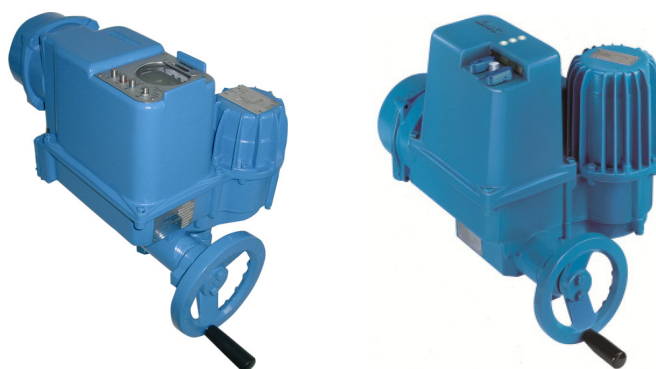


***Supplementary instruction manual:***

**USB-adaptor kit for actuators with integrated control unit**



Part number: 187619  
Revision: 1.1  
Date: 02.03.2018

**Remark**

*This instruction manual has to be kept for further use.*

## **Table of content:**

1	General.....	3
1.1	Instructions .....	3
1.2	Validity .....	3
1.2.1	Requirements .....	3
1.2.2	Delivery content.....	4
2	Driver installation .....	6
2.1	Driver installation under Windows XP .....	6
3	Connectivity .....	11
3.1	SER01 adaptor.....	11
3.1.1	Connection on Matic C base plate DMC - 02 (since HW Rev. 5) .....	11
3.1.2	Connection on Matic C interface unit DMC - 14 (Profibus DP-V1) .....	12
3.1.3	Connection on i-matic interface unit DiM - 09 (DeviceNet) .....	12
3.1.4	Connection on Matic C display unit DMC - 30 (LCD display unit).....	13
3.1.5	Connection on i-matic unit DiM - 24 (accumulator unit) .....	13
3.2	SER02 adaptor.....	14
3.2.1	Connection on i-matic display unit DiM - 02 (IR / IrII) .....	14
3.2.2	Connection on i-matic display unit DiM - 22 (Bluetooth).....	15
3.3	SER03 adaptor.....	16
3.3.1	Connection on Matic C base plate DMC - 02 .....	17
3.4	SER04 adaptor.....	18
3.4.1	Connection on i-matic interface unit DiM - 17 (modbus loop).....	18

# 1 General

## 1.1 Instructions

The following signs draw special attention to safety-relevant procedures in these operation instructions:



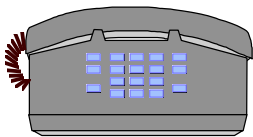
This symbol signifies „additional information“.  
Failure to observe may lead to damage occurring.



This symbol signifies „attention“.  
Failure to observe may result in damage and personal injury.



This symbol signifies „warning!“  
Failure to observe may result in damage and severe personal injury.



### SERVICE

Service DREHMO GmbH  
fon.: +49 2762 9850-206  
fax: +49 2762 9850-210

## 1.2 Validity

The usage of the described USB adaptor kit is only valid in combination with the DREHMO specific electrical units as described in detail in the following sections. The adaptors offer a mean to establish a serial connection between a PC with USB interface and various intelligent electronic units.

### 1.2.1 Requirements

The usage of the USB adaptor kit is only allowed for trained staff. The knowledge of basic electronic and electric rules is required.

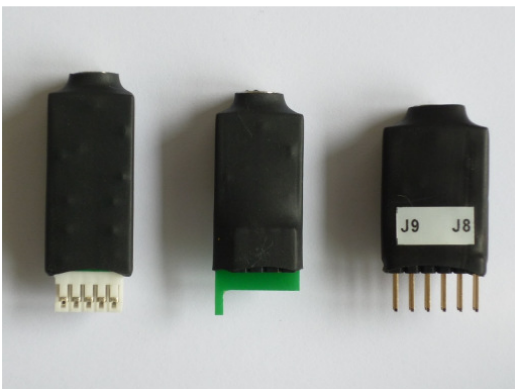


A connection setup of the adaptor to the various electronic units is only allowed while the units are not powered. Safety instructions of the actuator instruction manual and the available electronic unit documentation have to be observed.

