:1)		
	7	MT (ratio 791:1)		
F031*	Measured ratio motor 1. Only when F030=0.	0-2000	0	
F040*	Choice of ratio for motor 2	0 - 7	0	
	0	Not selected, in this position the motor only rotates at 25Hz		
	1	MK with pulleys 40/71 (ratio 1318:1)		
	2	MK with pulleys 50/71 (ratio 1098:1)		
	3	MK with pulleys 71/71 (ratio 791:1)		
	4	MK with pulleys 100/71 (ratio 565:1)		
	5	MK with pulleys 125/71 (ratio 456:1)		
	6	MK with pulleys 140/71 (ratio 409:1)		
	7	MT (ratio 791:1)		
F041*	Measured ratio motor 2. Only when F040=0.	0-2000	0	

* = Appears only when L001 and/or L002 are set to 1 encoder.
F-channels are viewed only if C202=4, frequency converter

- Limit switch, L-channels

No.	Name	Range	Factory	Setting
L001	Choice of limit switch type for motor 1	0-3	0	
	0	Disabled		
	1	Encoder		
	2	Limit switch		
	3	Time		
	4	Hold-to-run without limit switches. NOTE! Only one half at a time can be run. C033 must be set to 5.		
L002	Choice of limit switch type for motor 2	0-3	0	
	0	Disabled		
	1	Encoder		
	2	Limit switch		
	3	Time		
	4	Hold-to-run without limit switches. NOTE! Only one half at a time can be run. C033 must be set to 5.		
L110*	Position of motor 1, viewed from the motor side	0-2	1	
	0	Disabled		
	1	Left		
	2	Right		
L111*	Position readout, motor 1	000-360 degrees		
L112*	Limit for open position, motor 1	145-330 degrees	260	
L113*	Limit for closed position, motor 1	015-180 degrees	90	
L114*	Limits when speed will decrease during the opening movement, motor 1. (Only for frequency converter and encoder)	0-99 degrees		
L115*	Limits when speed will decrease during the closing movement, motor 1. (Only for frequency converter and encoder)	0-99 degrees		
L116*	Degrees for limited opening, motor 1.	0-200 degrees	45	
L117*	Degrees for the disconnection of safety edges, load guard and photocells from the end of the closing movement, motor 1 in combination with C436, C341 and C448	0-30 degrees	0	
L118*	Degrees for the disconnection of vehicle loops from the end of the closing movement, motor 1 in combination with d141 or d241.	0-45 degrees	0	

* = Only when L001 are set to 1.

No.	Name	Range	Factory	Setting
L120*	Position of motor 2, viewed from the motor side	0-2	2	
	0	Disabled		
	1	Left		
	2	Right		
L121*	Position readout, motor 2	000-360 degrees		
L122*	Limit for open position, motor 2	145-330 degrees	260	
L123*	Limit for closed position, motor 2	015-180 degrees	90	
L124*	Limits when speed will decrease during the opening movement, motor 2. (Only when using a frequency converter)	0-99 degrees		
L125*	Limits when speed will decrease during the closing movement, motor 2. (Only when using a frequency converter)	0-60 degrees	45	
L126*	Degrees for limited opening, motor 2	0-200 degrees	45	
L127*	Degrees for the disconnection of safety edges, load guard and photocells from the end of the closing movement, motor 2 in combination with C436, C341 and C448	0-30 degrees	0	
L128*	Degrees for the disconnection of vehicle loops from the end of the closing movement, motor 2 in combination with d141 or d241	0-45 degrees	0	
L311	Time readout for motor 1	00.1-99.9 seconds		
L312**	Set time for motor 1	00.1-99.9 seconds	00.1	
L321	Time readout for motor 2	00.1-99.9 seconds		
L322**	Set time for motor 2	00.1-99.9 seconds	00.1	

* = Only displayed if L002 are set to 1.

** = Only displayed if L001 and/or L002 are set to 2 or 3.

- DB407, DB410, Output Board, o-channels

Programmable output 1

No.	Name	Range	Factory	Setting
o100	Function of output 1	0 - 4	1	
	0	Disabled		
	1	Position indication/Movement/Warning. Signal as configured in o110 – o122		
	2	Presence detection/Direction sensing. Signal as configured in o191		
	3	Lock		
	4	Alarm output Signal as configured in o130 – o142		
o110	Open position	0 - 1	1	
	0	Disabled		
	1	Constant signal		
o111	Mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o112	Closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o113	Movement	0 - 4	4	
	0	Disabled		
	1	Constant signal in the opening movement		
	2	Constant signal in the closing movement		
	3	Constant signal in the opening and closing movement		
	4	No signal during movement, used in combination with o110, o111 and o112.		
o114	Delayed switch-off Switch off after the specified time For example to switch off lighting a specified time after closing	0.00-9.59 minutes	0.00	
o120	Warning time before start	0.00-9.59 minutes	0.00	
o121	Warning function in combination with o120	1 - 4	2	
	1	Constant signal before automatic closing		
	2	Constant signal before park and automatic closing		
	3	Constant signal before close signal, park and automatic closing		
	4	Constant signal before all signals		
o122	Function during warning time	1 - 2	1	
	1	Output signal disabled during warning in other output		
	2	Output signal as configured in o110-o113		

No.	Name	Range	Factory	Setting
o130*	Alarm if there is an error as configured in o131-o139. The alarm is activated for at least the time set in this channel.	0.00-9.59 minutes	0.00	
o131*	Alarm for faulty safety edge. Time as in o130.	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o132*	Alarm for critical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o133*	Alarm if stop circuit interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o134*	Alarm if door open	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o135*	Alarm if door is in mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o136*	Alarm if door is in closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o137*	Alarm if vehicle loop 1 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o138*	Alarm if vehicle loop 2 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o139*	Alarm if photocell interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o142*	Alarm for uncritical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o183	Inversion of contact function for output	1 - 2	1	
	1	Normally open, NO		
	2	Normally closed, NC		

* = Only when o100 is set to 4.

