SIELCO elettronica

T1-55

Counter multichannel and detector frequencies with logic interception

Manual

Tl-55 multi-channel
counter module and
detector frequencies
with logic interception

User Manual
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Summary

1 Installation

Check the box

Firstproceeding with the installation, verify that the contents of the package are compliant with the order. Inside the box are:

- No. The module TI-55
- No. The instruction manual
- No. The operator panel FI-IO (optional)
- No. The connection cable for FI-IO (optional)

Checkthat the model code matches the code and ordered that the manual edition corresponding to the year of purchase.

A series modules are covered by a one year warranty except for damages caused by tampering or incorrect wiring.

For the date of purchase as attested by the label on the back of the modules.

Dimensions

Thedimensions of the modules TI-55 are shown in figure II

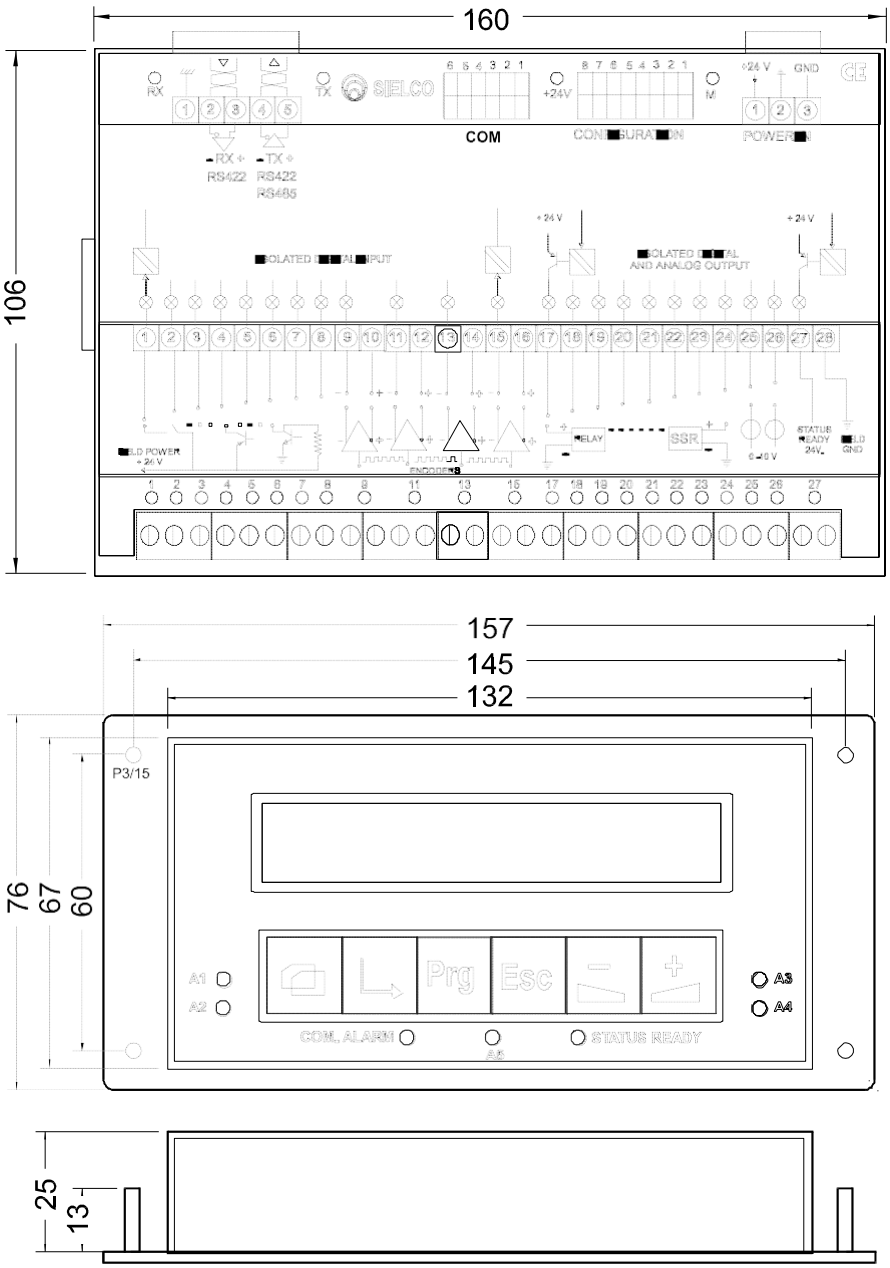

Figure 1.1 - Size of the T1-55

Modalityfixing

All products in the line DI have a plastic holder for fixing on rail DIN EN standard and the protective cover screen-printed.

On the cover shows schematically the assembly instructions; gray areas are shown in the interface circuits inside the product, in the yellow zone sensors and actuators used to be connected externally.

The serigraphy hood provides only a general wiring diagram and can not show all the possible connection cases, it is therefore necessary, before activating the module, carefully read this manual.

Notexert excessive pressure on the cover and remove the module from the rail. Also remember to do these operations with power off.

TheProgramming Console FI-IO supplied optionally for panel mounting. The dimensions of the hole on the panel are shown in figure I.2.

