

LIEDER TYPE L

DIGITAL CONTROLLER 96 x 96 mm



Le sens de la mesure sur toute la gamme

F.T. : 203A-04/00

- * *2 input signals, 1 logic input*
- * *2 setpoints*
- * *Setpoint profiles generator*
- * *ON/OFF, PID, Heat-Cool, Auto-tune algorithms*
- * *Triple galvanic insulation*
- * *2 analog outputs, motorvalve drive*
- * *Configuration on front panel through a PC software or through infrared transfer*
- * *Digital communication, RTU Modbus*



GENERAL FEATURES

LIEDER 'L' controller belongs to the second generation of the MCC single loop digital controllers. This instrument enjoys more than twelve years experience in the industrial process control. Two input signals, one logic input, one linearization on 20 segments and a 12 sequences profile generator are standard features as well as three different algorithms for the motorvalve control. As a major asset, LIEDER 'L' is easy to implement with its two different configuration tools : one Windows software and one IRDA remote control that allows a bi-directional transfer of the controller's main data and program.

INPUTS / OUTPUTS RESOURCES

The main input admits all the standard process signals as well as frequency inputs. The second input can be dedicated to the remote setpoint or to the motorvalve position retransmission and as such, accepts the temperature signals as well as potentiometer and voltage ones. The logic input, dry contact, NAMUR direct or voltage allows the setpoint commutation, the output driving or maintaining, the launching of a setpoint profile. In the four option slots some relay, retransmission, auxiliary power supply or digital RS communication boards can be installed.



PROCESSING FUNCTIONS

In a 96 x 96 mm format, the following processing functions are integrated :

- Linearization on 20 segments that can be allocated to the input signal 1 or 2.
- A 12 sequences program generator (ramp + soak).
- Heat / Cool and motorvalve algorithms.
- PID actions auto-tune according to the ZIEGLER-NICHOLS method.
- Four software alarms.

In this way, LIEDER 'L' owns the same processing functions than the controllers of greater size.

AN ERGONOMIC FRONT PANEL

The main display is dedicated to the input whereas the lower display enables to scroll the setpoint, the control output or the PID parameters.

The 5 LED indicate the operating mode (manual or automatic), the status of the local or remote setpoint,

and of the alarms.

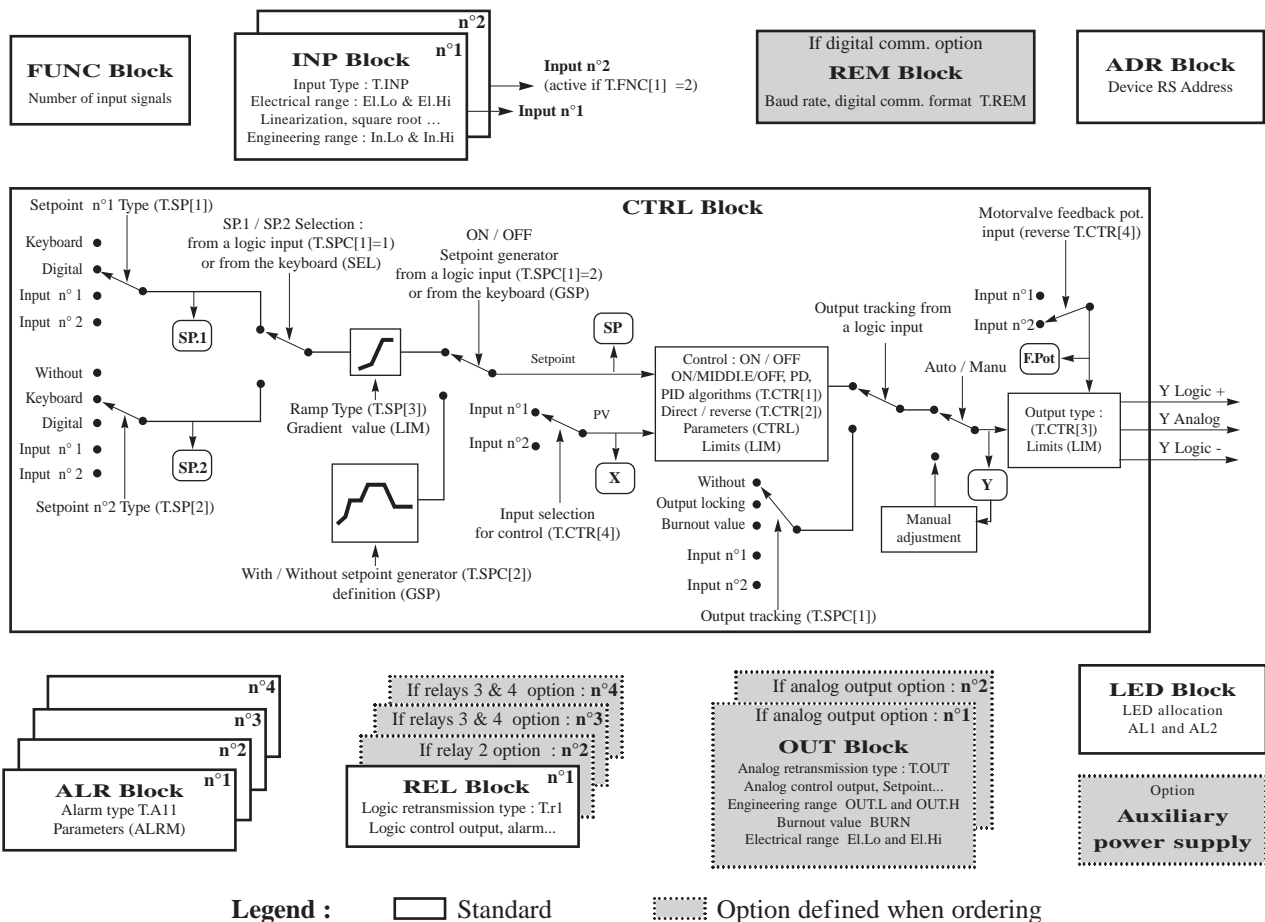
The whole configuration of the controller as well as its manual control can be performed with the four keys. A window located on the front panel is kept for the infrared receiver for the bi-directional transfer of the configurations.