No.	Name	Range	Factory	Setting
o191	Function when LOOP2, LOOP2 or PHOTO activated	01 - 14	01	
	01	Presence detection Signal when LOOP1 is activated, remains until LOOP1 is clear.		
	02	Presence detection Signal when LOOP2 is activated, remains until LOOP2 is clear.		
	03	Presence detection Signal when both LOOP1 and LOOP2 are activated, remains until either LOOP1 or LOOP2 is clear.		
	04	Presence detection Signal when PHOTO is activated, remains until PHOTO is clear.		
	05	Presence detection Signal when PHOTO and LOOP1 are activated, remains until either PHOTO or LOOP1 is clear.		
	06	Presence detection Signal when PHOTO and LOOP2 are activated, remains until either PHOTO or LOOP2 is clear.		
	07	Presence detection Signal when PHOTO, LOOP1 and LOOP2 are activated, remains until either PHOTO, LOOP1 or LOOP2 is clear.		
	08	Presence detection Signal when either LOOP1 or LOOP2 is activated, remains until either LOOP1 or LOOP2 is clear.		
	09	Direction sensing Signal when first LOOP1 and then LOOP2 are activated. The signal remains until LOOP2 is clear.		
	10	Direction sensing Signal when first LOOP1 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	11	Direction sensing Signal when first LOOP2 and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	12	Direction sensing Signal when first LOOP2 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	13	Direction sensing Signal when first PHOTO and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	14	Direction sensing Signal when first PHOTO and then LOOP2 are activated. The signal remains until LOOP2 is clear.		

Programmable output 2

No.	Name	Range	Factory	Setting
o200	Function of output 2	0 - 4	1	
	0	Disabled		
	1	Position indication/Movement/Warning. Signal as configured in o210 – o222		
	2	Presence detection/Direction sensing. Signal as configured in o291		
	3	Lock		
	4	Alarm output Signal as configured in o230 – o242		
o210	Open position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o211	Mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o212	Closed position	0 - 1	1	
	0	Disabled		
	1	Constant signal		
o213	Movement	0 - 4	4	
	0	Disabled		
	1	Constant signal in the opening movement		
	2	Constant signal in the closing movement		
	3	Constant signal in the opening and closing movement		
	4	No signal during movement, used in combination with o210, o211 and o212.		
o214	Delayed switch-off Switch off after the specified time For example to switch off lighting a specified time after closing	0.00-9.59 minutes	0.00	
o220	Warning time before start	0.00-9.59 minutes	0.00	
o221	Warning function in combination with o220	1 - 4	2	
	1	Constant signal before automatic closing		
	2	Constant signal before park and automatic closing		
	3	Constant signal before close signal, park and automatic closing		
	4	Constant signal before all signals		
o222	Function during warning time	1 - 2	1	
	1	Output signal disabled during warning in other output		
	2	Output signal as configured in o210-o213		

No.	Name	Range	Factory	Setting
o230*	Alarm if there is an error as configured in o231-o239. The alarm is activated for at least the time set in this channel.	0.00-9.59 minutes	0.00	
o231*	Alarm for faulty safety edge. Time as in o230.	0 - 1	0	
	0	Constant signal		
	1	Active		
o232*	Alarm for uncritical error message in display	0 - 1	0	
	0	Constant signal		
	1	Active		
o233*	Alarm if stop circuit interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o234*	Alarm if door open	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o235*	Alarm if door is in mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o236*	Alarm if door is in closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o237*	Alarm if vehicle loop 1 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o238*	Alarm if vehicle loop 2 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o239*	Alarm if photocell interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o242*	Alarm for uncritical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o283	Inversion of contact function for output	1 - 2	1	
	1	Normally open, NO		
	2	Normally closed, NC		

* = Only when o200 is set to 4.

No.	Name	Range	Factory	Setting
o291	Function when SL.1, SL.2 or photocell/loop activated	01 - 14	01	
	01	Presence detection Signal when LOOP1 is activated, remains until LOOP1 is clear.		
	02	Presence detection Signal when LOOP2 is activated, remains until LOOP2 is clear.		
	03	Presence detection Signal when both LOOP1 and LOOP2 are activated, remains until either LOOP1 or LOOP2 is clear.		
	04	Presence detection Signal when PHOTO is activated, remains until PHOTO is clear.		
	05	Presence detection Signal when PHOTO and LOOP1 are activated, remains until either PHOTO or LOOP1 is clear.		
	06	Presence detection Signal when PHOTO and LOOP2 are activated, remains until either PHOTO or LOOP2 is clear.		
	07	Presence detection Signal when PHOTO, LOOP1 and LOOP2 are activated, remains until either PHOTO, LOOP1 or LOOP2 is clear.		
	08	Presence detection Signal when either LOOP1 or LOOP2 is activated, remains until either LOOP1 or LOOP2 is clear.		
	09	Direction sensing Signal when first LOOP1 and then LOOP2 are activated. The signal remains until LOOP2 is clear.		
	10	Direction sensing Signal when first LOOP1 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	11	Direction sensing Signal when first LOOP2 and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	12	Direction sensing Signal when first LOOP2 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	13	Direction sensing Signal when first PHOTO and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	14	Direction sensing Signal when first PHOTO and then LOOP2 are activated. The signal remains until LOOP2 is clear.		

Programmable output 3

No.	Name	Range	Factory	Setting
o300	Function of output 3	0 - 4	1	
	0	Disabled		
	1	Position indication/Movement/Warning. Signal as configured in o310 – o322		
	2	Presence detection/Direction sensing. Signal as configured in o391		
	3	Lock		
	4	Alarm output Signal as configured in o330 – o342		
o310	Open position	0 - 1	1	
	0	Disabled		
	1	Constant signal		
o311	Mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o312	Closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o313	Movement	0 - 4	4	
	0	Disabled		
	1	Constant signal in the opening movement		
	2	Constant signal in the closing movement		
	3	Constant signal in the opening and closing movement		
	4	No signal during movement, used in combination with o310, o311 and o312.		
o314	Delayed switch-off Switch off after the specified time For example to switch off lighting a specified time after closing	0.00-9.59 minutes	0.00	
o320	Warning time before start	0.00-9.59 minutes	0.00	
o321	Warning function in combination with o320	1 - 4	2	
	1	Constant signal before automatic closing		
	2	Constant signal before park and automatic closing		
	3	Constant signal before close signal, park and automatic closing		
	4	Constant signal before all signals		
o322	Function during warning time	1 - 2	1	
	1	Output signal disabled during warning in other output		
	2	Signal as configured in o310-o313		

No.	Name	Range	Factory	Setting
o330*	Alarm if there is an error as configured in o331-o339. The alarm is activated for at least the time set in this channel.	0.00-9.59 minutes	0.00	
o331*	Alarm for faulty safety edge. Time as in o330.	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o332*	Alarm for critical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o333*	Alarm if stop circuit interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o334*	Alarm if door open	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o335*	Alarm if door is in mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o336*	Alarm if door is in closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o337*	Alarm if vehicle loop 1 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o338*	Alarm if vehicle loop 2 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o339*	Alarm if photocell interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o342*	Alarm for uncritical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o383	Inversion of contact function for output	1 - 2	1	
	1	Normally open, NO		
	2	Normally closed, NC		

* = Only when o300 is set to 4.

