Mogler®

INTEGRATED CASH DRAWERS
UNDER-THE-COUNTER CASH DRAWERS
TABLE TOP CASH DRAWERS

INSTRUCTIONS
FOR ELECTRICAL CASH DRAWERS

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Introduction

1.1 General

- Please read the instructions **before** installing or using the cash drawer for the first time.
- Kindly observe the maintenance instructions (see Section 3).
- Lock the cash drawer with the cylinder lock as well before leaving it unattended.

1.2 Guarantee

All Mogler cash drawers are covered by a 24 month guarantee.

Please note that improper handling or failure to observe the instructions will render warranty claims void. Mogler is not liable for damages or losses due to improper operation.

1.3 Safety Instructions

! Lay and secure all cables so that they cannot be damaged by being caught or pulled!

! Always turn the printer and computer off before removing the mains plug!

! Always remove the mains plug before opening electrical devices (for example, when replacing parts or configuring the interface)!

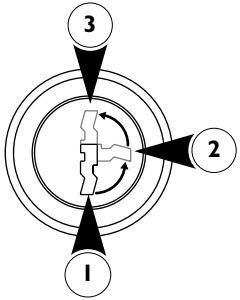
1.4 Installation

The cash drawer is locked upon delivery.

- Before assembling any cash drawer type, you must first remove the drawer (see Section 1.4.2).

1.4.1 Opening the Cash Drawer for the First Time

The cash drawer key is located in the envelope with the instruction manual.



- Unlock the cylinder lock.
  - ➜ Key position **1** = drawer locked
  - ➜ Key position **2** = drawer unlocked (operating state)
  - ➜ Key position **3** = drawer opens (emergency open as well)
- Open the cash drawer.

1.4.2 Removing the Cash Drawer

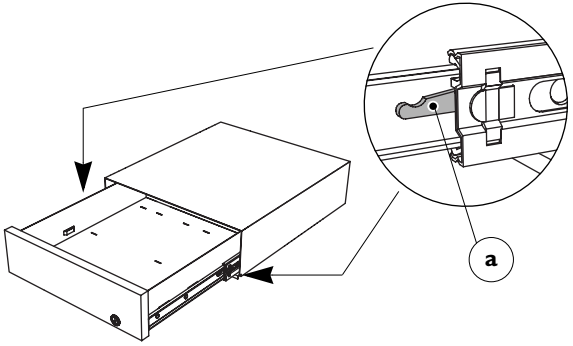
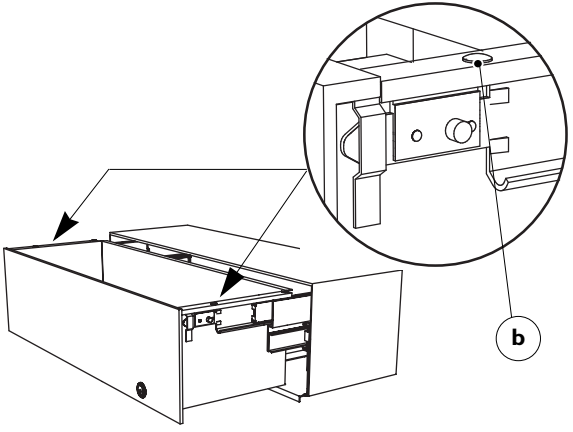


Table Top/Under-The-Counter Cash Drawers

- Pull the drawer out as far as possible.
- Press plastic lever **a** as far as it will go (down on the right and up on the left side of the drawer) and then pull the drawer out.
  - ➜ The drawer can now be removed from the rails.



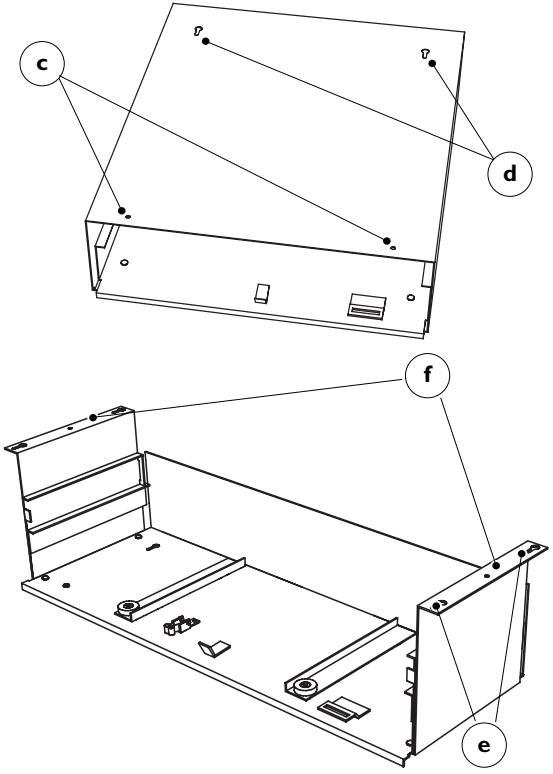
Reduced-Depth Cash Drawers

- Pull the drawer out as far as it will go.
  - ➜ Pull the drawer gently to bypass the incorporated spring blocking mechanism.
  - ➜ Now pull the drawer out as far as it will go again.
- Press both lock knobs **b** on the top edges of the drawer and pull the drawer towards you.

Telescopic Rails Without Plastic Lever (a)

- Pull the drawer out as far as it will go.
  - ➜ Free the drawer from the rails with a firm tug.

1.4.3 Installing the Cash Drawer



! To install the cash drawer unit, use screws with heads that are as flat as possible to ensure smooth movement of the sliding drawer.

Under-The-Counter Cash Drawers

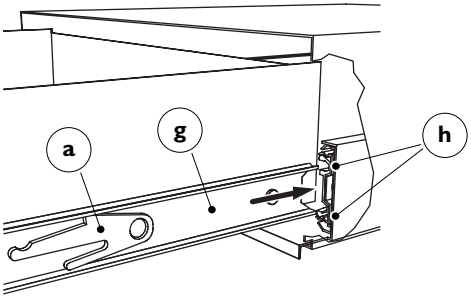
- Fasten the under-the-counter cash drawer unit to the base plate using drill holes **c** and keyholes **d** .

