

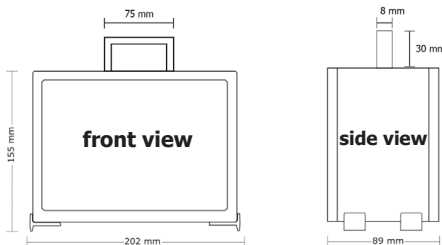
## MULTICHANNEL DATA LOGGER DL7L

### Features

- Able to be carried anywhere
- Multi-channel data logger is available input up to 42 input signal with universal input are voltage, current, RTD and all type of thermocouple
- 7" touchscreen colour data logger with displayed channels up to 100
- 2 GB internal data memory, advanced data logging and USB port on front panel for downloading data
- Included Ethernet and RS-485 port for Modbus RTU/TCP
- Dedicated PC software for commissioning and archive data visualization



### Drawing



Unit : millimeter

### Technical Data

**Input of modules :** } *In table of modules*

**Accuracy :**

**Resolution :**

**Type of display :** touch screen, LCD TFT 7" 800x480 px, LED backlight

**Display size :** 152 X 91 mm

**Internal memory capacity :** 2 GB (approx. 125 million acquisitions)

**Operating Temperature :** 0...50°C

**Operating humidity :** 5 .. 95% (without steam condensation)

**Degree of pollution :** PD2

**Communication :** USB, RS-485 and Ethernet

**Power supply :** 24 Vdc (20...30 Vdc)

**Max. power consumption :** 48W ( when installed 7 modules )

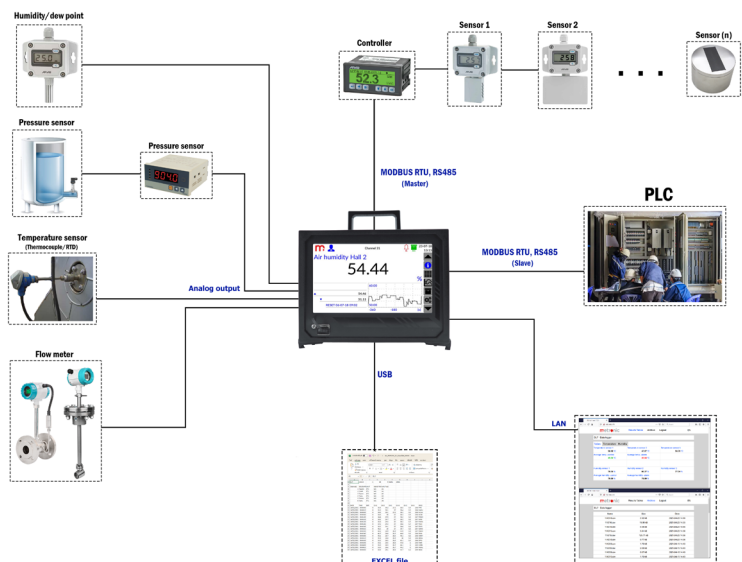
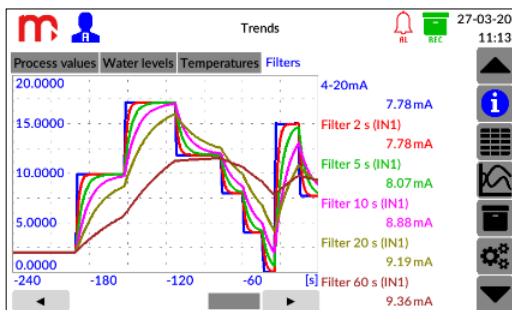
**Dimension :** 155 x 202 x 89 mm (WxHxD)

**Material :** non-flammable Lexan Resin 920

**Weight :** 800 g

**Protection class :** IP20

### Example for application



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## MULTICHANNEL DATA LOGGER DL7L

**Table of input module**

No.	Code	Name	Number of input (channels)	description
1	11	IN6I(24V)	6 channels	0-20 mA, 4-20mA with auxiliary power
2	23	IN6T	6 channels	RTD, Thermocouple, linear resistance, linear voltage
3	41	IN6V	6 channels	±10V, 0..10V, 2...10V, 0...5V and 1...5V
4	53	IN6	6 channels	3ch x RTD or thermocouple 3ch x 4-20mA or 0-10V
5	55	IN4SG	4 channels	Strain gauges
6	61	IN6D	6 channels	State mode, Frequency, Pulse counting
7	71	2RS485(24V)	2 ports	RS485 ports in the Modbus RTU with auxiliary power
8	75	1HRT	1 ports	One HART (4-20 mA) port

**Table of output module**

No.	Code	Name	Number of output (channels)	description
1	81	OUT6RL	6 channels	Solid state relays (SSR) 24 Vac/0.5A or 36Vdc/0.5A
2	91	OUT3	3 channels	0-20mA, 4-20mA, 0-5V, 1-5V, 0-10V, 2-10V