No.	Name	Range	Factory	Setting
o391	Function when SL.1, SL.2 or photocell/loop activated	01 - 14	01	
	01	Presence detection Signal when LOOP1 is activated, remains until LOOP1 is clear.		
	02	Presence detection Signal when LOOP2 is activated, remains until LOOP2 is clear.		
	03	Presence detection Signal when both LOOP1 and LOOP2 are activated, remains until either LOOP1 or LOOP2 is clear.		
	04	Presence detection Signal when PHOTO is activated, remains until PHOTO is clear.		
	05	Presence detection Signal when PHOTO and LOOP1 are activated, remains until either PHOTO or LOOP1 is clear.		
	06	Presence detection Signal when PHOTO and LOOP2 are activated, remains until either PHOTO or LOOP2 is clear.		
	07	Presence detection Signal when PHOTO, LOOP1 and LOOP2 are activated, remains until either PHOTO, LOOP1 or LOOP2 is clear.		
	08	Presence detection Signal when either LOOP1 or LOOP2 is activated, remains until either LOOP1 or LOOP2 is clear.		
	09	Direction sensing Signal when first LOOP1 and then LOOP2 are activated. The signal remains until LOOP2 is clear.		
	10	Direction sensing Signal when first LOOP1 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	11	Direction sensing Signal when first LOOP2 and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	12	Direction sensing Signal when first LOOP2 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	13	Direction sensing Signal when first PHOTO and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	14	Direction sensing Signal when first PHOTO and then LOOP2 are activated. The signal remains until LOOP2 is clear.		

Programmable output 4

No.	Name	Range	Factory	Setting
o400	Function of output 4	0 - 4	0	
	0	Disabled		
	1	Position indication/Movement/Warning. Signal as configured in o410 – o422		
	2	Presence detection/Direction sensing. Signal as configured in o491		
	3	Lock		
	4	Alarm output Signal as configured in o430 – o442		
o410	Open position	0 - 2	0	
	0	Disabled		
	1	Constant signal		
	2*	Flashing signal		
o411	Mid position	0 - 2	1	
	0	Disabled		
	1	Constant signal		
	2*	Flashing signal		
o412	Closed position	0 - 2	1	
	0	Disabled		
	1	Constant signal		
	2*	Flashing signal		
o413	Movement	0 - 7	0	
	0	Disabled		
	1	Constant signal in the opening movement		
	2	Constant signal in the closing movement		
	3	Constant signal in the opening and closing movement		
	4	No signal during movement, used in combination with o410, o411 and o412.		
	5*	Flashing signal in the opening movement		
	6*	Flashing signal in the closing movement		
	7*	Flashing signal in the opening and closing movement		
o414	Delayed switch-off Switch off after the specified time For example to switch off lighting a specified time after closing	0.00-9.59 minutes	0.00	
o420	Warning time before start	0.00-9.59 minutes	0.00	
o421	Warning function in combination with o420	1 - 8	2	
	1	Constant signal before automatic closing		
	2	Constant signal before park and automatic closing		
	3	Constant signal before close signal, park and automatic closing		
	4	Constant signal before all signals		
	5*	Flashing signal before automatic closing		
	6*	Flashing signal before park and automatic closing		
	7*	Flashing signal before close signal, park and automatic closing		
	8*	Flashing signal before all signals		

* WARNING! This setting is possible, but NOT permitted! Selecting it means that the relay output will cease to function. The channel selection for flashing function may be used only together with DB407.

No.	Name	Range	Factory	Setting
o422	Function during warning time	1 - 2	1	
	1	Output signal disabled during warning in other output		
	2	Output signal as configured in o410-o413		
o423	Flashing frequency	0.1-2.0 seconds	0.5	
o430*	Alarm if there is an error as configured in o431-o439. The alarm is activated for at least the time set in this channel.	0.00-9.59 minutes	0.00	
o431*	Alarm for faulty safety edge. Time as in o430.	0 - 1	0	
	0	Constant signal		
	1	Active		
o432*	Alarm for critical error message in display	0 - 1	0	
	0	Constant signal		
	1	Active		
o433*	Alarm if stop circuit interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o434*	Alarm if door open	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o435*	Alarm if door is in mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o436*	Alarm if door is in closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o437*	Alarm if vehicle loop 1 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o438*	Alarm if vehicle loop 2 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o439*	Alarm if photocell interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o442*	Alarm for uncritical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o483	Inversion of contact function for output	1 - 2	1	
	1	Normally open, NO		
	2	Normally closed, NC		

* = Only when o400 is set to 4.

No.	Name	Range	Factory	Setting
o491	Function when LOOP2, LOOP2 or PHOTO activated	01 - 14	01	
	01	Presence detection Signal when LOOP1 is activated, remains until LOOP1 is clear.		
	02	Presence detection Signal when LOOP2 is activated, remains until LOOP2 is clear.		
	03	Presence detection Signal when both LOOP1 and LOOP2 are activated, remains until either LOOP1 or LOOP2 is clear.		
	04	Presence detection Signal when PHOTO is activated, remains until PHOTO is clear.		
	05	Presence detection Signal when PHOTO and LOOP1 are activated, remains until either PHOTO or LOOP1 is clear.		
	06	Presence detection Signal when PHOTO and LOOP2 are activated, remains until either PHOTO or LOOP2 is clear.		
	07	Presence detection Signal when PHOTO, LOOP1 and LOOP2 are activated, remains until either PHOTO, LOOP1 or LOOP2 is clear.		
	08	Presence detection Signal when either LOOP1 or LOOP2 is activated, remains until either LOOP1 or LOOP2 is clear.		
	09	Direction sensing Signal when first LOOP1 and then LOOP2 are activated. The signal remains until LOOP2 is clear.		
	10	Direction sensing Signal when first LOOP1 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	11	Direction sensing Signal when first LOOP2 and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	12	Direction sensing Signal when first LOOP2 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	13	Direction sensing Signal when first PHOTO and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	14	Direction sensing Signal when first PHOTO and then LOOP2 are activated. The signal remains until LOOP2 is clear.		