Reduced-Depth Cash Drawers with Mounting Frames (Under-The-Counter Model)

- Mount the cash drawer unit to the base plate using keyholes **e** on mounting frame **f**.

Optional: Table top cash drawer with mounting bracket.

1.4.4 Inserting the Cash Drawer



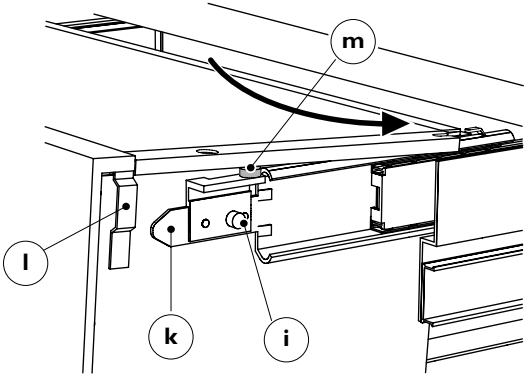
! Never apply force to close a cash drawer.

Table Top/Under-The-Counter Cash Drawer

- Push the telescopic rails into the cash drawer housing as far as they will go.
- Insert guide rails **g** on the side of the drawer into openings **h** on the telescopic rails.

! Be careful not to twist or tilt the drawer.

- Close the cash drawer. The rails are automatically blocked.



Reduced-Depth Cash Drawers

- Pull the guide rails out as far as they will go.
- Place the drawer on the rails.
- Hold the rails using knobs **i** and insert tongue **k** into the supports labelled **l**.
  → Lock knobs **m** should automatically latch into the holes in the drawer.
- Push the drawer gently to overcome the incorporated spring blocking mechanism.
- Close the cash drawer.

Telescopic Rails Without Plastic Lever (a)

- Push the telescopic rails into the cash drawer housing as far as they will go.
- Guide the drawer onto the rails with a firm push.

2 Operation

Using the Mogler cash register modules, your cash drawer can be operated with all standard cash register programs used on PCs, cash registers, scales and sales slip printers.

Depending on the module type, the cash drawer is connected to the computer's serial or parallel port. The software is used to open the cash drawer via the electronic controller. On cash register modules for parallel ports, the cash drawer can only be opened if the transmitted character corresponds to the code set on the DIP switch of the cash register module.

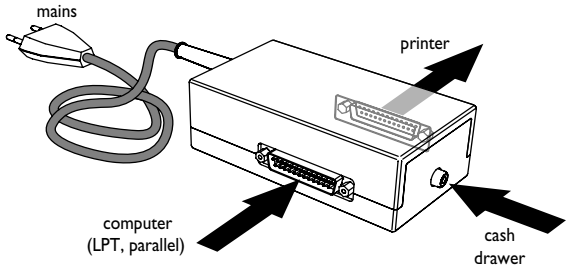
2.1 Connecting the Cash Drawer

! Cash drawers should only be connected if the voltage specified on the data plate or test protocol coincides with the actual voltage of the power supply.

➜ Special voltage requirements are only available on request.

! The solenoids are designed for pulse operation only.

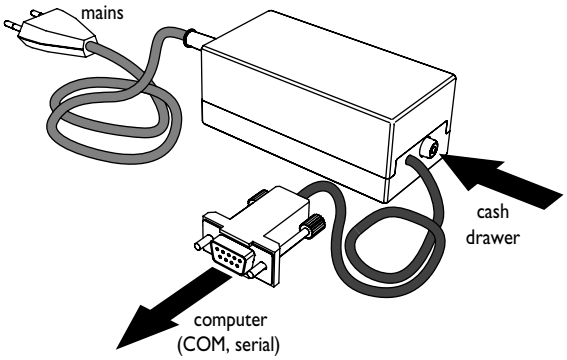
➜ Avoid a continuous load on the solenoids, such as from a continuously pressed signal key, for example.



Cash Register Module Type PC-St5 for Parallel Ports (LPT)

! Always turn the printer and computer off before making any connections.

- Connect the 25 pin connector to the parallel port (LPT) on the computer and fasten it with both screws.
- Connect the other end of this cable to the module and fasten it with both screws.
- Connect the module and the printer.
- Fasten the plug with the screws.
- Connect the cinch cable on the cash drawer to the cash register module.
- Connect the mains plug.
- Turn the computer and printer on again.



Cash Register Module Type PC-St4 for Serial Ports (COM)

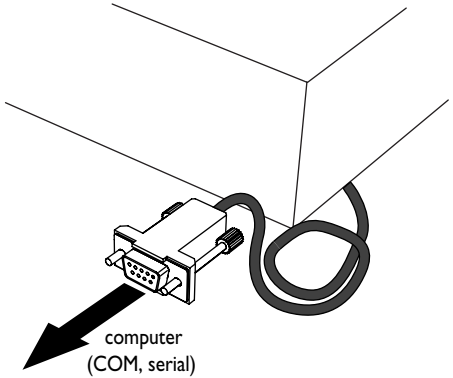
! Always turn the computer off before making any connections.

- Connect the module to the serial port (COM) on the computer (with a 9 or 25 pin D-Sub connector).
- Fasten the plug with both screws.
- Connect the cinch cable on the cash drawer to the cash register module.
- Connect the mains plug.
- Turn the computer and printer back on.

Serial Port (COM) Power BLOC – Mains Independent

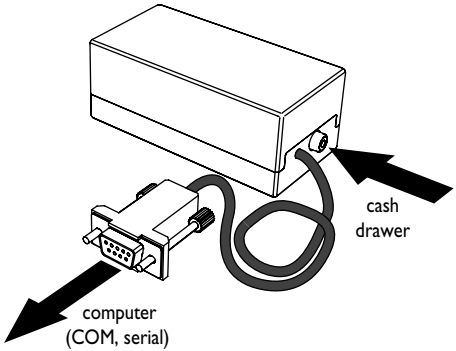
The cash drawer is controlled or opened with the Power BLOC module. Unlike cash register module type PC-St4, this module is not connected to the main electrical network. The Power BLOC is integrated in the cash drawer housing during production. If desired, the Power BLOC can be supplied in a separate housing with the appropriate connectors.

