

# Disk Drive Replacement for ABB Robotics S3-systems

## Description of Disk Drive Replacement (DDR)

The DDR is a replacement for old floppy disk drives and uses a flash memory for storage (SD-card), mounted in front. When installed, it will be handled as a normal disk drive, and the active disk is indicated on the display. Use step up/step down keys to change “floppy disk”. The maximum capability of “diskettes” is 200, and maximum 7 blocks/disk and parameters (similar to a standard disk drive). At power on, disk 001 will always be activated.

Status LED: Green light indicates normal status, red indicates an error on the SD-card/DDR.  
Yellow LED: Indicates busy/not available

**Important:** Do not make any disk operations with programming unit when yellow LED is active!

## Memory handling

DDR uses two memories:

1. The SD-card stores data on 200 ”disks”. Each disk represents an image file.
2. The RAM memory is loaded with data from the SD-card when a DDR-disk is activated with the step buttons, when mounting the SD-card or at power on.

The RAM memory is the working memory. No disk operations can be handled correctly before the RAM is loaded and yellow LED is turned off. When data is stored to the DDR, it will first pass trough RAM, and then be written to the SD-card. Remember not to force any operations, always wait until the yellow LED turns off before next step in the menus.

The SD-card alone cannot be read by any PC, because there is no file system present. A special program from Swerob “DDR Backup” has to be used to make backup images on the PC.

Do not format SD-card in PC!

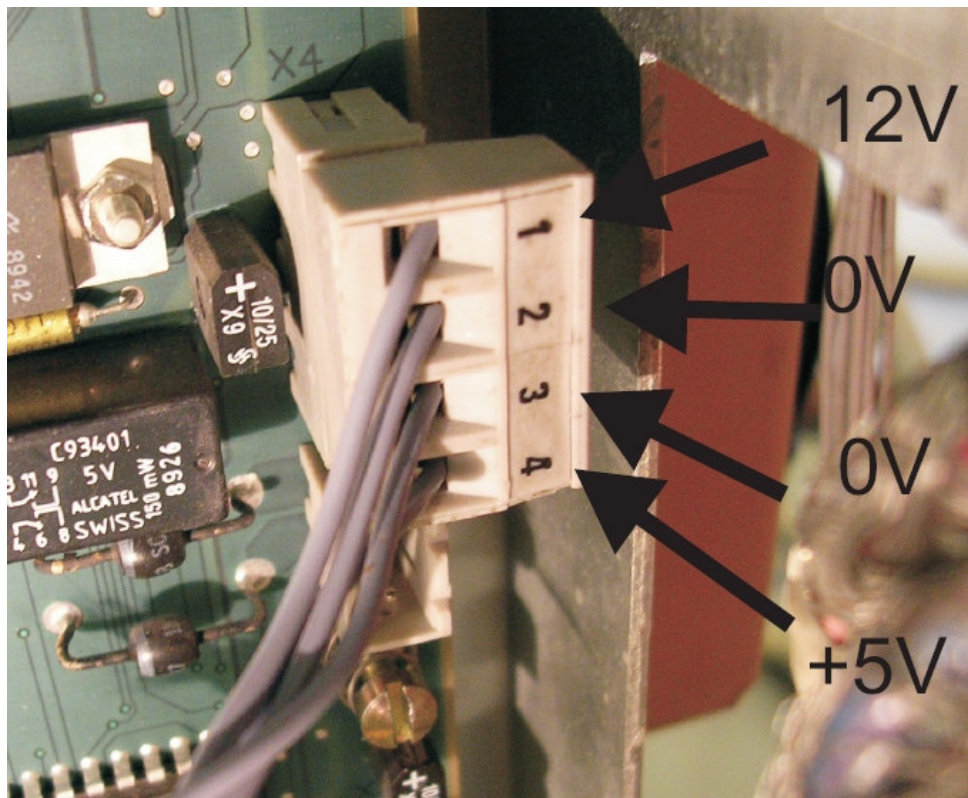
## Installation and transferring of programs/parameters:

M87-M90A systems with DSQC 202 or DSQC 215 computer boards requires modification on installation. When the modification is done properly, the green LED lights continuously on the floppy unit front.