Programmable output 5

No.	Name	Range	Factory	Setting
o500	Function of output 1	0 - 4	0	
	0	Disabled		
	1	Position indication/Movement/Warning. Signal as configured in o510 – o522		
	2	Presence detection/Direction sensing. Signal as configured in o591		
	3	Lock		
	4	Alarm output Signal as configured in o530 – o542		
o510	Open position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o511	Mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o512	Closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o513	Movement	0 - 4	4	
	0	Disabled		
	1	Constant signal in the opening movement		
	2	Constant signal in the closing movement		
	3	Constant signal in the opening and closing movement		
	4	No signal during movement, used in combination with o510, o511 and o512.		
o514	Delayed switch-off Switch off after the specified time For example to switch off lighting a specified time after closing	0.00-9.59 minutes	0.00	
o520	Warning time before start	0.00-9.59 minutes	0.00	
o521	Warning function in combination with o520	1 - 4	2	
	1	Constant signal before automatic closing		
	2	Constant signal before park and automatic closing		
	3	Constant signal before close signal, park and automatic closing		
	4	Constant signal before all signals		
o522	Function during warning time	1 - 2	1	
	1	Output signal disabled during warning in other output		
	2	Output signal as configured in o510-o513		

No.	Name	Range	Factory	Setting
o530*	Alarm if there is an error as configured in o531-o539. The alarm is activated for at least the time set in this channel.	0.00-9.59 minutes	0.00	
o531*	Alarm for faulty safety edge. Time as in o530.	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o532*	Alarm for critical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o533*	Alarm if stop circuit interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o534*	Alarm if door open	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o535*	Alarm if door is in mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o536*	Alarm if door is in closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o537*	Alarm if vehicle loop 1 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o538*	Alarm if vehicle loop 2 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o539*	Alarm if photocell interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o542*	Alarm for uncritical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o583	Inversion of contact function for output	1 - 2	1	
	1	Normally open, NO		
	2	Normally closed, NC		

* = Only when o500 is set to 4.

No.	Name	Range	Factory	Setting
o591	Function when LOOP2, LOOP2 or PHOTO activated	01 - 14	01	
	01	Presence detection Signal when LOOP1 is activated, remains until LOOP1 is clear.		
	02	Presence detection Signal when LOOP2 is activated, remains until LOOP2 is clear.		
	03	Presence detection Signal when both LOOP1 and LOOP2 are activated, remains until either LOOP1 or LOOP2 is clear.		
	04	Presence detection Signal when PHOTO is activated, remains until PHOTO is clear.		
	05	Presence detection Signal when PHOTO and LOOP1 are activated, remains until either PHOTO or LOOP1 is clear.		
	06	Presence detection Signal when PHOTO and LOOP2 are activated, remains until either PHOTO or LOOP2 is clear.		
	07	Presence detection Signal when PHOTO, LOOP1 and LOOP2 are activated, remains until either PHOTO, LOOP1 or LOOP2 is clear.		
	08	Presence detection Signal when either LOOP1 or LOOP2 is activated, remains until either LOOP1 or LOOP2 is clear.		
	09	Direction sensing Signal when first LOOP1 and then LOOP2 are activated. The signal remains until LOOP2 is clear.		
	10	Direction sensing Signal when first LOOP1 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	11	Direction sensing Signal when first LOOP2 and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	12	Direction sensing Signal when first LOOP2 and then PHOTO are activated. The signal remains until PHOTO is clear.		
	13	Direction sensing Signal when first PHOTO and then LOOP1 are activated. The signal remains until LOOP1 is clear.		
	14	Direction sensing Signal when first PHOTO and then LOOP2 are activated. The signal remains until LOOP2 is clear.		

Programmable output 6

No.	Name	Range	Factory	Setting
o600	Function of output 1	0 - 4	0	
	0	Disabled		
	1	Position indication/Movement/Warning. Signal as configured in o610 – o622		
	2	Presence detection/Direction sensing. Signal as configured in o691		
	3	Lock		
	4	Alarm output Signal as configured in o630 – o642		
o610	Open position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o611	Mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o612	Closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o613	Movement	0 - 4	4	
	0	Disabled		
	1	Constant signal in the opening movement		
	2	Constant signal in the closing movement		
	3	Constant signal in the opening and closing movement		
	4	No signal during movement, used in combination with o610, o611 and o612.		
o614	Delayed switch-off Switch off after the specified time For example to switch off lighting a specified time after closing	0.00-9.59 minutes	0.00	
o620	Warning time before start	0.00-9.59 minutes	0.00	
o621	Warning function in combination with o620	1 - 4	2	
	1	Constant signal before automatic closing		
	2	Constant signal before park and automatic closing		
	3	Constant signal before close signal, park and automatic closing		
	4	Constant signal before all signals		
o622	Function during warning time	1 - 2	1	
	1	Output signal disabled during warning in other output		
	2	Output signal as configured in o610-o613		

No.	Name	Range	Factory	Setting
o630*	Alarm if there is an error as configured in o631-o639. The alarm is activated for at least the time set in this channel.	0.00-9.59 minutes	0.00	
o631*	Alarm for faulty safety edge. Time as in o630.	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o632*	Alarm for critical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o633*	Alarm if stop circuit interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o634*	Alarm if door open	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o635*	Alarm if door is in mid position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o636*	Alarm if door is in closed position	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o637*	Alarm if vehicle loop 1 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o638*	Alarm if vehicle loop 2 is activated	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o639*	Alarm if photocell interrupted	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o642*	Alarm for uncritical error message in display	0 - 1	0	
	0	Disabled		
	1	Constant signal		
o683	Inversion of contact function for output	1 - 2	1	
	1	Normally open, NO		
	2	Normally closed, NC		

* = Only when o600 is set to 4.