Serial communication is supported on the PC side by means of separate software. Available are the software tools i-matic Explorer and Matic C Operator. The corresponding user manuals have to be observed.

### 1.2.2 Delivery content

The adaptor kit comprises an USB cable with a DREHMO specific programmed USB-serial converter and three different adaptor units SER01, SER02, SER03.



A separate adapter cable SER04 for the use in combination with the i-matic modbus loop interface unit DiM - 17 is furthermore available:



The following table gives a reference overview for the adapter usage in combination with the various electronic units.

<b>Adaptor</b>	<b>unit reference</b>	<b>unit function</b>	<b>unit connector</b>	<b>PC-Tool</b>	<b>chapter</b>
SER01	DMC - 02.x from revision 5	Matic C base plate	X11 (lower side)	Matic C Operator	3.1.1
	DMC - 14	Matic C profibus DP-V1	TEST	Matic C Operator	3.1.2
	DiM - 09	i-matic DeviceNet	X2, X3	WinGate <sup>1</sup>	3.1.3
	DMC - 30	Matic C LCD display unit	CN1	Flash Magic <sup>2</sup>	3.1.4
	DiM - 24	i-matic accumulator unit	CN1	Flash Magic <sup>2</sup>	3.1.5
SER02	DiM - 02	i-matic display unit IR / Irll	X2	i-matic Explorer	3.2.1
	DiM - 22	i-matic display unit Bluetooth	X2	i-matic Explorer	3.2.2
SER03	DMC - 02.x all revisions	Matic C base plate	X6 (upper side)	Matic C Operator	3.3.1
SER04	DiM - 17	i-matic modbus loop unit	XT	i-matic Explorer	3.4.1

Remark:



A connection to the units DiM – 09, DMC – 30 and DiM – 24 is only allowed for especially trained staff. The usage of the given tools by strictly following the instruction manuals of the electronic units is required. Otherwise, the intended function of the units may be disturbed.

<sup>1</sup> WinGate - Tool of company Deutschmann Automation

<sup>2</sup> Flash Magic – Tool of Embedded Systems Academy / Philips Semiconductors

## 2 Driver installation

### 2.1 Driver installation under Windows XP

The usage of the adaptors by means of a PC with operating system Windows XP requires the installation of DREHMO specific drivers. These drivers can be downloaded from the companys web site [www.drehmo.com](http://www.drehmo.com).

This chapter shows the user of the adaptor kit how the installation procedure of the required drivers are done under the operation system Windows XP

The device simulates a virtual communication port under Windows over which the device is accessed by the service tools. To install the needed drivers please follow the instructions in the respective section below.