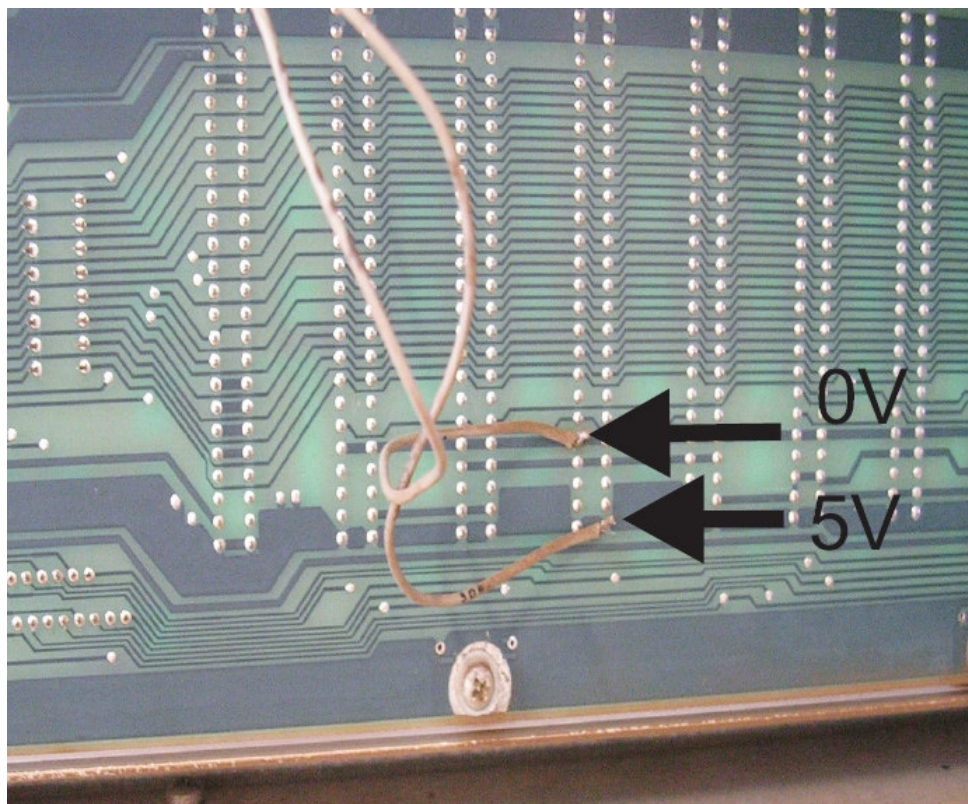
Systems with DSQC 230 computer boards work correctly with no modifications.

**Modification:**

1. Disconnect contact X4 connected to the DSQC215 (Picture 1)
2. Move wires from X4.3 and X4.4 and solder in them to backplane DSQC218 at X2. 5V=A32, 0V=C28 (Picture 2). Do not reconnect X4!



Picture 1



Picture 2

## **Copying of program blocks and parameters.**

### **Alternative 1, with switch cable 900060 (also see separate document)**

1. Move the switch into floppy mode, and load (from FS) the block or parameters from the floppy disk you want to copy to the robot system.
2. Alternate the switch to DDR mode. Change disk with up/down buttons, it will take 20-30 seconds to activate a disk.  
Tip: to access disk 200, press both buttons on the same time.  
Save to selected DDR “disk”

Repeat step 1 and 2 to copy more program blocks to the DDR.

**Important:** The 200 disks are NOT formatted, each disk has to be formatted before use. Use the menus “finger” → “disk” → “init” to format each disk separately.