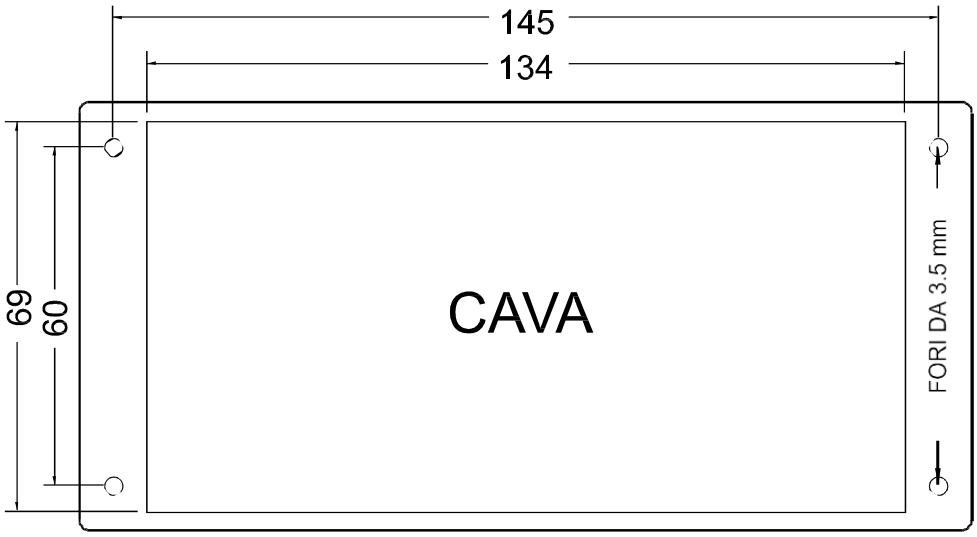

Figure 1.2 - Dimensions of the hole for the panel F1-10

1.4 Physical Descriptionmodule

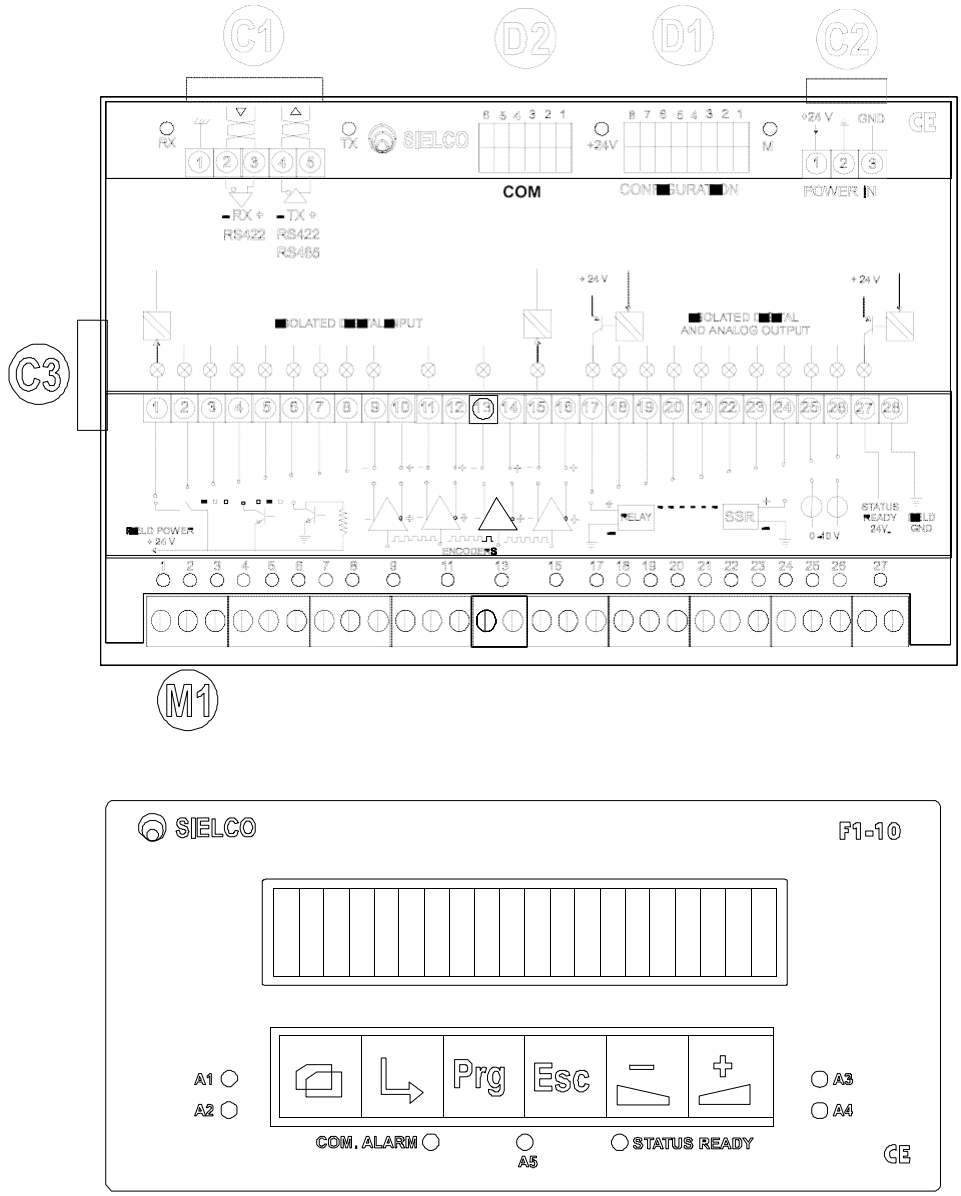

Figure 1.3 - Diagram T1-55 and F1-10 operator panel

	Description
[Cl]	Connector for connecting serial RS422/485
[C2]	Connector to +24 VDC **[C3]**
	Connector to the operator panel FI-IO[Ml]
	Terminal block inputs and outputs
[DL]	Dipswitchfor address selectiondevice and the communication protocol
[D2]	Dipswitch for the selection of RS422 or RS485
Led +24	Supply led
Led M	Led Self-diagnosis
Led TX	Led data transmitted over the serial
RX LED	Led Received data
Ledl .. 26	Ledof the physical state of the inputs and outputs
Led 27	Led availability of the module

[M1] - Input and output

	DIGITALInput
1	Digital input 1
2	Digital input 2
3	Digital input 3
4	Digital input 4
5	Digital input 5
6	Digital input 6
7	Digital input 7
8	Digital input 8