System requirements

**Software:**

Windows XP SP2

**Hardware (recommended):**

Min. 700MHz CPU

Min. 128MB RAM

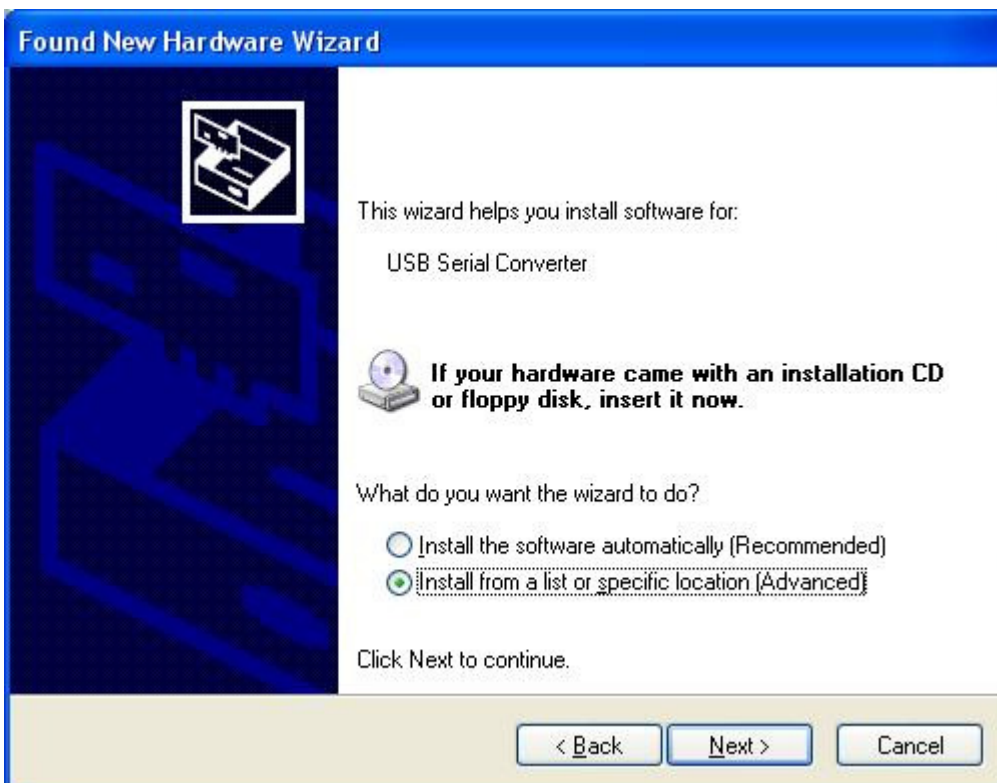
Download the latest available drivers from the Drehmo website [www.drehmo.com](http://www.drehmo.com) and unzip them to a location on your PC.

If you are running Windows XP or Windows XP SP1, temporarily disconnect your PC from the Internet. This can be done by either removing the network cable from your PC or by disabling your network card by going to the "Control Panel\Network and Dial-Up Connections", right clicking on the appropriate connection and selecting "Disable" from the menu. The connection can be re-enabled after the installation is complete. This is not necessary under Windows XP SP2 if configured to ask before connecting to Windows Update. Windows XP SP2 can have the settings for Windows Update changed through "Control Panel\System" then select the "Hardware" tab and click "Windows Update".

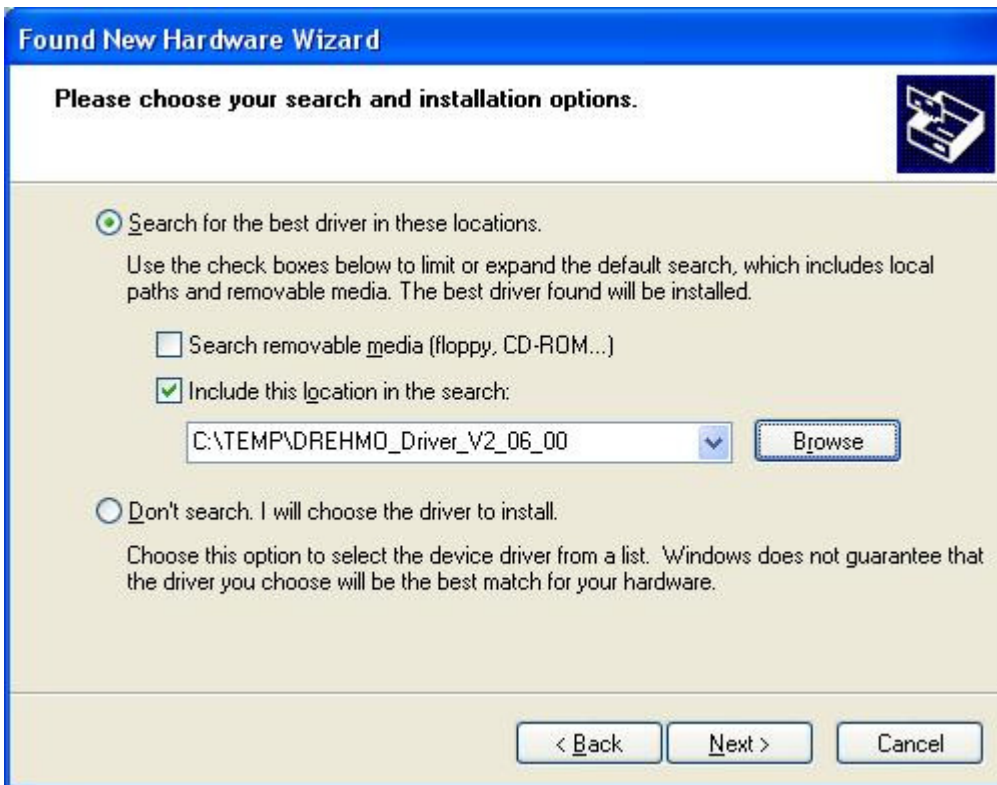
Connect the device to a spare USB port on your PC. This will launch the Windows "Found New Hardware Wizard". If there is no Internet connection available or Windows XP SP2 is configured to ask before connecting to Windows Update, the screen below is shown. Select "No, not this time" from the options available and then click "Next" to proceed with the installation. If there is an Internet connection available, Windows XP will silently connect to the Windows Update website and install any suitable driver it finds for the device in preference to the driver manually selected.