### **Alternative 2, with manual interchange between DDR and floppy unit:**

1. Load the saved block you want to transfer to DDR from your original disk to the system. Do not power the system off.
2. Disconnect the floppy ribbon cable.
3. Connect **only** power cable to the DDR and wait until yellow LED is turned off.
4. Connect the ribbon cable to the DDR. If the yellow LED lights up, the ribbon cable is incorrectly socketed. Turn the contact to the other direction.
5. Change disk with up/down buttons, it will take 20-30 seconds to activate a disk.  
Tip: to access disk 200, press both buttons on the same time.
6. Save block and parameters to the selected, formatted disk.

If more disks/blocks have to be transferred, repeat step 1-6.

It is not necessary to power off/on system during this procedure!

**Important:** The 200 disks are NOT formatted, each disk has to be formatted before use. Use the menus “finger” → “disk” → “init” to format each disk separately.

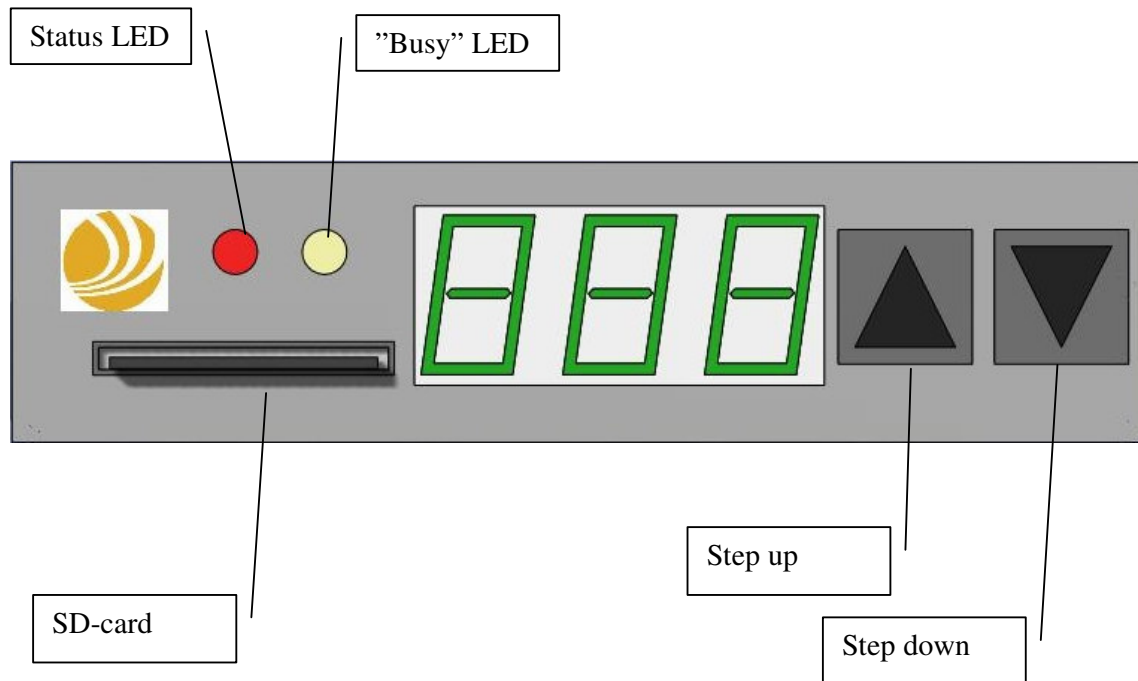
## **Backup to PC:**

It is now possible to backup S3 programs/parameters to a PC in a simple way.

The program “Swerob DDR PC Software” reads data from the SD-card and stores “diskettes” in backup folders which can be restored later. These files are not possible to edit.

The program is provided free of charge by Swerob.

## Overview



## Technical specification

Part number	900052
Interface	34 pin floppy interface
Capacity	200 x 720 kb (DD-disk)
Environmental	Operating Temperature 8 C – 50 C
Dimensions	143x103x27mm
Weight	0,5 kg
Power Voltage	DC 4,6 to 5,3 V
Typical current consumption	300mA
System Requirements	ABB S3 Industrial Robot System M87 – M93A
Warranty	One-year Limited
Supported SD FLASH cards	1 Gbyte SD card, Swerob art.nr 900054
Switch cable (optional)	900060