! Always turn the computer off before making any connections.



Integrated Power BLOC

- Connect the (9 or 25 pin) connector to the serial port (COM) on the computer and fasten it with both screws.
- Turn the computer and printer on again.



External Power BLOC

- Connect the module to the serial port (COM) on the computer (with a 9 or 25 pin D-Sub connector).
- Fasten the plug with both screws.
- Connect the cinch cable on the cash drawer to the cash register module.
- Turn the computer and printer on again.

2.2 Opening the Cash Drawer

With all module types, the cash drawers are opened by outputting special characters over the selected interface.

This character is usually defined in the cash register software. The cash register module interprets the character and sends the open signal (see Section 5.5).

A table of the permitted characters and their associated switch settings can be found in Section 5.4 or 5.5.1.

Mogler cash drawers function with all established cash register programs, cash registers, scales and sales slip printers. Special programming instructions (software requirements and sample programs) are available on request.

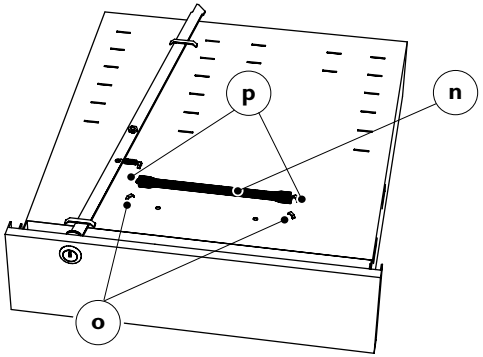
2.2.1 Status Request

The status request, to determine whether a cash drawer is open or closed, takes place using a limit switch on the back of the cash drawer housing. The limit switch can be installed on request.

➜ See Section 5.5.2

For more details on the pin layout, see Section 5.3.

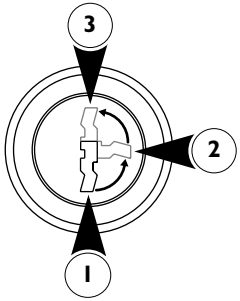
2.2.2 Configuring the Distance that the Cash Drawer Extends



The distance the cash drawer extends (travel) is variable on all models:

- Attach stop **n** to the bottom of the drawer.
  - ➜ Inserting the stop in the front position **o** = shortest drawer travel when open
  - ➜ Inserting the stop in the rear position **p** = longest extension of drawer when open

2.3 Cylinder Lock



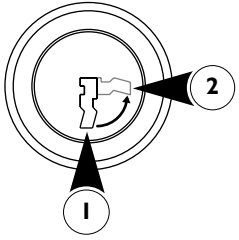
All cash drawer models (except 28E) can be locked or unlocked using a cylinder lock:

- Unlock the cylinder lock.
  - ➜ Key position **1** = drawer locked
  - ➜ Key position **2** = drawer unlocked (operating state)
  - ➜ Key position **3** = drawer opens (emergency open as well)

! Remove the key after unlocking the cash drawer. This will prevent the cash drawer from becoming locked if the key is accidentally turned and avoid accidental breakage of the key.

! Never leave a key in the cash drawer!

2.4 Models With Lockable Drawer Inserts (DI)



Always remove the cover before placing the insert into the cash drawer.

- Unlock the lock on the cover of the insert.
  - ➜ Vertical key position **1** = cover locked
  - ➜ Horizontal key position **2** = cover unlocked
- Raise the cover to clear the lock and then remove it.
- Place the insert into the drawer.

- With certain models, the cover can be stored in a special storage area under the drawer during operation.
- To close the insert cover again, remove the insert from the cash drawer.
- Ensure that the cover is resting on the edge of the insert before shutting it.
- Turn the lock.

3 Maintenance

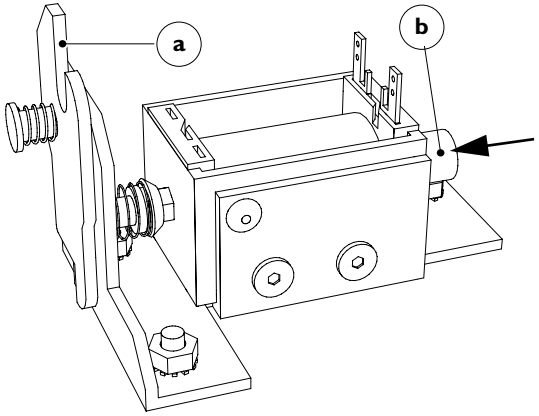
! Keep the guide rails and ball bearings clean.

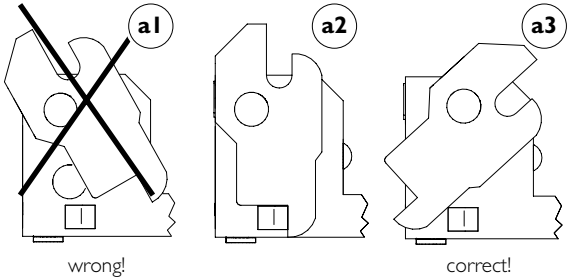
If dirt should hinder smooth operation of the cash drawer:

- Remove the cash drawer (see Section 1.4.2).
- Clean the telescopic rails.
- Coat the rails and ball bearings with a non-hardening ball bearing grease.

4 Trouble Shooting

4.1 The drawer will not enter the housing





After installation in the housing

Possible cause: The lock lever **a** is in the incorrect position (**a1**)

- Move lever **a** to the vertical position (**a2**).
- Carefully push the magnet anchor **b** to the left and press the lever towards the back (**a3**).