Select "Install from a list or specific location (Advanced)" as shown below and then click "Next".



Select "Search for the best driver in these locations" and enter the file path in the combo-box ("C:\TEMP\DREHMO\_Driver\_V2\_06\_00" in the example below) or browse to it by clicking the browse button. Once the file path has been entered in the box, click next to proceed.



If Windows XP is configured to warn when unsigned (non-WHQL certified) drivers are about to be installed, the following screen will be displayed. Click on "Continue Anyway" to continue with the installation. If Windows XP is configured to ignore file signature warnings, no message will appear.





The following screen will be displayed as Windows XP copies the required driver files.



Windows should then display a message indicating that the installation was successful. Click "Finish" to complete the installation. The serial converter driver is now installed. In order to enable the Drehmo components to communicate with the converter the COM port emulation driver must be installed.



After clicking "Finish", the Found New Hardware Wizard will continue by installing the COM port emulation driver. The procedure is the same as that above for installing the serial converter driver.

Open the Device Manager (located in "Control Panel\System" then select the "Hardware" tab and click "Device Manger") and select "View > Devices by Type". The device appears as an additional COM port with the label "Drehmo USB – TTL Converter".



## 3 Connectivity

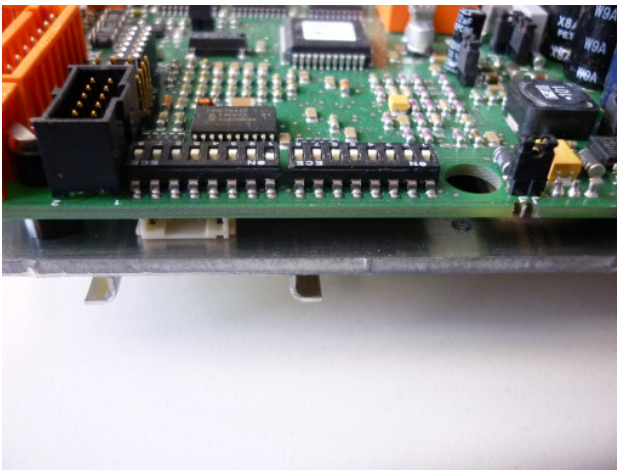
### 3.1 SER01 adaptor

The SER01 adaptor enables the access by means of a 5 pole female reverse polarity protected connector. By means of an integrated push button, a reset of the attached electronic unit can be forced.



#### 3.1.1 Connection on Matic C base plate DMC - 02 (since HW Rev. 5)

The following pictures show the position of the interface connector for the SER01 adaptor on the DMC - 02 unit - available for hardware revision 5 or higher.



#### Attention:

In case of a mounted DMC - 14 unit (Profibus DP-V1 interface) the usage of this connection is restricted. The direct serial access to the base board requires in any case the dismount of the interface unit DMC - 14.