*note : For more information of input and output module, please see in page 4 to 6*

Results Tables					
Values	Temperatures [°C]	Humidity [%]	Water levels [m]	Pressure [MPa]	
Ambient temperature	22.98°C	Temperature - corridor	18.97°C	Temp. Hall 1	23.77°C
Amount of hot water	17.58l/s	Amount of cold water	5.18l/s	Valve 1 - gas flow	34.71l/s
Air humidity - office	58.807%	Air humidity - archive	49.848%	Air humidity Hall 1	57.762%
Temperature - boiler room	33.7°C	Furnace temperature	384.8°C	Temp. - water in the pool	22.9°C
Water level. Tank 1	2.063m	Water level. Tank 2	4.6126m	Water level - pool	6.024m

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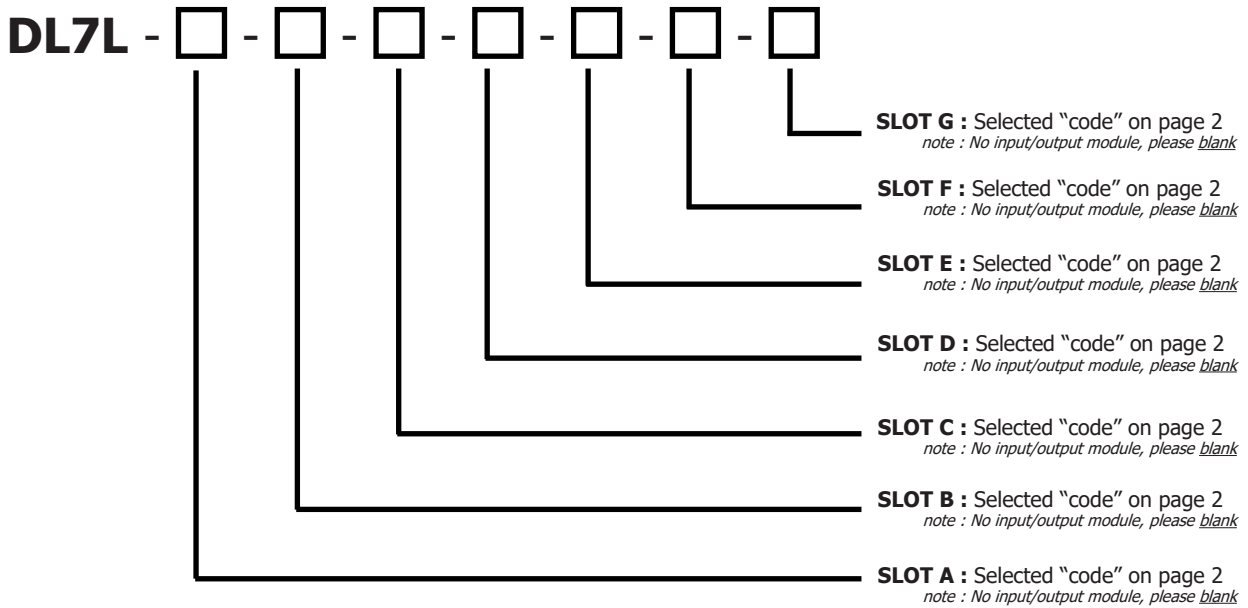
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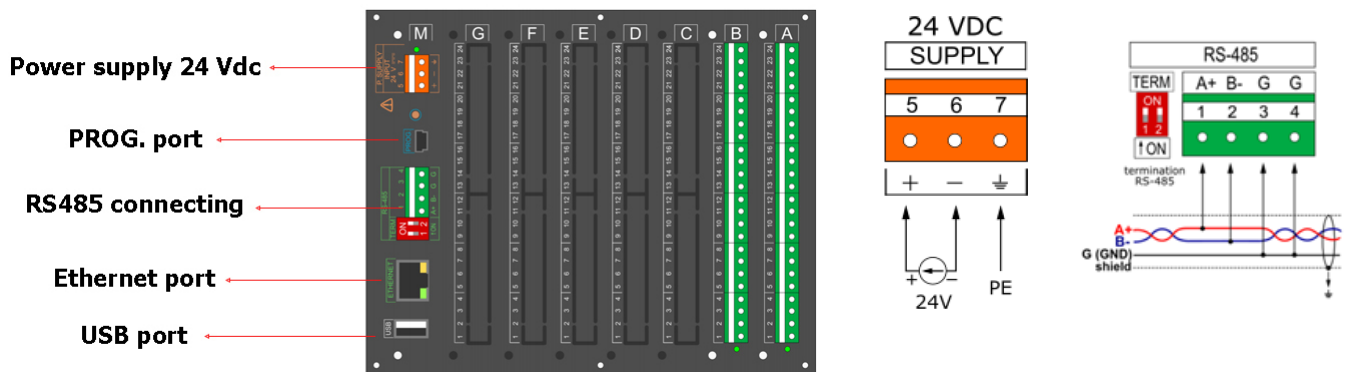
## MULTICHANNEL DATA LOGGER DL7L