After installation in the housing

Possible cause: The drawer has been twisted or tilted

- Remove the drawer.
- Insert the drawer again.

Cash Drawer With Insert

Possible cause: The cover is not placed correctly on the drawer insert.
If you want to store a covered insert in the cash drawer, you must make sure that the cover is correctly positioned on the insert.

- Place the cover on the insert again.

Possible cause: Insert was not placed in the drawer correctly.

- Remove the drawer insert.
- Check that there are no objects below the drawer insert.
- Reassemble all components in reverse order.
- Reinstall the cash drawer (see Section 1.4.4).

Other Causes

Possible cause: Lock is closed.

- Make certain that the lock is in the unlocked position.

Possible cause: Objects are blocking the drawer.

- Make sure that there are no objects behind the cash drawer.

Possible cause: The guide rails or ball bearings are dirty.

- See Maintenance (Section 3)

4.2 Power Failure

During a power failure or accidental unplugging, you must open the cash drawer using the cylinder lock.

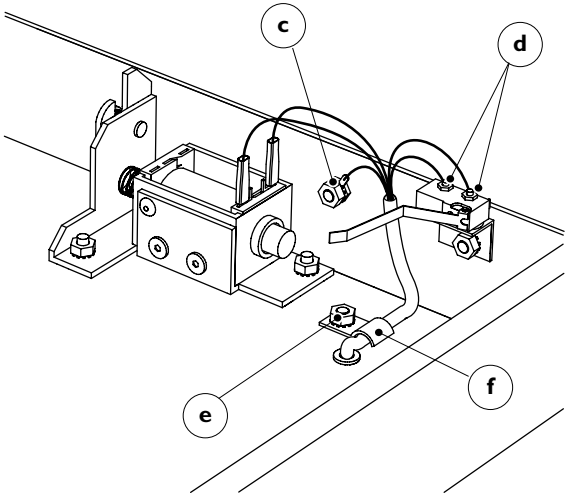
➜ See Section 2.3: Emergency Open

- Make sure that the required power is available or that the mains plug is connected.

4.3 The drawer will no longer open

- Proceed as follows:
- Make certain that all power cords are connected.
- If necessary, check whether the printer is connected and ready for operation.
- Check all cable connections.
  ➜ See Section 2.1
- Make certain the correct trigger character has been selected.
- Turn the computer off and then restart it again.

- If you still cannot solve the problem:
- Unplug the cables to external devices and unplug the mains cord.
- Remove the cash drawer (see Section 1.4.2).
- Check the connections to the trigger magnet.
  ➜ If necessary, remove the cash drawer housing (see Section 1.4.3).
- Check the trigger magnet for visible damage.
  ➜ If necessary, replace the magnet
  (see below: Replacing the Trigger Magnet).
- Ensure that the control cable has not been caught or damaged.
  ➜ If necessary, replace the control cable
  (see below: Replacing the Control Cable).



Replacing the Control Cable

- Unplug the cables to external devices and unplug the mains cord.
- Remove the drawer (see Section 1.4.2).
- Remove the cash drawer housing (see Section 1.4.3).

Table Top/Under-The-Counter Cash Drawer

- Remove the six nuts under the base plate of the cash drawer housing.
- Remove the base plate from the housing.

! Make a note of the colours and connections of the cables!

! Remove all cable, screw and solder connections!

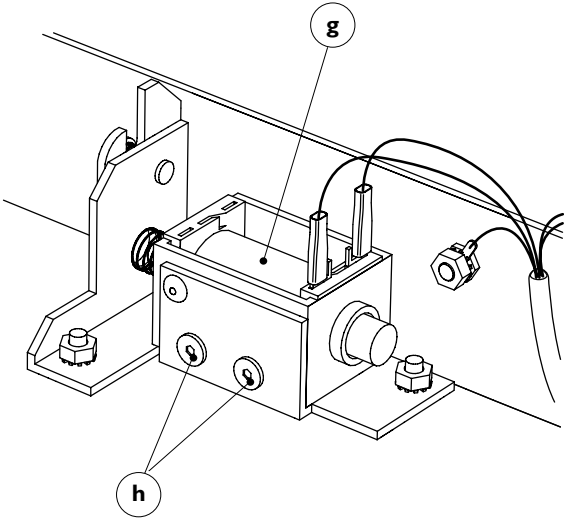
- Remove nut **e** from cable guard **f**.
- Replace the control cable.
- Reassemble all components in reverse order.
- Reinstall the cash drawer (see Section 1.4.4).

Reduced-Depth Cash Drawers with Mounting Frames

! Make a note of the colours and connections of the cables!

! Remove all cable, screw and solder connections!

- Remove nut **e** from cable guard **f**.
- Replace the control cable.
- Reassemble all components in reverse order.
- Reinstall the cash drawer (see Section 1.4.4).



Replacing the Trigger Magnet

- Unplug the cables to external devices and unplug the mains cord.
- Remove the cash drawer (see Section 1.4.2).
- Remove the cash drawer housing (see Section 1.4.3).

Table Top/Under-The-Counter Cash Drawer

- Remove the six nuts under the base plate of the cash drawer housing.
- Remove the base plate from the housing.

! Make a note of the colours and connections of the cables!

- Remove the connections to the trigger magnet **g**.
- Remove the two screws labelled **h**.
- Replace the electromagnet.
- Reassemble all components in reverse order.
- Reinstall the cash drawer (see Section 1.4.4).

Reduced-Depth Cash Drawers with Mounting Frames

! Make a note of the colours and connections of the cables!

- Remove the connections to the trigger magnet.
- Remove the two screws labelled **h**.
- Replace the electromagnet.
- Reassemble all components in reverse order.
- Reinstall the cash drawer (see Section 1.4.4).

4.4 The status is no longer displayed

Possible cause: Incorrect data transmission.