	ENCODER Input
9	Encoder A1-
10	Encoder A1 +
11	Encoder A2-
12	Encoder A2 +
13	Encoder B-
14	Encoder B +
15	Encoder-A3 (zero)
16	Encoder A3 + (zero)

	DIGITALOUTPUT
17	Exit 1 digital
18	Exit Digital 2
19	Exit Digital 3
20	Exit digital 4
21	Exit Digital 5
22	Exit Digital 6
23	Exit Digital 7
24	Exit 8 digital

	ANALOG OUTPUT
25	Analog Output 1
26	Analog Output 2

	STATUS READY
27	Availability

	COMMON GND fleld
28	Mass Field

[C1] - Connector for connecting serial RS422/485

	422		485
1	SERIAL GND	1	SERIAL GND
2	RX-	2	N.C.
3	RX +	3	N.C.
4	TX-	4	TX-/RX-
5	TX +	5	TX + / RX +

[C2] - Connector for power supply 24 VDC

	Allm
1	+24Vcc
2	FIELDGND
3	MECH.GND

Supply

The module must be powered by a DC power supply 24 VDC (I8V <Vcc <36V) via the [C2] and absorbs a maximum current Icc = 75 mA at 24 VDC.

The negative power supply must be connected to pin 2 of [C2].

Afterproviding the power, check that the +24 LED is lit.

Ingressi

Ingressi digital

There are 8 optically isolated digital inputs, can be used to detect signals with frequencies below 5OO Hz with pulses of duration greater than I ms.

Connect the wires to "positive" from the sensors to the terminals of the terminal block [MI] from No. I to No. 8. Connect the wires to "negative" from sensors to terminal No. 28 (FIELD GND) terminal of the [MI].

Theinput state is OFF for voltages between O and 5 Vdc, ON for tensions between I5 and 36 Vdc.

Ingressi encoder

Theencoder inputs, optically isolated, allow the reading of balanced signals (line driver) or unbalanced (open collector) frequency of up to 3O kHz (5O% duty cycle). Can be connected to signals of amplitude 5, I2 or 24 Vdc, the selection is made through internal jumpers directly from SIELCO, it is therefore necessary to specify at the time of the order, the desired configuration.

They can be used to connect two encoders, one bidirectional (encoder A) and one-way (encoder B). The encoder must be powered from an external source and the mass must be placed in common with the mass of the module (Field Ground), the output signals from the encoder must be connected as shown in the table "Encoder Inputs". If an encoder with open collector output PNP, the signal must be connected to the + terminal and the - terminal must be connected to earth (Field Ground).

For connect unidirectional bidirectional encoder input must be connected to the encoder A1-and A1 + A2 with A1-and short-and A1 + A2 + with.

Outputs

Digital outputs

The TI-55 module has 8 digital outputs. The outputs are optically isolated +24 V PNP transistor "open collector" with suppression diode, resettable fuse with maximum output current of IOO mA per channel (see figure I.4).

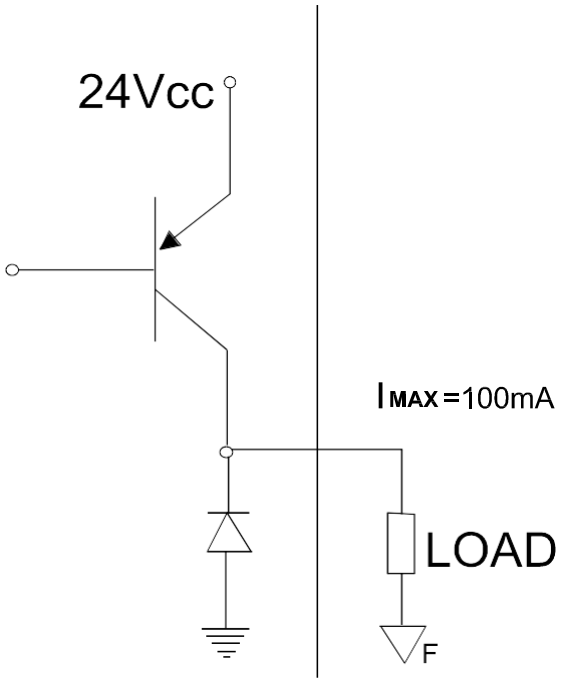

Figure 1.4 - Logic Outputs

The outputs can be used to power relays or solid-state relays (SSR).

