

# Display - Adapter

## NetDCUx

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F & S Elektronik Systeme GmbH  
Untere Waldplätze 23  
D-70569 Stuttgart  
Tel.: 0711/6772240    Fax: 0711/6772243



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# 1 LCD- Display Adapter

## 1.1 Overview

Display adapters make the connection between NetDCUx and commonly used LCD – Displays as easy as possible. Usual in trade display connectors could be simply added to complete the connection.

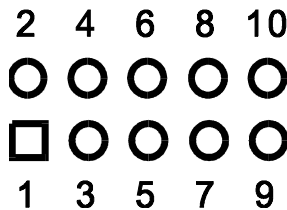
Note that the list of displays named for each adapter is not complete.

## 1.2 Counting of the Connector Pins

For One-Row-Connectors pin 1 is especially marked in the concerning front view figure and the counting of connectors is continuous.

All connections on the adapters, which prepared for Two-Row Connectors are treaded as follow: a square pad marks pin 1 and the row with pin 1 contains all odd-numbered pins (1, 3, 5, 7, etc.), corresponding to this, the row without pin 1 contains all even-numbered pins (2, 4, 6, 8, etc.).

Figure 1.1: Example for counting of connector pins



## 2 TFT Display Adapter

### 2.1 Adapter NetDCU- ADP/UNI- TFT

#### 2.1.1 Assembly

Figure 2.1 shows assembly of NetDCU- ADP/UNI- TFT adapter the size is 64mm x 30 mm. At Table 2.1 are function and design of the components listed.

Figure 2.1: Front view of NetDCU- ADP/UNI- TFT

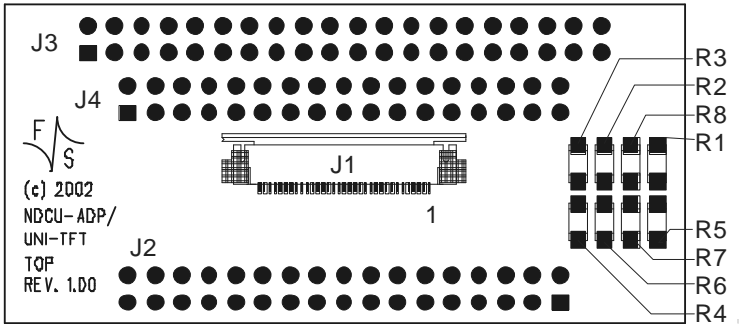


Table 2.1: Connector description

Description	Remarks
Input connector J2	Spacing 2.54 mm
Output connector J1	Pitch 0.50 mm
Output connectors J3, J4	Spacing 2.54 mm
Configuration jumpers R1 – R8	Type 1206

## 2.1.2 Connecting Table

The input connector J2 of adapter NetDCU-ADP/UNI-TFT can be directly plugged into the LCD interface connector of NetDCUx. The LCD voltage  $V_{CC}$  (5V or 3.3V) is determined by hardware configuration of NetDCUx LCD interface. The reference for the output connectors J1, J3 and J4 is shown in the Table 2.2. Connections assigned by \*) are necessary to configure the adapter for the applied display. To this end see Table 2.3 and note the displays data sheet.

Table 2.2: Connecting table

NetDCU-ADP/UNI-TFT				
PIN	Meaning			
	Input	Output		
	J2	J1	J4	J3
1	GND	GND	GND	CLP
2	R1	*)	CLP	GND
3	R0	*)	LIP	LIP
4	G5	*)	FRP	FRP
5	G4	$V_{CC}$	GND	GND
6	G3	$V_{CC}$	R0	GND
7	G2	M	R1	GND
8	GND	GND	R2	R0
9	B3	B5	R3	R1
10	B2	B4	R4	R2
11	B1	B3	R5	GND

NetDCU-ADP/UNI-TFT				
PIN	Meaning			
	Input	Output		
	J2	J1	J4	J3
12	B0	B2	GND	R3
13	G1	B1	G0	R4
14	G0	B0	G1	R5
15	B5	GND	G2	GND
16	B4	G5	G3	GND
17	GND	G4	G4	GND
18	NC	G3	G5	G0
19	CLP	G2	GND	G1
20	FRP	G1	B0	G2
21	M	G0	B1	GND
22	LIP	GND	B2	G3
23	NC	R5	B3	G4
24	GND	R4	B4	G5
25	V <sub>CC</sub>	R3	B5	GND
26	NC	R2	GND	GND
27	NC	R1	M	GND
28	GND	R0	V <sub>CC</sub>	B0
29	NC	GND	V <sub>CC</sub>	B1
30	NC	FRP	*)	B2
31	R2	LIP	*)	GND



NetDCU-ADP/UNI-TFT				
PIN	Meaning			
	Input	Output		
	J2	J1	J4	J3
32	R3	CLP	NC	B3
33	R4	GND	NC	B4
34	R5	-	NC	B5
35	-	-	-	GND
36	-	-	-	M
37	-	-	-	NC
38	-	-	-	V <sub>CC</sub>
39	-	-	-	V <sub>CC</sub>
40	-	-	-	*)

### 2.1.3 Specified Displays

Table 2.3 shows possible configurations for the LCD- Interfaces J1, J4 and J3. Take care; to set two jumpers in the same column causes a short- circuit.