### 3.1.2 Connection on Matic C interface unit DMC - 14 (Profibus DP-V1)

The following picture shows the position of the interface connector for the SER01 adaptor on the DMC - 14 unit.



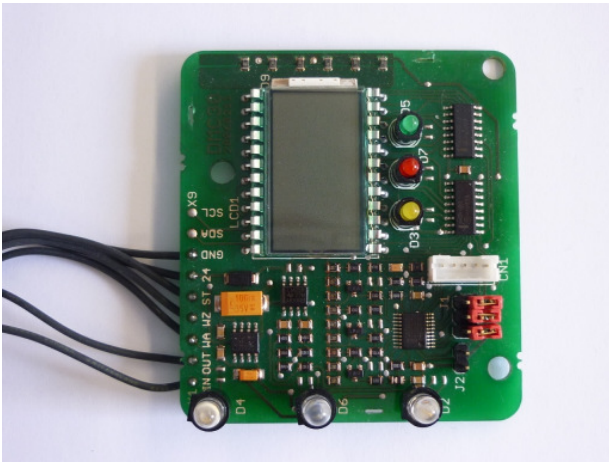
### 3.1.3 Connection on i-matic interface unit DiM - 09 (DeviceNet)

The following picture shows the position of the interface connector for the SER01 adaptor on the DiM - 09 unit. In case of redundancy, two connectors are available (one for each channel).



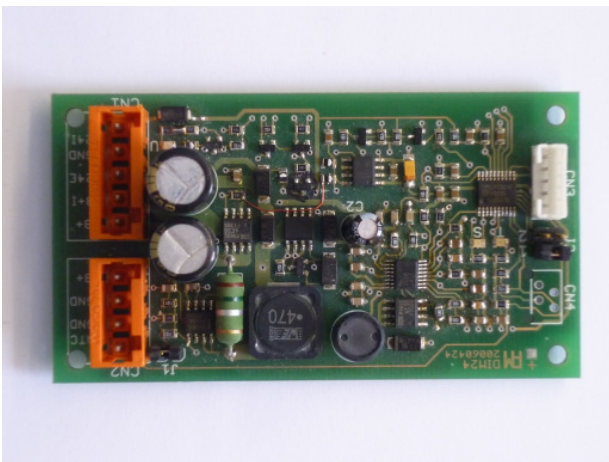
### 3.1.4 Connection on Matic C display unit DMC - 30 (LCD display unit)

The following pictures show the position of the interface connector for the SER01 adaptor on the DMC - 30 unit.



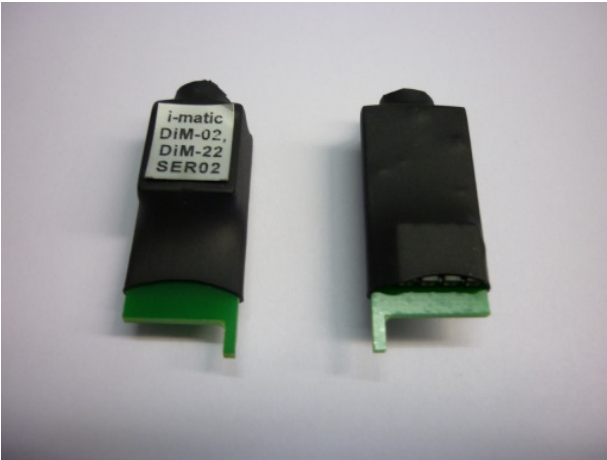
### 3.1.5 Connection on i-matic unit DiM - 24 (accumulator unit)

The following pictures show the position of the interface connector for the SER01 adaptor on the DiM - 24 unit.