InWhen connecting to a solid state relay, ensure that its internal resistance limits the current to the above value.

InWhen connecting to a traditional relay, check that the current output is sufficient to allow the shot.

InIf using relays for driving inductive loads, it is recommended that you connect in parallel a sunscreen according to Table II Filters use polyester capacitors.

CARICO (MA)	C (μF)	Vmax (V)	R (Ω)	P (W)
<40	0,047	400	100	0.5
<150	0.1	400	22	2
<500	0.33	400	47	2
> 500	1	400	---	---

Table 1.1 - Filters for inductive loads

Connect the wires to "positive" from the actuators to screw [MI] from No. 24 to No. I7.

Connect the wires to "negative" from the actuator to terminal No. 28 (FIELD GND) terminal of the [MI].

Analog Outputs

The2 optional analog outputs are optically isolated type O-IOV with maximum current of IO mA and I2 bit resolution. Connect the wires to the "positive" and "negative" respectively coming from the actuator to terminal No. 25 and No. 28 (first exit), and No. 26 and No. 28 (second exit).

Exitavailability

The module is equipped with a circuit that verifies continuously the proper functioning of the device and hence its availability. In proper operating condition corresponding to the digital output terminal n ° 27 of the terminal [MI] is active and the corresponding physical green LED is lit. Even on the operator panel FI-IO (optional) there is a green LED that signals the availability.

Serial Communication

Linkserial

To connect to DI modules you need to use the serial interface RS422/485 that usually are not standard equipment in personal computers. As an alternative to using internal serial cards you can use external serial interface converters.

SIELCOproduces the model CI-25, a serial interface converter RS232-RS422/485 with triple optical isolation. To use it simply plug it via RS232 cable to the PC's serial port (COM) and connect it to the [C2] of the form TI-55 according to Table I.2.

	C1-25		T1-55		
No	RS-422		RS-422	No	
1	GND	←—→	SERIAL GND	1	C1
2	RX-	←—→	TX-	4	C1
3	RX +	←—→	TX	5	C1
4	TX-	←—→	RX-	2	C1
5	TX +	←—→	RX +	3	C1
6	0 V				
7	+24V				

	C1-25		T1-55		
No	RS-485		RS-485	No	
1	GND	←—→	SERIAL GND	1	C1
2	n.c.		n.c.	2	C1
3	n.c.		n.c.	3	C1
4	TX-/RX-	←—→	TX-/RX-	4	C1
5	TX + / RX +	←—→	TX + / RX +	5	C1
6	0 V				
7	+24V				

Table 1.2- Connection C1-25 - T1-55 (RS 4221485)

InIf you chose alternative products is always preferable to use products with masses optically isolated galvanically separated.

The serial communication module TI-55 must be set to RS422 or RS485 mode using the dipswitch [D2] (Table I.3).

422

	6	5	4	3	2	1
ON		↓				
OFF	↓		↓	↓	↓	↓

485

	6	5	4	3	2	1
ON	↓					
OFF		↓	↓	↓	↓	↓

Table 1.3- Configure the type of serial line (RS4221RS485) with dipswitch [D2]

WARNING! Not allowed configurations in which both selectors # 5 and # 6 are simultaneously ON or OFF.

The selectors from No. I to No. 4 are reserved and should be maintained in the OFF position.

Protocol communication

The communication protocol software is built according to the standard Modbus ASCII or RTU: protocol selection is via selectors # 7 of dipswitch [D2] (RTU = ON, OFF = ASCII).

Thebaud rate selection is made by the selectors # 8 of dipswitch [D2] (I92OO = ON, OFF = 96OO).