A SIMPLIFIED IMPLEMENTATION

The configuration of LIEDER 'L' is performed on the front panel or through the PC with the "OPUS" windows software.

Furthermore, MCC is the first manufacturer to offer the infrared transmission of the configuration for a panel-mounted controller.

A portable terminal, remote control type loads or transfers the whole configuration of LIEDER 'L' through infrared. The main parameters of the controller can be conveyed through this medium. This is a relevant function for large quantities business and for OEM applications as the configuration can be instantaneously duplicated without any additional wiring.



Legend : Standard Option defined when ordering

TECHNICAL SPECIFICATIONS

ANALOG INPUTS (Input channel, setpoint and/or feedback potentiometer)	Thermocouple K : -270 to 1372 °C	Thermocouple N : -270 to 1300 °C
	Thermocouple J : -210 to 1200 °C	Thermocouple B : 0 to 1820 °C
	Thermocouple T : -270 to 360 °C	Thermocouple E : -270 to 1000 °C
	Thermocouple S : -50 to 1767 °C	Thermocouple W ₅ : 0 to 2300 °C
	Thermocouple R : -50 to 1767 °C	Special couples : 22/50/90 mV
	RTD 100 Ω at 0 °C : 3 wires, -200 to 650 °C	
	Resistance : 3 wires, 0 to 500 Ω	
	Potentiometer : 0 - 100Ω / 0 - 500Ω / 0 - 100KΩ	
	Continuous voltage : ± 22 mV / ± 50 mV / ± 90 mV	
	Continuous current : ± 20 mA	
DIGITAL AND FREQUENCY INPUT	To the same potential than the analog input : dry contact, NAMUR and U < 30 Vdc Logic level 1 : U > 2,6 Vdc - Open contact, NAMUR sensor with metal part Logic level 0 : U < 2,4 Vdc - Closed contact, NAMUR sensor without metal part Maximum frequency : 10 KHz / Periodmeter : 0,002 to 1000 s (resolution 1,2 μs)	
OUTPUTS	Relay n° 1 and optional relays n° 2, 3 and 4 : 2 A, 250 Vac or 30 Vdc Selectable NO or NC contact Optional outputs n° 1 and 2 : Current : 4 - 20 or 0 - 20 mA, maximum load 750 Ω Voltage : 0 - 10 V or on output 2 (0 - 5 V), < 20 mA Digital RS : Modbus /Jbus RTU slave, 1 pair, < 38 400 bauds RS485 multipoints (maximum distance 1 Km) RS232 single point (maximum distance 30 m)	
CONTROL PARAMETERS	Proportional : 0,2 to 999,9 %, resolution 0,1 %	
	Integral : 0,02 to 99,99 min, resolution 0,01 min	
	Band centering : 0 to 100 % output	
	Derivative : 0 to 2 000 s, resolution 1 second	
	Hysteresis : 0 to 20 % of the measurement range, resolution 0,1 %	
	Cycle time : 1 to 2 000 s, resolution 1 second	
ADJUSTABLE RAMPS	Setpoint (up or down) : 0,1 to 999,9 engineering unit / min Output (when starting up or pre-defined rate) : 0,01 to 9 999 % / min (inactive if > 9 990)	
CYCLE TIME	200 ms	
AUXILIARY POWER SUPPLY	Option : 22 to 28 Vdc, < 30 mA Constant insulation voltage < 265 Vrms, not insulated from the inputs	
ACCURACY	0,1 % on the linear inputs 0,1 % of the nominal extent on the TC and RTD inputs + internal cold junction compensation (0,6 °C at 25 °C + 0,06 °C / °C)	
RESOLUTION	0,01 % of the nominal extent	
TEMPERATURE DRIFT	60 ppm / °C	
POWER SUPPLY	85 to 265 Vac/dc or 18 to 54 Vdc in option, consumption 6 VA	
DISPLAY	4 digits 7 segments 14 mm, red for the input 4 digits 7 segments 10 mm, green for the setpoint and for the control parameters 5 LED for the digital RS, the control output or the alarms, the setpoint evolution and the manual mode	
MECHANICAL CHARACTERISTICS	Dimensions : 96 x 96 x 120mm behind the collar Panel cut-out 92 x 92mm Weight : 375 g Removable for replacement Terminals to be screwed : 2 x 1,5 mm ²	Protection : IP 65 on front panel Black front panel } auto-extinguishible Black casing } NORYL
CLIMATIC CONDITIONS	Working temperature : 0 - 50 °C, Storage temperature : -20 to +70 °C Humidity : 10 to 90 % without condensation	
STANDARDS	Low voltage security : EN61010-1, CAT III / 265 Vrms, Pollution degree : 2 EMC : Emission : EN 50081-1 Immunity : EN 50082-2 Input : CEI 584 for TC, CEI 751 for RTD 100 Ohms Sturdiness : EN 60068.2.32 (1 m Free fall)	