- Check that all cables are connected correctly.
- Ensure that the connectors on the limit switch in the cash drawer housing are not disconnected.
  - ➜ For additional trouble shooting information, see Section 4.3: Replacing the Control Cable
- Ensure that the control cable has not been caught or broken.
- If necessary, replace the control cable.
  - ➜ See Section 4.3: Replacing the Control Cable

Possible cause: The limit switch is defective.

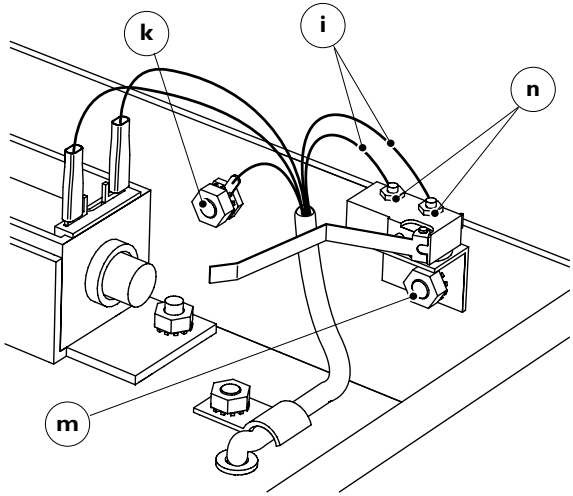
! Unplug the cables to external devices and unplug the mains cord!

- Remove the cash drawer (see Section 1.4.2).
- Remove the cash drawer housing (see Section 1.4.3).

Table Top/Under-The-Counter Cash Drawer

- Remove the six nuts under the base plate of the cash drawer housing.
- Remove the base plate from the housing.

! Make a note of the colours and connections of the cables!
! Remove all connectors!



- Disconnect all cables to ground **k** and limit switch **i**.
- Remove nut **m**.
- Remove the nuts (**n**) on the switch support bracket.
- Replace the limit switch.
- Reassemble all components in reverse order.
- Reinstall the cash drawer (see Section 1.4.4).

Reduced-Depth Cash Drawers with Mounting Frames

! Make a note of the colours and connections of the cables!

- Remove all cable, screw and solder connections!
- Remove nut **m**.
- Remove the screws (**n**) on the switch support bracket.
- Replace the limit switch.
- Reassemble all components in reverse order.
- Reinstall the cash drawer (see Section 1.4.4).

4.5 Other

The key is broken

- Please contact your dealer.

The cash drawer pops open after closing

Possible cause: The emergency release spring on the emergency release lever is broken and the bearing is defective.

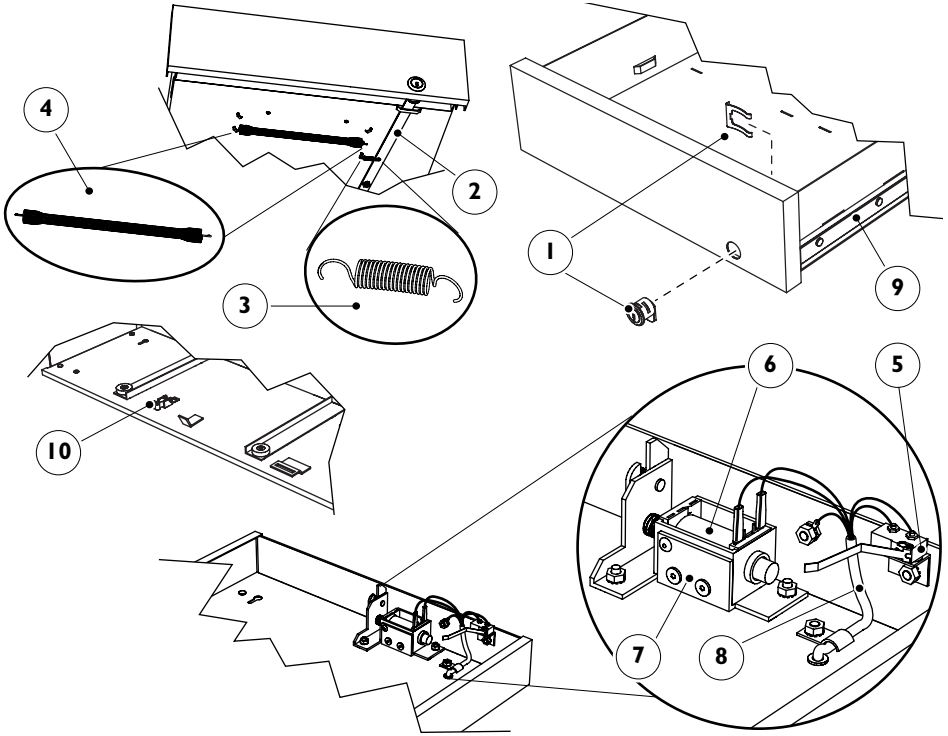
- Remove the cash drawer (see Section 1.3.2).
- Replace the emergency release spring and the bearing on the back of the drawer (see Replacement Parts List 5.1).

5 Appendix

5.1 Replacement Parts

When ordering replacement parts, please specify the item number, cash or drawer type and the serial number.

Fig.	Item No.	Description
1	900-001	Cylinder Lock with Lock Spring
2	900-010	Emergency Release Lever
3	900-002	Emergency Release Spring
4	900-003	Stop Spring
5	900-004	Micro Switch
6	900-005	Magnet
7	900-007	Lock Mechanism
	900-008	Bearing (Back of Drawer)
8	900-100	Control Cable (Specify interface type!)
9	900-009	Rail Set (Pair): Guide Rails and Telescopic Rails (complete set)
10	910-011	Spring Blocking Mechanism (Reduced-Depth Cash Drawer)
	910-012	Drawer Blocking Mechanism (Reduced-Depth Cash Drawer) (Bottom of Drawer)
	910-001	Cash Register Module Type PC-St5
	910-002	Cash Register Module Type PC-St4
	910-003	Power BLOC
	910-090	Print Simulator



5.2 Accessories

Consult our catalogue for additional accessories such as drawer equipment and storage compartments for coins and banknotes.