No.	Name	Range	Factory	Setting
o691	Function when LOOP2, LOOP2 or PHOTO activated	01 - 14	01	
01	Presence detection Signal when LOOP1 is activated, remains until LOOP1 is clear.			
02	Presence detection Signal when LOOP2 is activated, remains until LOOP2 is clear.			
03	Presence detection Signal when both LOOP1 and LOOP2 are activated, remains until either LOOP1 or LOOP2 is clear.			
04	Presence detection Signal when PHOTO is activated, remains until PHOTO is clear.			
05	Presence detection Signal when PHOTO and LOOP1 are activated, remains until either PHOTO or LOOP1 is clear.			
06	Presence detection Signal when PHOTO and LOOP2 are activated, remains until either PHOTO or LOOP2 is clear.			
07	Presence detection Signal when PHOTO, LOOP1 and LOOP2 are activated, remains until either PHOTO, LOOP1 or LOOP2 is clear.			
08	Presence detection Signal when either LOOP1 or LOOP2 is activated, remains until either LOOP1 or LOOP2 is clear.			
09	Direction sensing Signal when first LOOP1 and then LOOP2 are activated. The signal remains until LOOP2 is clear.			
10	Direction sensing Signal when first LOOP1 and then PHOTO are activated. The signal remains until PHOTO is clear.			
11	Direction sensing Signal when first LOOP2 and then LOOP1 are activated. The signal remains until LOOP1 is clear.			
12	Direction sensing Signal when first LOOP2 and then PHOTO are activated. The signal remains until PHOTO is clear.			
13	Direction sensing Signal when first PHOTO and then LOOP1 are activated. The signal remains until LOOP1 is clear.			
14	Direction sensing Signal when first PHOTO and then LOOP2 are activated. The signal remains until LOOP2 is clear.			

- Programmable inputs, P channels

- Programmable input 1

No.	Name	Range	Factory	Setting
P100	Channels in programmable input 1	0 - 1	1	
	0	Disabled		
	1	Enabled		
P160	Control function	0-5	1	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
▲ P161	Type of control signal when activated	1 - 2	1	
	1	Pulse (hold-to-run mode not possible)		
	2	Signal for as long as the input is activated		
P162	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motors 1 and 2		
P163	Limited opening	0 - 1	0	
	0	Disabled		
	1	Opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
P170	Motor lock	0 - 1	0	
	0	Disabled		
	1	The barrier cannot be operated without a signal at programmable input 1. If the signal disappears the barrier is stopped.		
P175	Opening via input after activation during set time, input will not open the barrier until it has been activated for the set time.	0.0-9.9 seconds	0.0	
P180	Park	0 - 2	2	
	0	Disabled		
	1	Automatic closing disabled after the input is activated, reset by another control signal		
	2	Automatic closing disabled by a constant signal		
P190	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Opens the local door if P160 is set to open, and passes the signal on to the remote door		
P196	Blocking disabled for local and remote doors. Works only with a constant signal.	0 - 1	0	
	0	Disabled		
	1	Active		
P198	Automatic closing disabled for remote door Only works if there is a constant signal	0 - 1	0	
	0	Disabled		
	1	Active		

Programmable input 2

No.	Name	Range	Factory	Setting
P200	Channels in programmable input 2	0 - 1	1	
	0	Disabled		
	1	Enabled		
P260	Control function	0-5	2	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
▲ P261	Type of control signal when activated	1 - 2	1	
	1	Pulse (hold-to-run mode not possible)		
	2	Signal for as long as the input is activated		
P262	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motors 1 and 2		
P263	Limited opening	0 - 1	0	
	0	Disabled		
	1	Opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
P270	Motor lock	0 - 1	0	
	0	Disabled		
	1	The barrier cannot be operated without a signal at programmable input 2. If the signal disappears the barrier is stopped.		
P275	Opening via input after activation during set time, input will not open the barrier until it has been activated for the set time.	0.0-9.9 seconds	0.0	
P280	Park	0 - 2	0	
	0	Disabled		
	1	Automatic closing disabled after the input is activated, reset by another control signal		
	2	Automatic closing disabled by a constant signal		
P290	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Opens the local door if P260 is set to open, and passes the signal on to the remote door		
P296	Blocking disabled for local and remote doors. Works only with a constant signal.	0 - 1	0	
	0	Disabled		
	1	Active		
P298	Automatic closing disabled for remote door Only works if there is a constant signal	0 - 1	0	
	0	Disabled		
	1	Active		

Programmable input 3

No.	Name	Range	Factory	Setting
P300	Channels in programmable input 3	0 - 1	1	
	0	Disabled		
	1	Enabled		
P360	Control function	0-5	0	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
▲ P361	Type of control signal when activated	1 - 2	1	
	1	Pulse (hold-to-run mode not possible)		
	2	Signal for as long as the input is activated		
P362	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motors 1 and 2		
P363	Limited opening	0 - 1	0	
	0	Disabled		
	1	Opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
P370	Motor lock	0 - 1	0	
	0	Disabled		
	1	The barrier cannot be operated without a signal at programmable input 3. If the signal disappears the barrier is stopped.		
P375	Opening via input after activation during set time, input will not open the barrier until it has been activated for the set time.	0.0-9.9 seconds	0.0	
P380	Park	0 - 2	0	
	0	Disabled		
	1	Automatic closing disabled after the input is activated, reset by another control signal		
	2	Automatic closing disabled by a constant signal		
P390	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Opens the local door if P360 is set to open, and passes the signal on to the remote door		
P396	Blocking disabled for local and remote doors. Works only with a constant signal.	0 - 1	0	
	0	Disabled		
	1	Active		
P398	Automatic closing disabled for remote door Only works if there is a constant signal	0 - 1	0	
	0	Disabled		
	1	Active		

Programmable input 4

No.	Name	Range	Factory	Setting
P400	Channels in programmable input 4	0 - 1	1	
	0	Disabled		
	1	Enabled		
P460	Control function	0-5	0	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
▲ P461	Type of control signal when activated	1 - 2	1	
	1	Pulse		
	2	Signal for as long as the input is activated		
P462	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motors 1 and 2		
P463	Limited opening	0 - 1	0	
	0	Disabled		
	1	Opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
P470	Motor lock	0 - 1	0	
	0	Disabled		
	1	The barrier cannot be operated without a signal at programmable input 4. If the signal disappears the barrier is stopped.		
P475	Opening via input after activation during set time, input will not open the barrier until it has been activated for the set time.	0.0-9.9 seconds	0.0	
P480	Park	0 - 2	0	
	0	Disabled		
	1	Automatic closing disabled after the input is activated, reset by another control signal		
	2	Automatic closing disabled by a constant signal		
P490	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Opens the local door if P460 is set to open, and passes the signal on to the remote door		
P496	Blocking disabled for local and remote doors. Works only with a constant signal.	0 - 1	0	
	0	Disabled		
	1	Active		
P498	Automatic closing disabled for remote door Only works if there is a constant signal	0 - 1	0	
	0	Disabled		
	1	Active		

