User Manual D-Line

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1 GENERAL

The D-LINE Scoreboards are very flexible in their use. The difference between indoor and outdoor models is only the brightness of the LED´s.

1.1 Parameter list

The parameter list should be designed so that the user can immediately understand which parameter they are adjusting by its name. Next to each parameter, there should be a label with an explanation.

NOTE: Old D-LINE models have different parameters.

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1.2 Set Time and Date

Icon	Function	Description
hh	Set daytime hours [P0]	This parameter adjusts the hours of the daytime
EE	Set daytime minute [P1]	This parameter adjusts the minutes of the daytime
SS	Set daytime seconds [P2]	This parameter adjusts the minutes of the daytime
dd	Set the day of the date [P3]	This parameter adjusts the day of the date
dE	Set the month of the date [P4]	This parameter adjusts the month of the date
dy	Set the year of the date [P5]	This parameter adjusts the year of the date
th	Display time for the daytime [P6]	Sets the display time for the daytime. To turn off the daytime display, set the value to 00.
td	Display time for the date [P7]	Sets the display time for the date. To turn off the date display, set the value to 00.
tt	Display time for the temperature [P8]	Sets the display time for the temperature. To turn off the temperature display, set the value to 00.
NOTE: If no temperature-sensor is connected, this setting is always internally set to 00!		

1.3 Setting temperature and time

1.3.1 Summertime setting

Area parameter sets the display mode for time and temperature
The following settings are available.

NOTE: The first digit in the setting controls the summertime change, while the second digit defines the display mode.**Summertime setting [P9]:**The first digit of the area setting determines whether the system automatically switches between summer and winter time.

Icon	Function	Description
Ar 0	Summertime switching [0x]	No internal switching, used for DCF-controlled clocks.
Ar E	European summertime [1x]	Summer time changing for Europe, used with internal clock, GPS and NTP-synchronization.
Ar U	USA summertime [2x]	Summer time changing for USA, used with internal clock, GPS and NTP-synchronization
Ar A	Australian summertime [3x]	Summer time changing for Australia, used with internal clock, GPS and NTP-synchronization

1.3.2 Time and Temperature Setting

The second digit of **the area setting** defines the display mode for time and temperature — such as 12-hour or 24-hour format, and Celsius or Fahrenheit.

Icon	Function	Description
Ar C	Celsius and 24h [x0]	Time in 24h mode and temperature in Celsius.
Ar c	Celsius and 12h [x1]	Time in 12h mode and temperature in Celsius
Ar F	Fahrenheit and 24h [x2]	Time in 24h mode and temperature in Fahrenheit
Ar f	Fahrenheit and 12h [x3]	Time in 12h mode and temperature in Fahrenheit

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1.4 Setting Brightness and Fade effect [A0]

This parameter controls brightness settings and visual effects. The first digit sets the appearance (fade effect), while the second digit adjusts the brightness level

1.4.1 Fade in effect

The first digit defines how the display switches between time and temperature.

Fade-in enables a smooth transition with a brightness effect.

Icon	Function	Description
	Fade-in off	Fading is not activated
	Fade-in on	Fading is activated

1.4.2 Brightness settings

This setting defines the display's brightness mode.

Icon	Function	Description
	Manual setting	The second digit of the brightness setting can be adjusted from 0 to 9 for manual brightness. Value 0 is minimum brightness, value 9 is maximum brightness. This adjustment you can also set by using the menu of your TdC8001 or Timy.
	Daytime-depending brightness [x3]	Brightness is set automatically, depending on the daytime
	Light sensor depending brightness [x4]	With this setting, the brightness is depending on the light-sensor. If the light sensor is not connected, it will be always maximum brightness

1.5 Serial interface setting [A1]

The **Interface parameters** setting consists of two digits: the first digit defines the display mode, while the second digit specifies the interface speed.

1.5.1 Display mode and Special Functions

Icon	Function	Description
	hh:mm:ss [0x]	Here you can adjust the different display modes and special functions of your display board.
	mm:ss:zh [1x]	
	BIB RK [2x]	
	Points [3x]	With this setting it will display the points in equestrian from the TdC800x. If the points are sent from the Timer S4, the display must be adjusted manually, see section 2
	Extended Mode [4x]	This is an advanced mode where you can configure the complete scoreboard by yourself. You can define, which byte shall be shown on which position of the display board. If the serial setting is ON this mode, you have some more parameters to adjust the mode These parameters are  ,...[A5, A6,...B0, B1,...] For the detailed description how to adjust these parameters, see section 2
	Slave/Master communication [5x]	
	PC communication [6x]	

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	Game console wired [7x]	
	Game console wire-less [8x]	

1.5.2 Transfer speed

The second digit of the setting is responsible for the transfer speed of the serial interface.