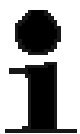
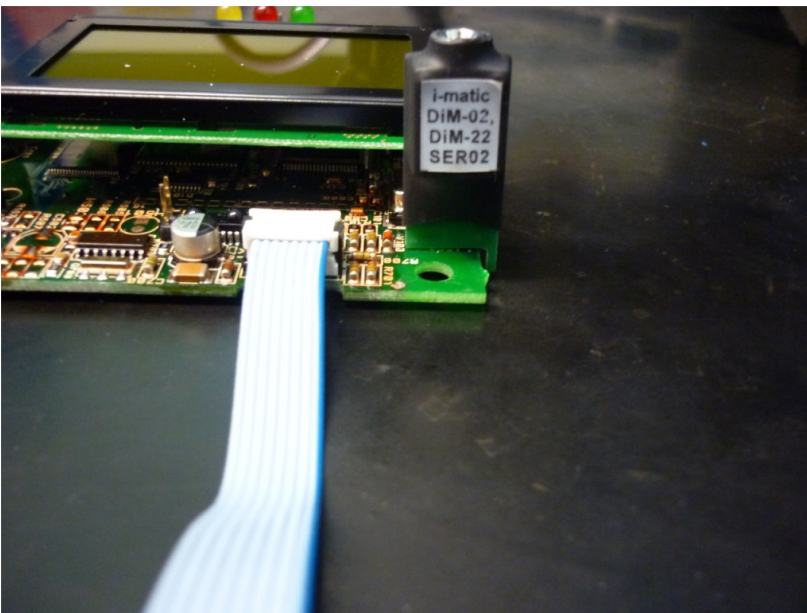
### 3.2 SER02 adaptor

The SER02 adaptor enables the serial access by means of a 4 pole female socket connector matching on a corresponding 4 pole pin connector in 2,54mm pitch. Reverse polarity protection is given by means of the special outline geometry of the adaptor board itself.



#### 3.2.1 Connection on i-matic display unit DiM - 02 (IR / IrII)

The following picture shows the position of the interface connector for the SER02 adaptor on the DiM - 02 unit.



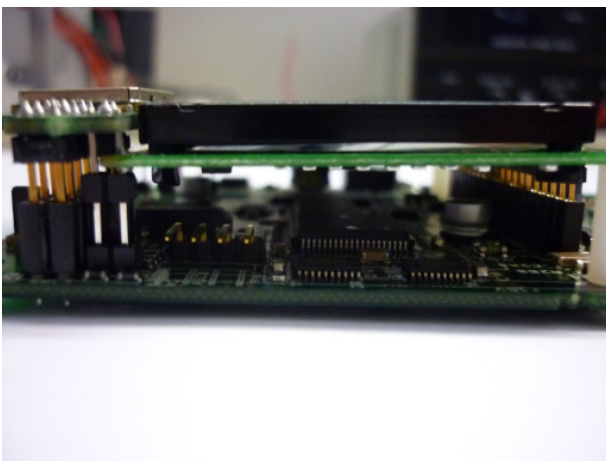
The correct plug in polarity of the adaptor is only given, if the expanded finger like board outline fits aside the display board edge.

### 3.2.2 Connection on i-matic display unit DiM - 22 (Bluetooth)

The following picture shows the position of the interface connector for the SER02 adaptor on the DiM - 22 unit.



The position of the 4 pole pin connector is located in a horizontal position underneath the mounted LCD panel on the electronic board edge. The expanded finger like adapter outline protects against an unintended reverse polarity. The adaptor has to be easily plugged in with a plug in depth of about 6mm.



### 3.3 SER03 adaptor

The SER03 adaptor enables the serial access by means of a 2x6 pole male pin connector matching on a corresponding 2x6 pole female socket connector in 2,54mm pitch.



Reverse polarity protection is not given by the design. The detection of the correct polarity is only possible by means of the matching labeling J8, J9, X6 which can be found on the adaptor as well as on the base board print.