Programmable input 5

No.	Name	Range	Factory	Setting
P500	Channels in programmable input 6	0 - 1	1	
	0	Disabled		
	1	Activated (Only channels P560-P598 activated)		
	2	Battery operation, only together with frequency converter (Channels P560-P598 inactivated)		
P560	Control function	0-5	0	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
▲ P561	Type of control signal when activated	1 - 2	1	
	1	Pulse		
	2	Signal for as long as the input is activated		
P562	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motors 1 and 2		
P563	Limited opening	0 - 1	0	
	0	Disabled		
	1	Opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
P570	Motor lock	0 - 1	0	
	0	Disabled		
	1	The barrier cannot be operated without a signal at programmable input 5. If the signal disappears the barrier is stopped.		
P575	Opening via input after activation during set time, input will not open the barrier until it has been activated for the set time.	0.0-9.9 seconds	0.0	
P580	Park	0 - 2	0	
	0	Disabled		
	1	Automatic closing disabled after the input is activated, reset by another control signal		
	2	Automatic closing disabled by a constant signal		
P590	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Opens the local door if P560 is set to open, and passes the signal on to the remote door		
P596	Blocking disabled for local and remote doors. Works only with a constant signal.	0 - 1	0	
	0	Disabled		
	1	Active		
P598	Automatic closing disabled for remote door Only works if there is a constant signal	0 - 1	0	
	0	Disabled		
	1	Active		

Programmable input 6

No.	Name	Range	Factory	Setting
P600	Channels in programmable input 6	0 - 1	1	
	0	Disabled		
	1	Activated (Only channels P660-P698 activated)		
	2	Safety input (Only channels P640-P643 activated)		
P640	Safety function when input is activated	0 - 3	1	
	0	Disabled		
	1	Reverse to fully open		
	2	Stop with automatic restart of automatic closing		
	3	Stop, wait for new control signal or time in C520 and thereafter automatic closing.		
P641	Safety during run-on time or disengagement angle in closing movement.	0 - 1	0	
	0	Disabled when both halves are in run-on or disengagement angle		
	1	Activated according to P640		
P642	Protection in opening movement	0 - 4	1	
	0	Disabled		
	1	Reverse to fully closed		
	2	Stop with automatic restart of automatic closing		
	3	Stop, wait for new control signal or time in C520 and then automatic closing.		
	4	Stop with restart of opening		
P643	Control of external protection connected to INP6	0 - 1	1	
	0	No check		
	1	Test of protection connected to INP6		
P660	Control function	0-5	0	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
▲ P661	Type of control signal when activated	1 - 2	1	
	1	Pulse		
	2	Signal for as long as the input is activated		
P662	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motors 1 and 2		
P663	Limited opening	0 - 1	0	
	0	Disabled		
	1	Opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
P670	Motor lock	0 - 1	0	
	0	Disabled		
	1	The barrier cannot be operated without a signal at programmable input 6. If the signal disappears the barrier is stopped.		

No.	Name	Range	Factory	Setting
P675	Opening via input after activation during set time, input will not open the barrier until it has been activated for the set time.	0.0-9.9 seconds	0.0	
P680	Park	0 - 2	0	
	0	Disabled		
	1	Automatic closing disabled after the input is activated, reset by another control signal		
	2	Automatic closing disabled by a constant signal		
P690	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Opens the local door if P660 is set to open, and passes the signal on to the remote door		
P696	Blocking disabled for local and remote doors. Works only with a constant signal.	0 - 1	0	
	0	Disabled		
	1	Active		
P698	Automatic closing disabled for remote door Only works if there is a constant signal	0 - 1	0	
	0	Disabled		
	1	Active		

- DB411, Radio board, r-channels
Programmable wireless input 1

No.	Name	Range	Factory	Setting
r001	Readout of received wireless input	0 - 4	0	
	0	No wireless reception		
	1	Wireless input 1 is receiving a wireless signal		
	2	Wireless input 2 is receiving a wireless signal		
	3	Wireless input 3 is receiving a wireless signal		
	4	Wireless input 4 is receiving a wireless signal		
r160	Control function	0 - 5	0	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
r162	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motor 1 and Motor 2		
r163	Limited opening	0 - 1	0	
	0	Disabled		
	1	Time opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
r170	Disable operation at wireless input 1.	0 - 6	0	
	0	Disabled, normal operation. (Programmable input has no function for wireless input 1)		
	1	Operate only if there is a signal at programmable input 1		
	2	Operate only if there is a signal at programmable input 2		
	3	Operate only if there is a signal at programmable input 3		
	4	Operate only if there is a signal at programmable input 4		
	5	Operate only if there is a signal at programmable input 5		
	6	Operate only if there is a signal at programmable input 6		
r180	Park	0 - 1	0	
	0	Disabled		
	1	Park without automatic closing Reset by another control signal		
r190	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Sends a normal open signal to the remote door		

Programmable wireless input 2

No.	Name	Range	Factory	Setting
r001	Readout of received wireless input	0 - 4	0	
	0	No wireless reception		
	1	Wireless input 1 is receiving a wireless signal		
	2	Wireless input 2 is receiving a wireless signal		
	3	Wireless input 3 is receiving a wireless signal		
	4	Wireless input 4 is receiving a wireless signal		
r260	Control function	0 - 5	0	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
r262	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motor 1 and Motor 2		
r263	Limited opening	0 - 1	0	
	0	Disabled		
	1	Time opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
r270	Disable operation at wireless input 2.	0 - 6	0	
	0	Disabled, normal operation. (Programmable input has no function for wireless input 2)		
	1	Operate only if there is a signal at programmable input 1		
	2	Operate only if there is a signal at programmable input 2		
	3	Operate only if there is a signal at programmable input 3		
	4	Operate only if there is a signal at programmable input 4		
	5	Operate only if there is a signal at programmable input 5		
	6	Operate only if there is a signal at programmable input 6		
r280	Park	0 - 1	0	
	0	Disabled		
	1	Park without automatic closing Reset by another control signal		
r290	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Sends a normal open signal to the remote door		