To ensure optimum, trouble free operation of your product, we recommend that you only use the drawer inserts provided by Mogler GmbH.

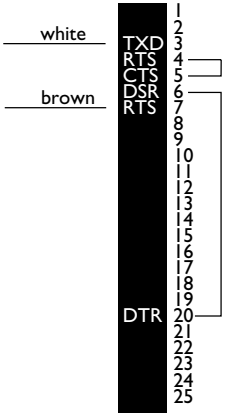
5.3 Specifications

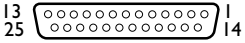
5.3.1 Cash Register Module Type PC-St5 for Parallel Ports

Electrical Specifications

Supply Voltage	230 V
Supply Current	10 mA
Power	2.3 W
Pulse Voltage	24 V
Pulse Current	300 mA
Pulse Duration	60 ms< t <200 ms
Magnet (with Lift of 5 mm)	3 N

5.3.2 Cash Register Module Type PC-St4 for Serial Ports

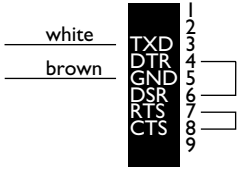


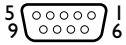


25-pin conn. to the serial pc interface

Electrical Specifications and Pin Layout

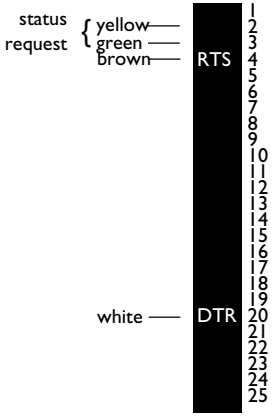
Supply Voltage	230 V
Supply Current	10 mA
Power	2.3 W
Pulse Voltage	24 V
Pulse Current	300 mA
Pulse Duration	60 ms< t <200 ms
Magnet (with Lift of 5 mm)	3 N

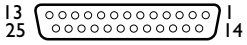




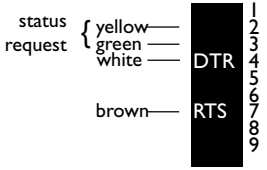
9-pin conn. to the serial pc interface

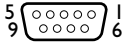
5.3.3 Serial Port Power BLOC





25-pin conn. to the serial pc interface



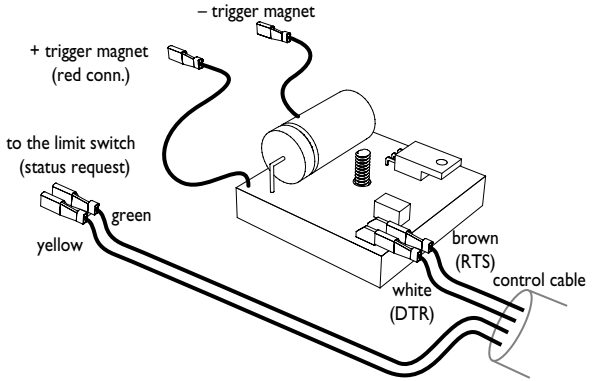


9-pin conn. to the serial pc interface

Electrical Specifications and Pin Layout

Pulse Voltage	15 V
Pulse Current	1A
Pulse Duration	35 ms
Magnet (with Lift of 5 mm)	3 N

Integrated Power BLOC Connection



5.4 Character Set

Dec.	Hex.	Bin.	Char.	Comment	Dec.	Hex.	Bin.	Char.	Comment
0	00	0000 0000			20	14	0001 0100	¶	
1	01	0000 0001			21	15	0001 0101	§	
2	02	0000 0010			22	16	0001 0110	▬	
3	03	0000 0011			23	17	0001 0111	↨	
4	04	0000 0100			24	18	0001 1000	↑	
5	05	0000 0101			25	19	0001 1001	↓	
6	06	0000 0110			26	1A	0001 1010	→	
7	07	0000 0111			27	1B	0001 1011	←	
8	08	0000 1000			28	1C	0001 1100	∟	
9	09	0000 1001			29	1D	0001 1101	↔	
10	0A	0000 1010			30	1E	0001 1110	▼	
11	0B	0000 1011			31	1F	0001 1111	▲	
12	0C	0000 1100			32	20	0010 0000		
13	0D	0000 1101			33	21	0010 0001	!	
14	0E	0000 1110			34	22	0010 0010	"	
15	0F	0000 1111			35	23	0010 0011	#	
16	10	0001 0000			36	24	0010 0100	$	
17	11	0001 0001			37	25	0010 0101	%	
18	12	0001 0010			38	26	0010 0110	&	
19	13	0001 0011			39	27	0010 0111	'	

Dec.	Hex.	Bin.	Char.	Comment	Dec.	Hex.	Bin.	Char.	Comment
40	28	0010 1000	(		60	3C	0011 1100	<	
41	29	0010 1001	)		61	3D	0011 1101	=	
42	2A	0010 1010	*		62	3E	0011 1110	>	
43	2B	0010 1011	+		63	3F	0011 1111	?	
44	2C	0010 1100	,		64	40	0100 0000	@	
45	2D	0010 1101	-		65	41	0100 0001	A	
46	2E	0010 1110	.		66	42	0100 0010	B	
47	2F	0010 1111	/		67	43	0100 0011	C	
48	30	0011 0000	0		68	44	0100 0100	D	
49	31	0011 0001	1		69	45	0100 0101	E	
50	32	0011 0010	2		70	46	0100 0110	F	
51	33	0011 0011	3		71	47	0100 0111	G	
52	34	0011 0100	4		72	48	0100 1000	H	
53	35	0011 0101	5		73	49	0100 1001	I	
54	36	0011 0110	6		74	4A	0100 1010	J	
55	37	0011 0111	7		75	4B	0100 1011	K	
56	38	0011 1000	8		76	4C	0100 1100	L	
57	39	0011 1001	9		77	4D	0100 1101	M	
58	3A	0011 1010	:		78	4E	0100 1110	N	
59	3B	0011 1011	;		79	4F	0100 1111	O	