Table 2.3: Configuration jumpers

Jumper	J1			J4		J3
	Pin			Pin		Pin
	2	3	4	30	31	40
R1	V <sub>CC</sub>	-	-	-	-	-
R2	-	V <sub>CC</sub>	-	-	V <sub>CC</sub>	-
R3	-	-	V <sub>CC</sub>	V <sub>CC</sub>	-	-
R4	-	-	GND	GND	-	-
R5	-	GND	-	-	GND	-
R6	GND	-	-	-	-	-
R7	-	-	-	-	-	GND
R8	-	-	-	-	-	V <sub>CC</sub>

Table 2.4 shows a range of displays, which could connect to NetDCU-ADP/TFT-UNI. The matching connectors are usual in trade and half manufactured available (for example [www.esskabel.de](http://www.esskabel.de)). The open end of the cable has to connect with a 34/ 40 terminal AMP-plug e.g. . The used film cable has to match connector ELCO 08-6210-033-340-800 or similar (33 way/ 0.5mm pitch).

Table 2.4: Specified Displays for NetDCU-ADP/TFT- UNI

Display	Adapter Connector	Matching Connector	Jumper for normal Operating State
Sharp LQ057Q3DC02	J1	Film-Cable	R6, R2, R4
NEC NL3224BC35-20	J1	Film-Cable	R6
Sharp LQ10D345	J4	DF9-31S	R3, R5
Philips LP064V1	J4	DF9-31S	R3
Sharp LQ64D341	J4	DF9-31S	None
Sharp LQ12S31	J3	DF9-41S	None
Hitachi TX31D30VC1CAA	J3	DF9-41S	None
NEC NL8060BC31-17	J3	DF9-41S	None

### 3 Passive Display Adapter

#### 3.1 Adapter NetDCU3- ADP/ KCG

##### 3.1.1 Assembly

Figure 3.1 shows assembly of NetDCU3- ADP/KCG adapter the size is 60mm x 30 mm. At Table 3.1: Connector description are function and design of the components listed.

Figure 3.1: Front view of NetDCU3- ADP/KCG

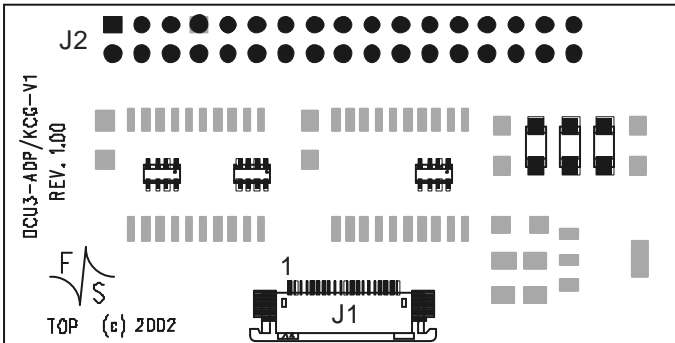


Table 3.1: Connector description

Description	Remarks
Output connector J1	Pitch 0.50 mm
Input connector J2	Spacing 2.54 mm

### 3.1.2 Connecting Table

The display- adapter NetDCU3- ADP/ KCG is especially created for the Kyocera KCG Displays Series. The input connector J2 is direct put up to NetDCUx LCD- Interface. The standard film cable for this display matches the output connector J1.

Table 3.2: Connecting Table

NetDCU3- ADP/ KCG		
PIN	Meaning	
	Input	Output
	J2	J1
1	NC	GND
2	NC	GND
3	NC	GND
4	G5	V <sub>33</sub>
5	G4	V <sub>33</sub>
6	G3	D0
7	G2	D1
8	NC	D2
9	B3	D3
10	NC	D4
11	NC	D5
12	NC	D6
13	NC	D7

NetDCU3- ADP/ KCG		
PIN	Meaning	
	Input	Output
	J2	J1
14	NC	$V_{CONST} (V_{EE}/10)$
15	B5	GND
16	B4	V33
17	NC	DISP
18	NC	CP
19	CLP	LOAD
20	FRM	FRM
21	NC	-
22	LIP	-
23	DEN	-
24	NC	-
25	$V_{CC}$	-
26	NC	-
27	NC	-
28	GND	-
29	$+V_{EE}$	-
30	NC	-
31	NC	-
32	R3	-
33	R4	-

NetDCU3- ADP/ KCG		
PIN	Meaning	
	Input	Output
	J2	J1
34	NC	-

### 3.1.3 Specified Displays

KCG047QV1AA-A21  
KCG0057QV1D\*-\*1  
KCG062HV1AA-A21  
KG057QV1CA-G0

## **4 Display Cable**

### **4.1 Cable NetDCU3- CAB/ KCS057**

The display cable NetDCU3- CAB/ KCS057 is a full manufactured connection between NetDCUx and the passive Kyocera LCD KCS057. The connection table is the same as shown in the documentation display under Kyocera KCS057.



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KCG0057QV1D*-*1 .....	11
KCG047QV1AA-A21 .....	11
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