Programmable wireless input 3

No.	Name	Range	Factory	Setting
r001	Readout of received wireless input	0 - 4	0	
	0	No wireless reception		
	1	Wireless input 1 is receiving a wireless signal		
	2	Wireless input 2 is receiving a wireless signal		
	3	Wireless input 3 is receiving a wireless signal		
	4	Wireless input 4 is receiving a wireless signal		
r360	Control function	0 - 5	0	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
r362	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motor 1 and Motor 2		
r363	Limited opening	0 - 1	0	
	0	Disabled		
	1	Time opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
r370	Disable operation at wireless input 3.	0 - 6	0	
	0	Disabled, normal operation. (Programmable input has no function for wireless input 3)		
	1	Operate only if there is a signal at programmable input 1		
	2	Operate only if there is a signal at programmable input 2		
	3	Operate only if there is a signal at programmable input 3		
	4	Operate only if there is a signal at programmable input 4		
	5	Operate only if there is a signal at programmable input 5		
	6	Operate only if there is a signal at programmable input 6		
r380	Park	0 - 1	0	
	0	Disabled		
	1	Park without automatic closing Reset by another control signal		
r390	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Sends a normal open signal to the remote door		

Programmable wireless input 4

No.	Name	Range	Factory	Setting
r001	Readout of received wireless input	0 - 4	0	
	0	No wireless reception		
	1	Wireless input 1 is receiving a wireless signal		
	2	Wireless input 2 is receiving a wireless signal		
	3	Wireless input 3 is receiving a wireless signal		
	4	Wireless input 4 is receiving a wireless signal		
r460	Control function	0 - 5	0	
	0	Disabled		
	1	Open		
	2	Close		
	3	Stop		
	4	Open/close		
	5	Open/stop/close		
r462	Half operation	1 - 3	3	
	1	Motor 1		
	2	Motor 2		
	3	Motor 1 and Motor 2		
r463	Limited opening	0 - 1	0	
	0	Disabled		
	1	Time opening according to set time in channel C412/C414 or number of degrees in L116/L126 if encoder is used.		
r470	Disable operation at wireless input 4.	0 - 6	0	
	0	Disabled, normal operation. (Programmable input has no function for wireless input 4)		
	1	Operate only if there is a signal at programmable input 1		
	2	Operate only if there is a signal at programmable input 2		
	3	Operate only if there is a signal at programmable input 3		
	4	Operate only if there is a signal at programmable input 4		
	5	Operate only if there is a signal at programmable input 5		
	6	Operate only if there is a signal at programmable input 6		
r480	Park	0 - 1	0	
	0	Disabled		
	1	Park without automatic closing Reset by another control signal		
r490	Interlock opening	0 - 1	0	
	0	Disabled		
	1	Sends a normal open signal to the remote door		

Error messages

Grey background means that the automatic control unit must be restarted (power off) in order to reset the error message.

Error code	Meaning	Possible cause
EP-1	Not an error code – indicates the type of EP104 in use	
EP-2	Not an error code – indicates the type of EP104 in use	
E000	No error, shown to acknowledge a change in the service channel.	
E003	Limited running time exceeded	Gears slipping? Check C403
E008	Momentary loss of 24 V	Mains failure, momentary 24 V short circuit.
E015	Momentary loss of 230V	Has there been a power failure?
E017	Safety edge or load guard triggered five times in succession	Is something preventing the door reaching the closed position?
E020	Voltage too high in safety circuit	The voltage measured by the automatic control unit is too high.
E021	Voltage too low in safety circuit	Check external safety circuit
E025	Incorrect setting for personal protection, motor 1	Check C200 and C230, the load guard cannot be disabled with personal protection activated. Check C211, it cannot be longer than 0.06 seconds. C212 cannot be longer than 2 seconds. C493 cannot be longer than 0.20 seconds.
E026	Incorrect setting for personal protection, motor 2	Check C200 and C240, the load guard cannot be disabled with personal protection activated. Check C211, it cannot be longer than 0.06 seconds. C212 cannot be longer than 2 seconds. C493 cannot be longer than 0.20 seconds.
E027	Incorrect setting for motor protection, low limit inactive	If C202 is not set to 4 C201 may not be set to 1. C201 is only used with a frequency converter.
E028	Brake selected when using a frequency converter	Check that C495/C496 is set to 0.
E032	Limit switch L.O1 has lost its position	Is the limit switch cam bypassing the switch? Loose connection in switch?
E033	Limit switch L.C1 has lost its position	Is the limit switch cam bypassing the switch? Loose connection in switch?
E034	Limit switch L.O2 has lost its position	Is the limit switch cam bypassing the switch? Loose connection in switch?
E035	Limit switch L.C2 has lost its position	Is the limit switch cam bypassing the switch? Loose connection in switch?
E040	Invalid selection in the service channel	
E044	Hidden channels shown	
E046	Opening counter reset	
E047	Factory reset of all channels	
E048	Error code list reset	
E050	Unknown circuit board, EP104 or Light not fully equipped	Contact FAAC Nordic AB
E051	Incorrect software, full version programmed in EPLight	Contact FAAC Nordic AB
E052	Incorrect software, EPLight software programmed into a fully equipped EP104	Contact FAAC Nordic AB
E116	No safety edge acknowledgement	Only applies to up-and-over control, fault in safety edge? Correct run-on time?
E201	Motor protection triggered for motor 1	Motor is taking more than 1.5x motor current. Motor is sluggish or stops. Faulty fuse? Phase failure in an incoming phase? Break in cable to motor or motor winding? Check the motor protection setting.
E202	Motor protection triggered for motor 2	

