

Automatic Temperature Compensation of LCD Display Contrast

This Technical Note describes the current level of support of the automatic temperature compensation of the LCD display contrast in the UniOP products.

This report is updated at firmware version 4.22.

Older units can be upgraded to this feature with a firmware upgrade.

Model	Firmware Version			Firmware Type
	4.20	4.22	5.02	
MD00R-02	No	No	No	32
MD00R-04	No	No	No	32
MD00G-04	No	No	No	32
MD03R-02	No	No	No	32
MD03R-04	No	No	No	32
MD02F-02	No	No	No	32
MD02R-04	No	No	No	32
CP01R-04	No	No	No	32
CP02R-04	No	No	No	32
CP01F-02	No	No	No	32
CP02F-02	No	No	No	32
CP04F-04	No	No	No	32
CP10G-04	No	No	No	32
CP11G-04	No	No	No	32
CP12G-04	No	No	No	32
CP13G-04	No	No	No	32
EF-02	-	-	-	32
EF-04	-	-	-	32
ER-04	No	No	No	32
MKDF-02	-	-	-	32
MKDF-04	-	-	-	32
MKDR-04	No	No	No	32
MKDR-05	No	No	No	32
MKDG-06	No	No	No	32
MKDG-07	No	No	No	32
ER-16	No	No	No	33
EL-16N	-	-	-	33
ER-25	No	No	No	33
ER-VGA	No	No	No	38
EL-25	-	-	-	33
EL-VGA	-	-	-	38

Model	Firmware Version			Firmware Type
	4.20	4.22	5.02	
BKDR-16	No	No	Yes	33
BKDR-16T	No	Yes	Yes	33
BKDC-16	Yes	Yes	Yes	37
BKDC-16T	Yes	Yes	Yes	37
BKDL-16	-	-	-	33
BKDR-46	-	-	Yes	38
BKDC-46	-	-	Yes	38
MKDR-16	No	No	No	33
MKDL-16N	-	-	-	33
MKDR-25	No	No	No	33
MKDL-25	-	-	-	33
MKDR-VGA	No	No	NO	38
MKDR-VGAT	No	No	Yes	38
MKDC-VGA	No	No	No	38
MKDC-VGAT	No	No	Yes	38
MKDL-VGA	-	-	-	38
MKDT-VGA	-	-	-	38
ERT-16	No	Yes	Yes	33
ECT-16	Yes	Yes	Yes	37
ELT-16	-	-	-	33
ER-25T	No	Yes	Yes	33
EL-25T	-	-	-	33
ERT-VGA	No	No	Yes	38
ECT-VGA	No	No	Yes	38
ELT-VGA	-	-	-	38
ETT-VGA	-	-	-	38
TP01R-16	No	No	No	33
TP01C-16	No	No	No	37
eTOP03	-	-	No	53
eTOP05	-	-	Yes	38
eTOP05E	-	-	Yes	58
eTOP12	No	No	Yes	38
eTOP12E	No	No	Yes	58
eTOP11	No	No	Yes	38
eTOP10	-	-	-	58
eTOP32R	No	No	Yes	38
eTOP32	No	No	Yes	58
eTOP31	No	No	Yes	58
eTOP30	-	-	Yes	58
eTOP40	-	-	Yes	58
eTOP50	-	-	-	58
ePAD03	No	No	No	52
ePAD04	No	No	No	52

Model	Firmware Version			Firmware Type
	4.20	4.22	5.02	
ePAD32	No	No	Yes	58
ePAD32T	No	No	Yes	58
ePAD31	No	No	Yes	58
ePAD31T	No	No	Yes	58
ePAD30	-	-	-	58

Table 1

The symbol ‘-’ in the table above means that the display technology has no contrast regulation.

The automatic contrast adjustment feature of the UniOP firmware requires an initial setup to allow proper operation.

The following steps are required for the initial setup of the contrast:

- 1) Turn on the unit in its final operation environment
- 2) Leave the panel powered and working without the screensaver for at least 20 minutes; this period of time allows the internal circuitry for temperature measurement to reach the operational condition
- 3) Adjust the contrast to the optimal level

From this point, and under a certain tolerance, the contrast of the display will be automatically controlled to ensure always the best visibility of the screen.

Note: LCD displays change their contrast as temperature changes with a rule that is approximately linear only within a certain temperature range, normally between 10 and 40 degrees. The automatic regulation gives the best results only inside this temperature range.

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