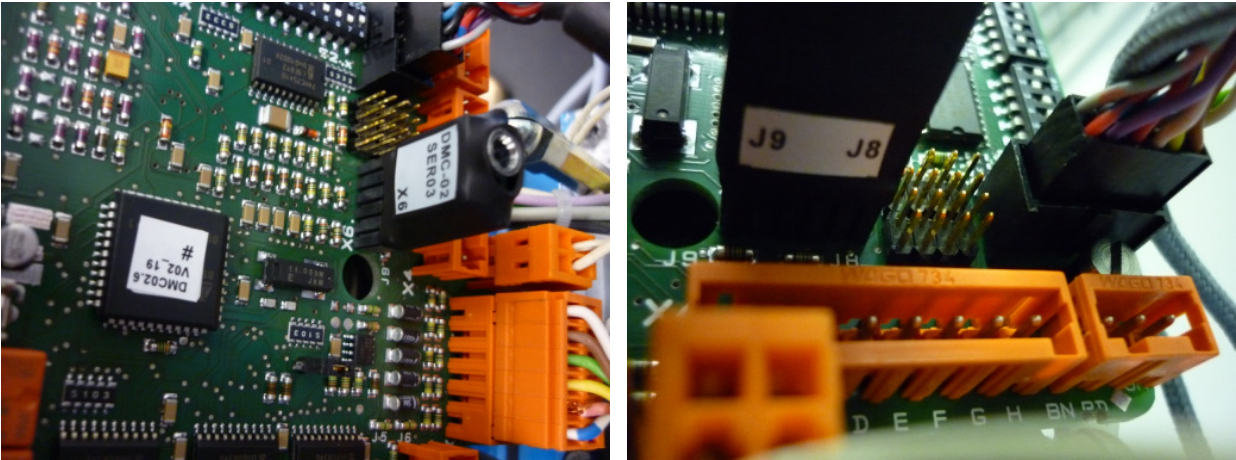
A mismatch of polarity may result in a defect of the adaptor and the base plate!



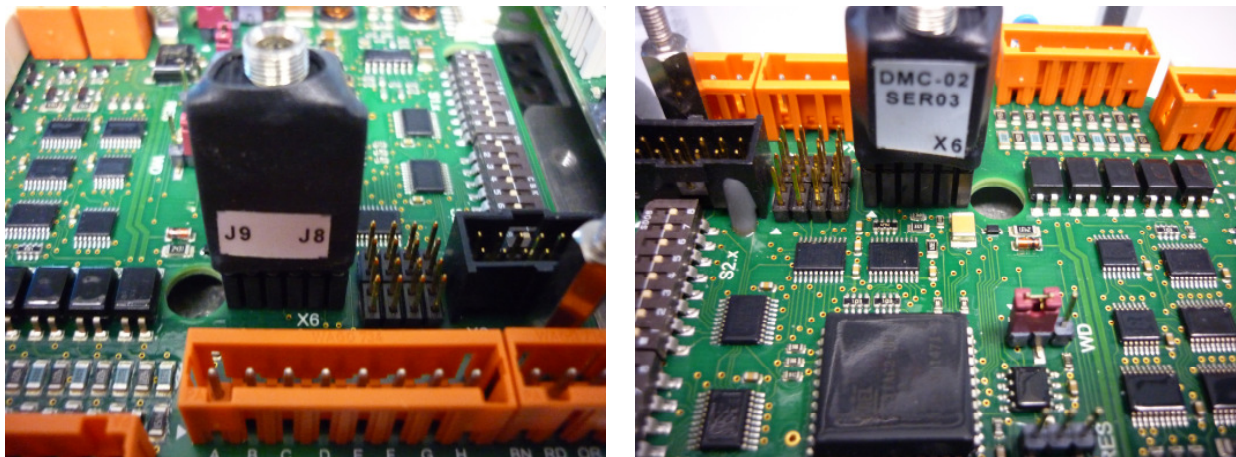


### 3.3.1 Connection on Matic C base plate DMC - 02

The following picture shows the position of the interface connector for the SER03 adaptor on the DMC - 02 unit in version DMC – 02.7.