Error code	Meaning	Possible cause
E203	Motor protection triggered four times in a row, control unit locked for 3 minutes	Is there an obstacle? Fault in electric motor? Check the configuration of channels C252, C253, C262, C263.
E204	Current through motor 1, which is switched off	
E205	Current through motor 2, which is switched off	
E206	No current or low current in motor 1	The electric motor is running at less than half the motor protection setting. Check the motor protection setting. Phase failure in an incoming phase? Faulty fuse? Break in cable to electric motor? Voltage drop in stop circuit/limit switch circuit?
E207	No current or low current in motor 2	
E221	Start load too low, motor 1	Check that the motor is correctly connected.
E222	Start load too low, motor 2	Check that the motor is correctly connected.
E223	Normal power too low, motor 1	Check C230.
E224	Normal power too low, motor 2	Check C240.
E225	The load guard has been tripped three times in a row	Obstacle in the way? Mechanical fault preventing closing? Check the load guard settings.
E318	Error in loop 1	Are the loop and connectors electrically continuous? For more troubleshooting tips, see the instruction manual for the vehicle detector
E319	Error in loop 2	
E614	Communication error	Correct polarity in communication cables? Break in communication cable? Correct settings in both automatic control units? Is the external unit switched on?
E651	No response from frequency converter motor 1	Check the connection and the settings as described in Instruction Manual for DB409. Address must be set for the frequency converter.
E652	No response from frequency converter motor 2	Check the connection and the settings as described in Instruction Manual for DB409. Address must be set for the frequency converter.
E661	Incorrect value sent to frequency converter motor 1	Contact FAAC Nordic AB
E662	Incorrect value sent to frequency converter motor 2	Contact FAAC Nordic AB
E671	Incorrect response from frequency converter motor 1	Contact FAAC Nordic AB
E672	Incorrect response from frequency converter motor 2	Contact FAAC Nordic AB
E901	Extraneous voltage at safety edge input SE.C1	Contact FAAC Nordic AB.
E902	Extraneous voltage at safety edge input SE.C2	Contact FAAC Nordic AB.
E903	Extraneous voltage at safety edge input SE.O1	Contact FAAC Nordic AB.
E904	Extraneous voltage at limit switch input	Contact FAAC Nordic AB.
E905	Extraneous voltage in stop circuit	Contact FAAC Nordic AB.
E906	Extraneous voltage at safety edge input SE.O2	Contact FAAC Nordic AB.
E907	Extraneous voltage on limit switch L.O1	Contact FAAC Nordic AB.
E908	Extraneous voltage on limit switch L.O2	Contact FAAC Nordic AB.
E909	Internal watchdog triggered	Contact FAAC Nordic AB.
E910	Clock monitoring error	Contact FAAC Nordic AB.
E911	Repeated restart attempts	Short circuit in limit switch or stop circuit? After the problem is corrected, the unit makes a new attempt to restart after 20 seconds.
E912	Incorrect checksum in flash memory	Contact FAAC Nordic AB.
E913	Memory error in RAM	Contact FAAC Nordic AB.
E914	Memory error in EEPROM	Contact FAAC Nordic AB.
E915	Incorrect EEPROM version	Contact FAAC Nordic AB.

Error code	Meaning	Possible cause
E916	Internal test not completed in time	Contact FAAC Nordic AB.
E917	Incorrect order of execution	Contact FAAC Nordic AB.
E918	All error codes deleted due to an internal fault	
E921	Contact for motor 1 activated before the previously activated contactor has been deactivated.	Contact FAAC Nordic AB.
E922	Contact for motor 2 activated before the previously activated contactor has been deactivated.	Contact FAAC Nordic AB.
E931	Stop at the same time as an open/close operation.	
E932	Open operation at the same time as a close operation.	
E941	Motor 1 running in the wrong direction according to the encoder setting.	Check that channel L110 is set to the correct side. Check the motor is running in the right direction.
E942	Motor 2 running in the wrong direction according to the encoder setting.	Check that channel L120 is set to the correct side. Check the motor is running in the right direction.
E943	No movement encoder 1	Check connection to the encoder.
E944	No movement encoder 2	Check connection to the encoder.
E961	SE.C1 did not change to low during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel C113 to 0.
E962	SE.C2 did not change to low during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel C123 to 0.
E963	SE.O1 did not change to low during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel C133 to 0.
E964	PHOTO did not change to low during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel C343 to 0.
E965	Photocell did not change to low during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel P643 to 0.
E966	SE.O2 did not change to low during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel C143 to 0.
E971	SE.C1 did not change to high during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel C113 to 0.
E972	SE.C2 did not change to high during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel C123 to 0.
E973	SE.O1 did not change to high during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel C133 to 0.
E976	SE.O2 did not change to high during the external test.	Check that the safety edge is functional, if the safety edge is not functional, set channel C143 to 0.

Troubleshooting

At each service, please check all the functions described in the relevant section on commissioning.

Problem	Possible cause, tip
Error message in the display (Ennn)	See the section above on error messages.
The door reverses and the red LEDs M1/M2 start flashing.	Is the load guard correctly installed? Has the correct supply voltage been set? Mechanical fault? Does the door move easily when decoupled?
Are the red LEDs SE.C1, SE.C2, SE.O1 or SE.O2 on or flashing?	Check the channels for the safety edge value. Is the impedance correct? Adjust the safety edge switch if necessary? Are all the safety edge units in use? Are any of the limit switch LEDs on? The safety edge will not work unless the limit switches are connected at the time the power is switched on. Is the stop LED on? The safety edge will not work unless the stop circuit is uninterrupted at the time the power is switched on.
The door will not open or close.	Are all the green LEDs that should be lit on? Have unused stop inputs been jumpered? Are any of the LEDs INP1-INP6 on? They should not usually be on (unless the system is parked at certain times). The limit switch LEDs must light up before the door can be operated. Example: L.O1 is on = motor 1 can start. The limit switches are connected in series with the stop circuit. Fault/interruption in the wicket door contact or other contact in the stop circuit. Check that the warning is configured. Check that the block is configured.
The door will not close but it will open.	The PHOTO LED should be on. Are any safety edge indications on? They should normally be off. Suspect an incorrect connection to the safety edge. Alternatively, an adjustment may be necessary. Check the channel for pulse operation.
No automatic closing.	Suspect an interruption somewhere in the stop circuit. Wicket door contact? Stop button? Check the setting for restart after stopping.
The display and LEDs do not switch on	Are all supply phases present? Possibly a short circuit to earth in a low current connection. Switch off at the main switch for 1 minute and remove all jackable terminals. Switch on the power again with the jackable terminals disconnected.
You will need to hold down the run button to operate.	Check that the automatic control unit is in pulse mode. Is the PHOTO LED on? Are any of the safety edge LEDs on? Is LOOP1 or LOOP2 lit? These should only be on if a vehicle is over the loop.
Does the door inexplicably close "by itself"? (without an error message or alarm LEDs)	Try to operate the door again, opening and closing. Also check C020 for the most recent stop cause. Cross-check the number with the channel reference to find out what stopped the door.

• Resetting/replacing tripped fuses

If the fuse protecting the power supply to the automatic control unit trips, FAAC Nordic AB recommends following these steps to reset/replace it.

- Switch off the main switch to the automatic control unit.
- Decouple the motor winder.
- Reset or replace the fuse.
- Switch on the main switch to the automatic control unit.
- Check that none of the motor winders start before receiving the control signal.
- Check that the motor winders can be started and stopped from the control buttons.
- If the motor winder cannot be stopped, contact FAAC Nordic AB.



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