CODIFICATION

TYPE
L Size 96 x 96 mm

VERSION
1 Standard

OPTION n° 1

- 0 Without
- 1 Isolated continuous output n° 1 current (0 - 20 mA or 4 - 20 mA)
- 2 Isolated continuous output n° 1 voltage (0 - 10 Vcc)

OPTION n° 2

- 0 Without
- 1 Auxiliary power supply 24 Vcc - 30 mA
- 2 Relay n° 2
- 3 Auxiliary power supply and relay n° 2

OPTION n° 3

- 0 Without
- 1 Digital RS 485
- 2 Digital RS 232

OPTION n° 4

- 0 Without
- 1 2 relays n° 3 and n° 4 output
- 2 Isolated continuous output n° 2 current (0 - 20 mA or 4 - 20 mA)
- 3 Isolated continuous output n° 2 voltage (0 - 10 Vcc)
- 4 Isolated continuous output n° 2 voltage (0 - 5 Vcc)

OPTION n° 5

- 0 Without infrared communication
- 1 With infrared communication

POWER SUPPLY

- H 85 to 265 Vac/dc
- B 18 to 54 Vac/dc

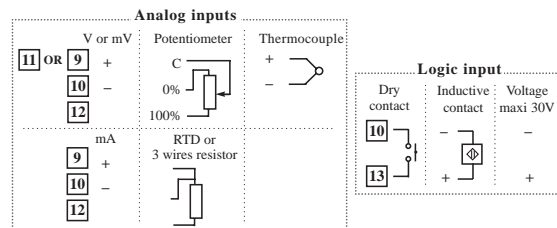
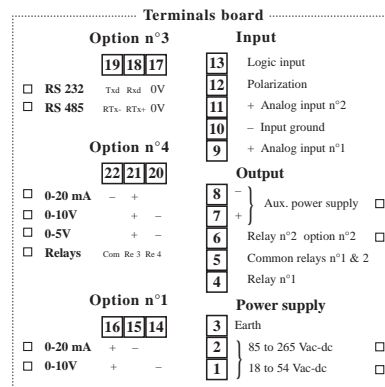
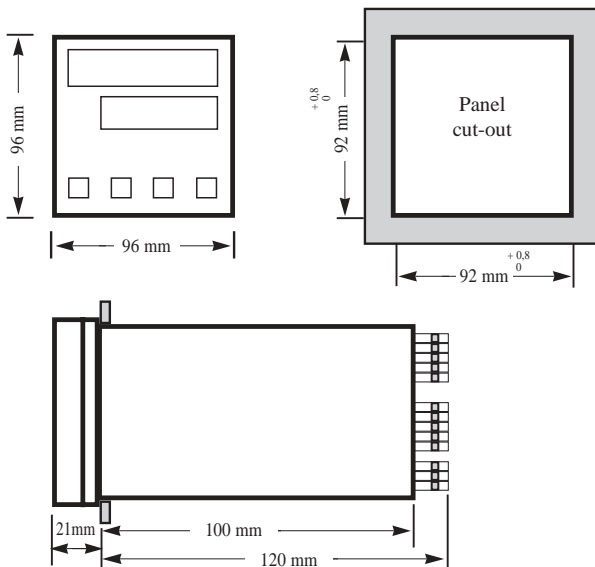
OTHER OPTIONS

- OP00 Without
- OP01 Shunt (specify its value)
- OP02 Tropicalization
- OP03 Customized configuration in factory
- OP04 Calibration certificate

Example :

LIEDER L 1 0 1 0 0 0 0 H OP00

DIMENSIONS



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