ASCII protocol

Baud rate 96OO /
I92OO Data bits 7
Parity bit even
Stop bits The

RTU protocol features

Baud rate 96OO /
I92OO Data bits 8
Parity bit none
Stop bits The

Identificazione

Adevice can be assigned an identification address including between I and 63, stated, binary notation, with selectors I to 6 of dipswitch [OF] (Table I.4).

			INDIRIZZO					
	8	**7**	**6**	**5**	**4**	**3**	**2**	**1**
	BAUD	*PROT.*	2^5	2^4	2^3	2^2	2^1	2^0
ON	19200	RTU						
OFF	9600	ASCII						

Table 1.4 - configuration using dipswitch [D1]

NOTES
The addressOr is reserved.

Cable connection

Usea shielded cable with one (RS-485) or two (RS-422) twisted pair in compliance with EIA RS-485, EIA RS-422, using the shield for ground.

Recommended type of cable: Belden 9841 (RS-485), 9842 (RS-422)

Maximum attenuation of line: 6 dB
Maximum line: 100 n / Maximum
length: 1200 m Line Impedance: 100 to
120 ohms

Operator panel F1-10

The modules TI-55
can be equipped with the user interface FI-IO
including(See figure I.3):

- Seven indication led: Al -
  Led configurable I A2 -
  A3 Led configurable 2 -
  Led configurable 3 A4 -
  Led configurable 4 AS -
  Led configurable A6 5 -
  6 Led configurable
  STATUS READY - Availability status of the module

- A 2 x 24 character alphanumeric display LED backlighting

- Six control keys:

Page	**Prog**	**Inc**
Enter	**Escape**	**Dec**

The connection must be made with the serial cable supplied with the panel using the connector [C3]. Do not use cables of the type or length other than the one provided.

Linksgrounding and shielding

Linkashore

For correct operation it is advisable to make the following ground:

- mechanical ground tab (pin # 3 of connector [C2]) goes directly to the ground;

- the negative power supply (pin # 2 of connector [C2]) must be connected to a local earth;

- Over serial lines long or disturbed connect the mass of the serial channel (pin # The connector [CI]) to ground through a resistor IOO □.

It ' important that the masses are brought to the ground in an independent manner and in any case is to avoid the sharing of traits grounding with power devices.

ShieldingInputs

To improve reading (especially of the encoder inputs) in particularly disturbed by power devices (driver for dc motors, power contact, etc..) Is a good idea to follow these precautions:

- use shielded and twisted cables;
- always keep the connection cables as short as possible;
- is preferable to a separate channel between encoder signals and signal conductors of power;
- connect all cable metal shields connection upon arrival on the form, leaving them disconnected at the start (eddy currents on screens can induce disturbances that reading);
- connect all shields to pin # 3 of connector [C2].

2 Operation

Introduction

The counter and frequency detector multichannel TI-55 is able to manage independently 8 interception logic associated with the count or the frequency of pulses from 8 digital inputs and four encoder inputs; encoder inputs are usable for the detection of pulses from two encoders, one bidirectional with zero mark (encoder A) and one-way (encoder B).

The8 digital inputs are optically isolated with common 24 V, for each input has an LED status indicator, the particular filtering technique used allows to recognize the state of an input even in the presence of a number of power disturbances. The 8 digital inputs are associated with many counters for totalization pulse frequency less than 5OO Hz and amplitude greater than I ms for each input there is a 32-bit accumulator and a frequency detector.

The encoder inputs are optically isolated and can accept and process both unbalanced (line driver) and balanced (open collector) with a frequency of up to 5O kHz to each input has an associated LED status indicator. Encoder inputs can be used to detect pulses from two encoders, one bidirectional with zero mark (encoder A) and a unidirectional (encoder B) to each of the two encoders is associated with a frequency detector (imp / s) and a totalizer 32-bit pulse, in particular, the counter associated to ' A type of encoder is up / down and

provides an automatic procedure to reset at zero pulse.