### Ordering code



**Example : DL7L-23-23-41-11-81-91**  
 Multichannel data logger DL7L with 6 Slots  
 Slot A : IN6T  
 Slot B : IN6T  
 Slot C : IN6V  
 Slot D : IN6I(24V)  
 Slot E : OUT6RL  
 Slot F : OUT3

### Wiring Diagram



*note : the rear side is different from picture, it will depend on input/output module selection*

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## MULTICHANNEL DATA LOGGER DL7L

### Table of input modules

#### 1. IN6I (24V) - 0/4-20mA INPUT with AUXILARY POWER

<b>Number of inputs</b>	6 channels
<b>Measuring range</b>	0-20mA, 4-20mA
<b>Resolution</b>	0.001mA
<b>Accuracy</b>	±0.1% measuring range @ 25°C
<b>Auxiliary power for sensor</b>	24 VDC ±15% / max 22 mA

#### 2. IN6T - TEMPERATURE INPUT

<b>Number of inputs</b>	6 channels	
<b>Sensor type</b>	RTD	<i>Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000, Cu50, Cu53, Cu100, KTY81, KTY83, KTY84</i> <i>*note : see a mesureing range and accuracy on page 7</i>
	Linear resistance	<i>0...4700Ω</i>
	Thermocouple	<i>type J, K, N, R, S, T, E, B, L and U</i> <i>*note : see a mesureing range and accuracy on page 7</i>
	Line voltage	<i>140 .. +140 mV</i>

#### 3. IN6V - VOLTAGE TYPE INPUT

<b>Number of inputs</b>	6 channels
<b>Measuring range</b>	±10V, 0-10V, 2-10V, 0-5V, 1-5V
<b>Resolution</b>	0.0001V
<b>Accuracy</b>	±0.1% measuring range @ 25°C

#### 4. IN6 - UNIVERSAL ANALOG INPUTS

<b>Number of inputs</b>	6 channels; 3 channels for RTD or TC + 3 channels for 4-20mA or 0-10VDC	
<b>Sensor type</b>	RTD	<i>Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000, Cu50, Cu53, Cu100, KTY81, KTY83, KTY84</i> <i>*note : see a mesureing range and accuracy on page 7</i>
	Thermocouple	<i>type J, K, N, R, S, T, E, B, L and U</i> <i>*note : see a mesureing range and accuracy on page 7</i>
		±10V, 0-10V, 2-10V, 0-5V, 1-5V
	0-20 mA; 4-20 mA	

## MULTICHANNEL DATA LOGGER DL7L

Table of input modules

### 5. IN4SG - STRAIN GAUGE INPUT

<b>Number of inputs</b>	4 channels
<b>Sensore type</b>	Strain gauge sensor, strain gauge (quarter-, half-, full-bridge configuration available)
<b>Measuring range</b>	-30...+30 mV
<b>Resolution</b>	0.0001 mV
<b>Accuracy</b>	< ±0,1% of 10 mV range

### 6. IN6D - BINARY INPUTS

<b>Number of inputs</b>	6 channels
<b>Sensor type</b>	State tracking, Frequency (0.1...1000 Hz), Counting pulse (freq. range 0...100 Hz)
<b>Measuring range</b>	Frequency - 0.1...1000 Hz Counting pulse - freq. range 0...100 Hz
<b>Resolution</b>	0.1 Hz
<b>Accuracy</b>	±0.01% measuring range

### 7. 2RS485(24V) - RS485 PORTS INPUT with AUXILARY POWER

<b>Number of port</b>	2 port
<b>Max. process value read</b>	25 values (one or both ports in total)
<b>Max. bus load</b>	32 receivers / transmitter
<b>Transmission protocol</b>	Modbus-RTU Master
<b>Max. length of line</b>	1200 m
<b>Auxiliary power for sensor</b>	24 VDC ±15% / max 200 mA