Icon	Function	Description
	ALGE-Standard [x0]	2400,N,8,1
	ALGE [x1]	4800,N,8,1
	ALGE [x2]	9600,N8,1
	ALGE [x3]	19200,N,8,1
	Special mode	
	Old devices like the S3 or SF2 [x4]	

1.6 Time-out for daytime [A2]

This setting defines the time delay after which the display board switches from serial display mode back to day-temp mode. If set to 00, the parameters described between point [missing reference] and point [missing reference] will no longer be visible.

1.7 Address-Setting [A3]

To use multiple D-LINE displays with an addressed protocol, you must assign a unique address to each display board. Typically, the first line is set to address 1, the second line to address 2, and so on. Depending on the sport, correctly configuring these addresses is important to ensure that the serial data from your timing device is displayed properly. Please refer to your timing device's manual for the correct display board settings specific to your sport.

1.8 Alarm-function (in the standard model not included)

Parameters C1–C6: Alert Configuration Mode

These parameters are optional and only take effect if parameter A4 is not set to "0".
Note: On nine-digit display boards, these parameters range from C3 to C8.

Two alert types are available: **Alert Type 0** and **Alert Type 1**. Each alert triggers an output signal that is directly connected to a horn. For both alert types, you can configure the number of impulses, the duration of each impulse, and the pause between impulses.

Do not confuse alert types with alert programs!

The **alert program** determines **when** an alert is triggered (based on the time of day), while the **alert type** defines the **sound pattern** of the alert.

Two alert programs can be stored. Each program can store up to 50 alert times.

Alarm program	
C1	Quantity of impulses for alert-type 0
C2	Duration of impulses in 1/10 sec for alert-type 0
C3	Break between two impulses in 1/10 sec for alert-type 0
C4-C6	Same as C1-C3, but for alert-type 1

Following this, up to 50 alert times can be set for the currently active alert program.

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00, 01, t: alert time 1, 00=HH, 01=MM, t = alert type 0 or 1

02, 03, t: alert time 2, 00=HH, 01=MM, t = alert type 0 or 1

⋮

98, 99, t: alert time 50, 00=HH, 01=MM, t= alert type, 0 or 1

If you indicate **"25"** in the hours position, the alert will activate every hour at the programmed minute.If you indicate **"29"** in the hours position, it marks the end of the alert list. The current value or setting is displayed next to each parameter. The blinking digit is the one you can adjust. For example, if "A0" is blinking and you press the button, the display will automatically move to the next parameter ("A1"). To change the setting of "A0," wait until the digit next to the parameter blinks, then enter your adjustment. If you make a mistake, simply wait until the parameter digit starts blinking again before making corrections.

After adjusting the parameters, the display will show the set time. The run time will start either when you press the button again or when the first impulse is received via the serial channel. This ensures precise clock synchronization.

For this reason, you should allow enough time to complete these adjustments before the run time begins. The time adjustment is always made using the 24 hour format, regardless of the "hour mode" settings.

2 EXTENDED DATA MODE

In this mode, each digit can be assigned one byte from the data string.

For example, on a 6-digit scoreboard, you can program the first two digits to show the BIB number and the last three digits to display the time in minutes and seconds (m:ss). In some sports, such as equestrian (using the Timer S4), the display must be programmed in this mode to show the points correctly.

Example: Configuration of a 6-digit display in order to show the points, sent by a Timer S4 (equestrian) in the middle of the display.