The8 digital outputs, optically isolated, are the type PNP 24 V, for each output is associated with an LED status indicator, the status of each output can be associated with any of the inputs and can vary automatically according to the setpoints corresponding to the values of count or frequency set.

They are also available in option two analog outputs, optically isolated, the type O-IO V with I2-bit resolution, and the value of the outputs can be set manually by the operator (the operator panel FI-IO) or controlled via serial protocol.

It 'Finally, an output of availability which is always active in normal operation and in case of malfunction, no matter the cause, the availability of output turns off and automatically disable the other outputs.

Opportuneconfiguration procedures allow you to convert the pulses into engineering units you want, in the event of a power failure lasting less than 48 hours, the values of the counters are retained.

Input Configuration

Theinput configuration allows the setting, for each input, the following parameters:

- Location comma
- Number pulse
- Unit engineering
- Detecting period frequency
- Reset input

Theposition comma applies to all values expressed in engineering units, it is important to emphasize that this is only a display option and that the value provided via the Modbus protocol is actually an integer.

The number of pulses and the engineering units allow you to define the scale factor to be applied to convert the pulses into engineering units.

The period of observation of the frequency allows you to set the unit of measurement of frequency as a unit / period.

The entrancereset allows you to use the specified input to reset the pulse counter.

Supervision

The operator panel F1-10 and Modbus serial interface becomes available, at each input, the following data:

- Value of the totalizer pulse
- Value of the frequency
- Status (on / off)

The screen supervision inputs also makes available the possibility of manual reset by operator of the counter. There are also, at each exit, the following data:

- Status (on / off)
- Input associated
- Value of the associated input (totalizer or frequency)

Ledself-test

The LED self-test provides a summary indication of the operating status of the device, there are 2 situations:

- LED always on or always off; indicates a total standstill PU; may depend on an improper diet or an unrecoverable fault;

- flashingconstant speed; indicates normal operation of the device.

3 Interfacing operator

Introduction

The programmingand supervision of the device T1-55 can be made in one of the following ways:

- meansthe local operator panel F1-10 is connected directly to the T1-55 via a dedicated bus, the dialogue procedures are described in § 2 of this chapter.

- meansSupervision PC is connected to the various devices T1-55 via RS485 and Modbus protocol, the list of variables accessed using their address is in § 3 of this chapter.

Operator panel F1-10

The operator panel FI-IO has a liquid crystal display with 2 rows of 24, a 6-key keypad and a series of indicator lamps.

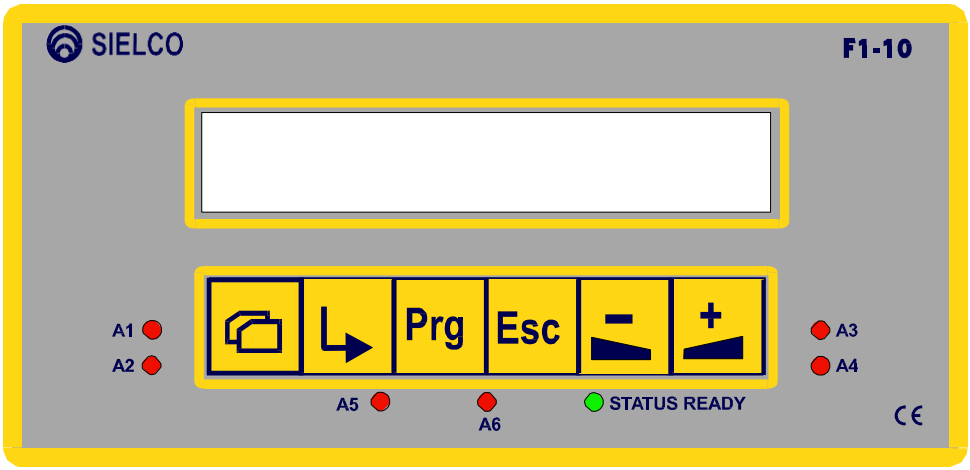

Figure 3.5 - Operator panel F1-10

When connected to the TI-55, the panel displays a series of menus that allow textual programming and supervision of the regulator.