### 8. 1HRT - HART (4-20 mA) PORT INPUT

<b>Transmission protocol</b>	<ul style="list-style-type: none"> <li>Rev 4, Rev 5, Rev 6, Rev 7</li> <li>Primary Master or Secondary Master</li> </ul>
<b>Functions</b>	Supported 0, 1, 3, 6, 9 commands <ul style="list-style-type: none"> <li>Reading PV, SV, TV, FV and DVC variables</li> <li>Reading the Long Address (rev 5, rev 6, rev 7)</li> <li>Changing the Short Address</li> <li>Reading the unique identifier frame (test)</li> </ul>
<b>Max. number of devices</b>	15 devices
<b>Maximum number of variables read</b>	25 reading
<b>Multidrop operating mode</b>	Yes, up to 15 devices (multidrop)
<b>Loop power supply</b>	24 VDC (max 60 mA)
<b>Analog reading of the 4-20mA line</b>	No

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## DL7L

### Table of output modules

<b>1. OUT6RL – RELAY OUTPUTS</b>	
<b>Number of outputs</b>	6 channels
<b>Sensor type</b>	Solid-state relays (SSR)
<b>Max. voltage / current</b>	24 VAC/0.5 A or 36 VDC/0.5 A
<b>2. OUT3 - ANALOG OUTPUTS</b>	
<b>Number of outputs</b>	3 channels
<b>Output type</b>	Active current source
<b>Range (program selected)</b>	0...20mA, 4...20mA and 0...24mA
<b>Resolution</b>	12 bit / 0.006 mA
<b>Accuracy</b>	@ Temp +25 °C ; ±0.15% F.S. @ Temp -40...+50 °C ; ±0.3% F.S.
<b>Voltage output :</b>	
<b>Output type</b>	Dc voltage source
<b>Range (program selected)</b>	0...5Vdc and 0..10Vdc
<b>Resolution</b>	12 bit / 1.25 mV for 0 - 5 V and 2.5 mV for 0 - 10 V
<b>Accuracy</b>	@ Temp +25 °C ; ±0.1% F.S. @ Temp -40...+50 °C ; ±0.3% F.S.

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### Table of RTD sensors

SENSOR TYPE	MEASURE RANGE	ACCURACY
<b>PT100, PT200, PT500, PT1000</b> (EN 60751+A2:1995)	-200...+850°C	±0.5°C (typically ±0.3°C)
<b>NI100, NI120, NI1000</b> (DIN43760 /08-1985)	-60...+250°C	±0.5°C (typically ±0.3°C)
<b>CU50, CU53, CU100</b> (GOST6651-2009)	-180...+200°C	±0.5°C (typically ±0.3°C)
<b>KTY81</b> (NXP REV05-25.04.2008)	-55...+150°C	±0.5°C
<b>KTY83</b> (NXP REV06-4.04.2008)	-55...+175°C	±0.5°C
<b>KTY84</b> (NXP Rev06-8.05.2008)	-40...+300°C	±0.8°C
Linear resistance	0...4700 Ω	±0.5 Ω (typically ±0.3 Ω)

### Table of Thermocouple sensors

SENSOR TYPE	MEASURE RANGE	ACCURACY
<b>J</b> (FE-CUNI) (EN60584-1:1995)	-210...+1200°C (compensation range -100...+300°C)	±1.0 °C (typically ±0.5 °C) (without compensation)
<b>K</b> (NiCr-NiAl) (EN60584-1:1995)	-270...+1372°C (compensation range -100...+300°C)	±1.0 °C (typically ±0.5 °C) (without compensation)
<b>N</b> (NiCrSi-NiSi) (EN60584-1:1995)	-270...+1300°C (compensation range -100...+300°C)	±2.0 °C (typically ±1.0 °C) (without compensation)
<b>R</b> (PtRh 13-Pt) (EN60584-1:1995)	-50...+1768°C (compensation range -50...+300°C)	±2.0 °C (typically ±1.0 °C) (without compensation)
<b>S</b> (PtRh 10-Pt) (EN60584-1:1995)	-50...+1768°C (compensation range -50...+300°C)	±2.0 °C (typically ±1.0 °C) (without compensation)
<b>T</b> (Cu-CuNi) (EN60584-1:1995)	-200...+400°C (compensation range -50...+300°C)	±1.0 °C (typically ±0.5 °C) (without compensation)
<b>E</b> (NiCr-CuNi) (EN60584-1:1995)	-270...+1000°C (compensation range -50...+300°C)	±1.0 °C (typically ±0.5 °C) (without compensation)
<b>B</b> (PtRh30-PtRh6) (EN60584-1:1995)	+250 °C .. +1820°C (without compensation)	±2.0 °C (typically ±1.0 °C) (without compensation)
<b>L</b> (Fe-CuNi) (DIN43710)	-200...+900°C (compensation range -50...+300°C)	±1.0 °C (typically ±0.5 °C) (without compensation)
<b>U</b> (Cu-CuNi) (DIN43710)	-200...+600°C (compensation range -50...+300°C)	±1.0 °C (typically ±0.5 °C) (without compensation)
Line voltage	-140 .. +140 mV	<0.2% full range

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