The datapackage of the Timer S4																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PZ	PE		.					H	H	:	M	M	:	S	S	.	z			Pz	Pe	CR	
PZ	PE							H	H	:	M	M	:	S	S	.	z	h	t	Pz	Pe	CR	

Parameter adjusting			
SE	E2		Extended protocol, 2400bps [A1-40]
Ad	00		Device adress 00 [A3 00]
1	00		First digit is always inactive [A5-00]
1:	00		Dot or double-dot after first digit is always inactive [A6-00]
2	01		Second digit will display points PZ [A7-01]
2:	00		dot or double-dot after second digit is always inactive [A8-00]
3	02		Third digit will display points PE [A9-02]
3:	17		Will show the dot which is sent after the full second [B0-17]
4	21		Fourth Digit will show points Pz [B1-21]
4:	00		Dot or double-dot after fourth digit is always inactive [B2-00]
5	22		Fifth digit will show points Pe [B3-22]
5:	00		Dot or double-dot after fifth digit is always inactive [B4-00]
6	00		Sixth digit is always inactive [B5-00]

In the older Models of the D-LINE, the first digit is A5 and then it is continuing with A6-A9, after A9 it starts with B0….

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3 SPECIAL FUNCTIONS

The D-LINE scoreboards can also be used as a stand-alone Stopwatch, Countdown clock, or Counter. To activate one of these modes, connect a manual button (model 023-xx) to the green and red banana plugs on the D-LINE scoreboard. The D-LINE remembers the last used function, so when you connect and press the manual button, it will automatically switch to the previously used program.

To select the Stopwatch, Countdown, or Counter mode, you need to adjust the parameter  as described below.

3.1 Stopwatch – Countdown

To switch between Stopwatch and Countdown modes, press and hold the manual button until the display changes to the other mode (about 10 seconds). On the display, you can see the difference between these 2 modes by following detail.

Stopwatch will display 00:00.00 and Countdown will display a time where the first digit is blinking.

-  hh:mm:ss [A1-0x] – Time format for Stopwatch and Countdown!
-  mm:ss:zh [A1-1x] – Time format for Stopwatch and Countdown!

3.1.1 Adjusting the Countdown time

After holding the manual button for about 10 seconds to enter Countdown mode, the first digit will start blinking.

Each time you press and release the button, the blinking digit will increase by one. Once you reach the desired value for that digit, press and hold the button again to move the blinking to the next digit. After adjusting the last digit, the display will show the total countdown time without any blinking.

To switch between Count-up (Stopwatch) and Count-down (Countdown) modes, press and hold the manual button until the display changes (about 10 seconds).

You can tell the difference between these two modes by the display:

- Stopwatch mode shows a **0** in the last digit.
- Countdown mode shows a **number** with the **first digit blinking**.

3.2 Counter

This Counter mode enables counting functionality. A short button press counts up (or down, depending on the counting direction), while holding the button for 2 seconds counts down (or up).

3.2.1 Adjusting the Counter

After holding the manual button for about 10 seconds to enter Count-down mode, the first digit will start blinking.

Each time you press and release the button, the blinking digit will increase by one. Once you reach the desired value for that digit, press and hold the button until the blinking moves to the next digit.

After adjusting the last digit, the display will show the total count-down time without blinking.

Pressing the manual button now will decrease the counter, holding the button for about 2 seconds will count up, and holding it for about 5 seconds will reset the counter to the start value.

4 TECHNICAL DATA

Type	Amount of digits	Figure Height	Height	Width	Deep	Hangers	Max. Dist.	Power (W)
D-LINE57-I-3-E0	3	57	130	400	60	200	25m	10
D-LINE57-I-4-E0	4	57	130	400	60	200	25m	11

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D-LINE57-I-6-E0	6	57	130	500	60	200	25m	13
D-LINE100-I-4-E0	4	100	180	600	60	400	50m	10
D-LINE100-I-6-E0	6	100	180	800	60	500	50m	13
D-LINE150-I-3-E0	3	150	250	600	60	300	75m	8
D-LINE150-I-4-E0	4	150	250	730	60	430	75m	10
D-LINE150-I-5-E0	5	150	250	956	60	556	75m	11
D-LINE150-I-6-E0	6	150	250	956	60	556	75m	13
D-LINE250-I-3-E0	3	250	350	850	60	450	125m	24
D-LINE250-I-4-E0	4	250	350	1100	60	700	125m	29
D-LINE250-I-5-E0	5	250	350	1493	60	1093	125m	35
D-LINE250-I-6-E0	6	250	350	1493	60	1093	125m	41
D-LINE450-I-4-E0	4	450	600	1900	60	1500	225m	45
D-LINE450-I-6-E0	6	450	600	2490	60	2090	225m	63
D-LINE600-I-4-E0	4	600	800	2490	60	2090	270m	59
D-LINE600-I-6-E0	6	600	800	3400	60	3000	270m	83

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