Dec.	Hex.	Bin.	Char.	Comment		Dec.	Hex.	Bin.	Char.	Comment
80	50	0101 0000	P			100	64	0110 0100	d	
81	51	0101 0001	Q			101	65	0110 0101	e	
82	52	0101 0010	R			102	66	0110 0110	f	
83	53	0101 0011	S			103	67	0110 0111	g	
84	54	0101 0100	T			104	68	0110 1000	h	
85	55	0101 0101	U			105	69	0110 1001	i	
86	56	0101 0110	V			106	6A	0110 1010	j	
87	57	0101 0111	W			107	6B	0110 1011	k	
88	58	0101 1000	X			108	6C	0110 1100	l	
89	59	0101 1001	Y			109	6D	0110 1101	m	
90	5A	0101 1010	Z			110	6E	0110 1110	n	
91	5B	0101 1011	[			111	6F	0110 1111	o	
92	5C	0101 1100	\			112	70	0111 0000	p	
93	5D	0101 1101	]			113	71	0111 0001	q	
94	5E	0101 1110	^			114	72	0111 0010	r	
95	5F	0101 1111	_			115	73	0111 0011	s	
96	60	0110 0000	`			116	74	0111 0100	t	
97	61	0110 0001	a			117	75	0111 0101	u	
98	62	0110 0010	b			118	76	01110110	v	
99	63	0110 0011	c			119	77	0111 0111	w	

Dec.	Hex.	Bin.	Char.	Comment		Dec.	Hex.	Bin.	Char.	Comment
120	78	0111 1000	x			140	8C	1000 1100	î	
121	79	0111 1001	y			141	8D	1000 1101	ì	
122	7A	0111 1010	z			142	8E	1000 1110	Ä	
123	7B	0111 1011	{			143	8F	1000 1111	Å	
124	7C	0111 1100	¦			144	90	1001 0000	É	
125	7D	0111 1101	}			145	91	1001 0001	æ	
126	7E	0111 1110	~			146	92	1001 0010	Æ	
127	7F	0111 1111	⌂			147	93	1001 0011	ô	
128	80	1000 0000	Ç			148	94	1001 0100	ö	
129	81	1000 0001	ü			149	95	1001 0101	æ	
130	82	1000 0010	é			150	96	1001 0110	û	
131	83	1000 0011	â			151	97	1001 0111	ú	
132	84	1000 0100	ä			152	98	1001 1000	ÿ	
133	85	1000 0101	à			153	99	1001 1001	Ö	
134	86	1000 0110	å			154	9A	1001 1010	Ü	
135	87	1000 0111	ç			155	9B	1001 1011	¢	
136	88	1000 1000	ê			156	9C	1001 1100	£	
137	89	1000 1001	ë			157	9D	1001 1101	¥	
138	8A	1000 1010	é			158	9E	1001 1110	₨	
139	8B	1000 1011	ï			159	9F	1001 1111	*f*	

Dec.	Hex.	Bin.	Char.	Comment	Dec.	Hex.	Bin.	Char.	Comment
160	A0	1010 0000	á		180	B4	1011 0100	┤	
161	A1	1010 0001	í		181	B5	1011 0101	╡	
162	A2	1010 0010	ó		182	B6	1011 0110	╢	
163	A3	1010 0011	ú		183	B7	1011 0111	╖	
164	A4	1010 0100	ñ		184	B8	1011 1000	╕	
165	A5	1010 0101	Ñ		185	B9	1011 1001	╣	
166	A6	1010 0110	ª		186	BA	1011 1010	║	
167	A7	1010 0111	º		187	BB	1011 1011	╗	
168	A8	1010 1000	¿		188	BC	1011 1100	╝	
169	A9	1010 1001	⌐		189	BD	1011 1101	╜	
170	AA	1010 1010	¬		190	BE	1011 1110	╛	
171	AB	1010 1011	½		191	BF	1011 1111	┐	
172	AC	1010 1100	¼		192	C0	1100 0000	└	
173	AD	1010 1101	¡		193	C1	1100 0001	┴	
174	AE	1010 1110	«		194	C2	1100 0010	┬	
175	AF	1010 1111	»		195	C3	1100 0011	├	
176	B0	1011 0000	▒		196	C4	1100 0100	─	
177	B1	1011 0001	▒		197	C5	1100 0101	┼	
178	B2	1011 0010	▒		198	C6	1100 0110	╞	
179	B3	1011 0011	│		199	C7	1100 0111	╟	

Dec.	Hex.	Bin.	Char.	Comment	Dec.	Hex.	Bin.	Char.	Comment
200	C8	1100 1000	╚		220	DC	1101 1100	▄	
201	C9	1100 1001	╔		221	DD	1101 1101	▌	
202	CA	1100 1010	╩		222	DE	1101 1110	▐	
203	CB	1100 1011	╦		223	DF	1101 1111	▀	
204	CC	1100 1100	╠		224	E0	1110 0000	α	
205	CD	1100 1101	═		225	E1	1110 0001	ß	
206	CE	1100 1110	╬		226	E2	1110 0010	Γ	
207	CF	1100 1111	╧		227	E3	1110 0011	π	
208	D0	1101 0000	╨		228	E4	1110 0100	Σ	
209	D1	1101 0001	╤		229	E5	1110 0101	σ	
210	D2	1101 0010	╥		230	E6	1110 0110	µ	
211	D3	1101 0011	╙		231	E7	1110 0111	τ	
212	D4	1101 0100	╘		232	E8	1110 1000	Φ	
213	D5	1101 0101	╒		233	E9	1110 1001	Θ	
214	D6	1101 0110	╓		234	EA	1110 1010	Ω	
215	D7	1101 0111	╫		235	EB	1110 1011	δ	
216	D8	1101 1000	╪		236	EC	1110 1100	∞	
217	D9	1101 1001	┘		237	ED	1110 1101	ø	
218	DA	1101 1010	┌		238	EE	1110 1110	∈	
219	DB	1101 1011	▉		239	EF	1110 1111	∩	