The adaptor has to be connected as shown in the following pictures for DMC – 02.8



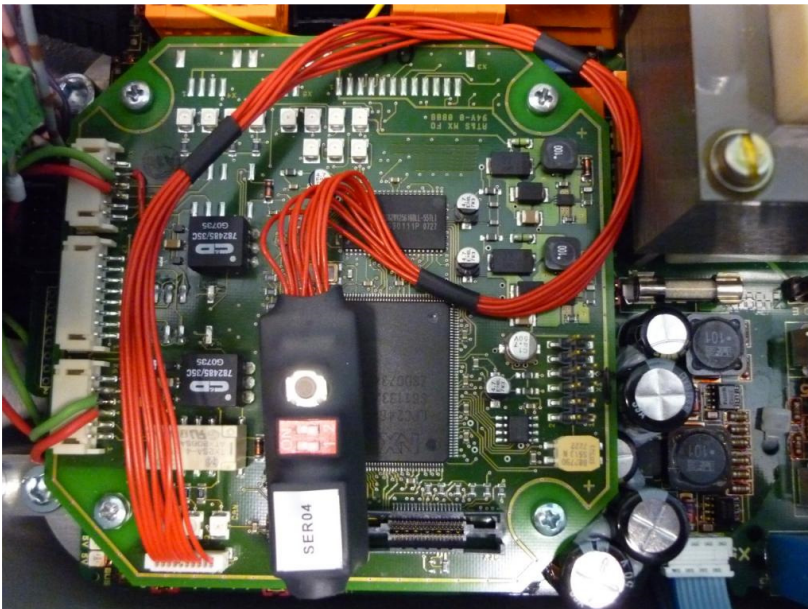
### 3.4 SER04 adaptor

The SER04 adaptor enables serial access by means of a 10 pole female reverse polarity protected connector. By means of an integrated push button, a reset of the attached electronic unit can be forced. Two DIL-switches S1 and S2 are available for different configuration of functionality. The settings of these switches are explained in detail in the documentation of the connected electronic.



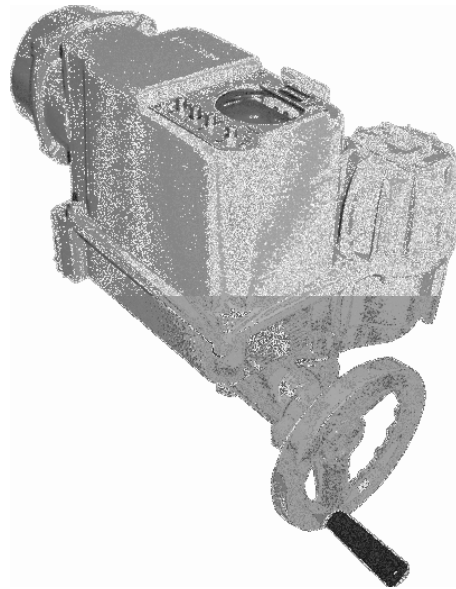
#### 3.4.1 Connection on i-matic interface unit DiM - 17 (modbus loop)

The following picture shows the position of the interface connector for the SER04 adaptor on the DiM - 17 unit.











Product range of electric actuators with integrated control unit



**Actuators of type  
Matic C:**

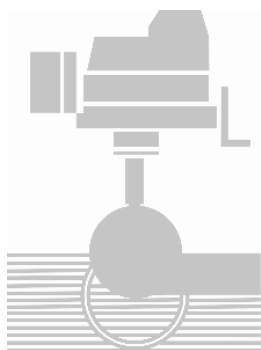
-  Multiturn actuators DMC30-DMC1000  
max. 1000 Nm
-  Part-turn actuators DPMC30-DPMC1599  
max. 1600 Nm
-  Linear actuators DMC15-DMC80  
max. 80 kN

**Actuators of type  
*i-matic*:**

-  Multiturn actuators DiM30-DiM1000  
max. 1000 Nm
-  Part-turn actuators DPiM30-DPiM1599  
max. 1600 Nm
-  Linear actuators DLiM15-DLiM80  
max. 80 kN

**Additional gear available:**

worm gear  
bevel gear  
spur gear



**DREHMO**

DREHMO GmbH  
Zum Eichstruck 10  
57482 Wenden / Germany  
Tel.: +49 2762 9850-206  
Fax: +49 2762 9850-210  
Internet: [www.drehmo.com](http://www.drehmo.com)  
eMail: [drehmo@drehmo.com](mailto:drehmo@drehmo.com)