Dec.	Hex.	Bin.	Char.	Comment
240	F0	1111 0000	≡	
241	F1	1111 0001	±	
242	F2	1111 0010	≥	
243	F3	1111 0011	≤	
244	F4	1111 0100	⌠	
245	F5	1111 0101	⌡	
246	F6	1111 0110	÷	
247	F7	1111 0111	≈	
248	F8	1111 1000	°	
249	F9	1111 1001	∙	
250	FA	1111 1010	·	
251	FB	1111 1011	√	
252	FC	1111 1100	ⁿ	
253	FD	1111 1101	²	
254	FE	1111 1110	■	
255	FF	1111 1111		

5.5 Software

Mogler cash drawers function with all established cash register programs. Special programming instructions (software requirements and sample programs) are available on request.

In addition to operating the cash drawer, the software for the Power BLOC must also support the following functions:

- Initialization of the interface.
- Polarity reversal of both handshake cables with the prescribed frequency.
- Implementation of the switch status query.

Of the six Turbo Pascal programs (source code available), two routines differ because of the base address for the interface component.

If another programming language supports direct port access, the Turbo Pascal programs can be converted to this language.

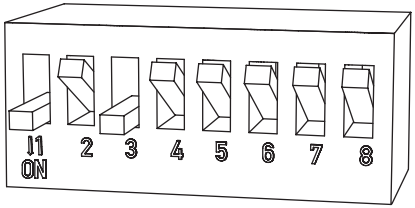
The programs perform the following functions:

Program	Function
INI1.PAS	Initialization of the first interface (COM1)
OEFFNEN1.PAS	Opening of Power BLOC on COM1
STATUS1.PAS	Query status of a switch connected to COM1

Similarly, the programs would address the interface component connected to COM2 using Index "2".

These programs are available as EXE files. The menu-based RS232.EXE program performs all the functions of the aforementioned programs. If required, the interface number (COM1 to COM4) can be determined as well.

5.5.1 Control Conditions

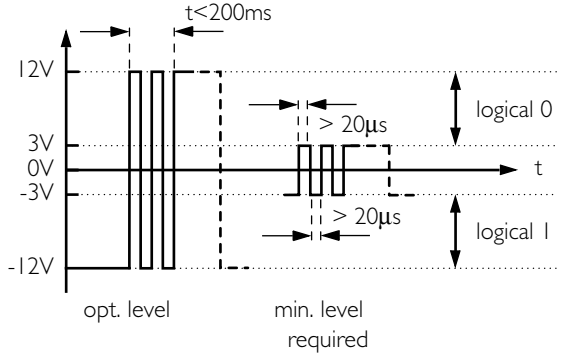


Cash Register Module Type PC-St5 for Parallel Ports

The character for opening the cash drawer is entered on the computer and sent to the printer. If the transmitted character coincides with the code on the DIP switch, the cash register is opened via the control module.

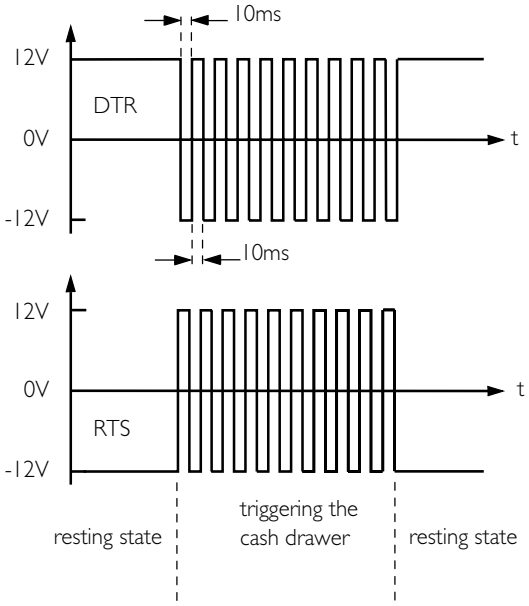
- To change the trigger character for opening the cash drawer:
- Turn the computer and printer off.
- Unplug the cables to external devices and unplug the mains cable.
- Remove the four screws on the bottom of the cash register module.
- Open the housing cover.
- Set the code on the DIP switch.
  - ➜ Switch setting "On" is 0.
  - ➜ The default factory setting is binary value 0101 1111. This corresponds to the underscore character (_).
  - ➜ A table with binary values (Bin.) and the corresponding character (Char.) is included in Appendix 5.4.
- Close the module housing.

! The control module will only work when a printer is connected and ready for operation or if a print simulator (item no. 910-090) is attached.



Cash Register Module Type PC-St4 for Serial Ports

To open the drawer, at least three signal variations from logical 1 (-3V...-12V) to logical 0 (+3V...+12V) must occur within 200 ms. Voltage peaks (for example, during shut down and startup of the PC) are distinguished from valid ASCII characters. This prevents incorrect opening of the cash drawer.



Serial Port Power BLOC

For interface component 8250, the signal from Bit 0 and Bit 1 is changed via the MCR modem control register. In the closed state (drawer closed), the DTR connection is at approx. +12V and RTS at -12V.

Modem Control Register (Resting State):

	Bit 1	Bit 0
Logical State	0	1
Level	RTS approx. -12V	DTR approx. +12V

To trigger the cash drawer, the polarity of both levels are reversed approx. ten times for ten ms and then reset.

The outputs must then return to the resting state levels again.

! The capacitor is recharged for the next trigger event only when the voltage level returns to logical 1 after the cash drawer has been triggered.

5.5.2 Status Request

The status request takes place over the TXD (output) and RXD (input) data lines. The software determines whether data transmission from output to input can take place.

- ➜ Data transmission possible = switch closed (drawer extended)
- ➜ Data transmission not possible = switch open (drawer in housing)

We would be happy to advise you. Give us a call!

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