There isa main page (default page) that displays the values of the pulse counter and frequency relative to the encoder A.

TheAll other pages provides the first line of a section title and fixed on the second line of the items that scroll.

InPlease find below the various menu pages and methods of data entry. For the numerical parameters will be reported also the minimum and maximum value in the form [min .. max].

Keyboard

WhereUnless otherwise specified the pressure of each key as follows:

Key	Description	Operation
	*SELECT*	Cycle through the various menu choices.
	*ENTER*	Drops a level menu following (If expected).
	*PROGRAM*	Confirmation changes to the data.

	*ESCAPE*	Give upa modification or goes to the previous menu level (if applicable).
	*DEC*	Decreases the value of the selected data.
	*LNC*	Increase the value of the selected data.

Led front

The LED on the front of "ready status" ON indicates that the device is in normal operation. The other LEDs indicate the status of the digital outputs associated configuration (see § 3.2.7).

Default page

Thedefault page, or home page, is the first screen that appears when the device. Represents the values of the totalizer and frequency relative to the encoder input A; pressing the select button  one become available in sequence the values of the totalizer and frequency relative to all other inputs.

```
ENCODER
T = F = nnnnnn.n nnnnnn.n
```

Pressing the enter button  you go to the main menu.

Main Menu

From the main menu you can call up the submenu related to supervision, configuration, and device diagnostics.

With the selection key  cycles through the various menu items and enter  to confirm the selection and move to the next menu.

* MAIN MENU *
- Reset Counters
- Supervision
- Confi9urazione
- Dia9nostica
- Lin9ua ssssssss

[Italian, EnglishJ

The last item allows you to select the language in which the menus are presented.

With  and  the data changes while  to confirm the new value.

Reset Counters

Thispage allows you to manually reset each counter associated with the various inputs.

01 * 02	03	04 * 05	06
07	08	A	B

With the selection key  it switches to the next while escaped to return to the previous menu to reset the counter acts on the keys or.   

Supervision

The configuration of the device is divided into two sections: supervision inputs and outputs supervision.

* SUPERUISIONE *
– Inputs
– Outputs

InIf supervision inputs choose one of the two encoder inputs or one of the eight digital inputs.

* INPUTS * SUPERUISIONE
- In9resso 1
- In9resso 2
- In9resso 3
- 4 In9resso
- In9resso 5
- In9resso 6
- In9resso 7
- In9resso 8
- A In9resso
- In9resso B

[1 .. 8, A, B

SUPERUIS.	INPUT	N
Counter	nnnn.nn	UI
Freuenza	nnnn.nn	UI
State		xxx

[On / offJ

The status is displayed only in the case of digital inputs (I .8).

Configuration

Theconfiguration of the device is divided into three sections: configuration inputs, digital outputs configuration and setup the analog outputs.

* CONFIGURATION *
- Inputs
- Digital outputs
- Analog outputs

Choosing the type of data to be modified is necessary to choose the inlet or outlet to configure.

In If the configuration inputs choose one of the two encoder inputs or one of the eight digital inputs.

* SETTING. INPUTS *
- In 1
- In 2
- In3
- In 4
- In 5
- In 6
- In 7
- In 8
- In A
- In B

SETTING. INPUT	N	[1 .. 8, A, BJ
Decimal UI	x.xx	[X, x.x, ..., x.xxxxxJ
Pulses	nnnnn	[1 .. 9999J [12:01
Unitain9e9ner.	nnn.nn	655.35J ..
Period frequency.	nnnn.n s	[0.1 .. 6553.5J
In9resso reset		[0, 1 .. 8J

Aconfiguration page of the inputs are required characterization data for each input.

Decimal UIspecifies the position of the decimal point, for all the values expressed in engineering units, it is important to emphasize that this is only a display option and that the value provided via the Modbus protocol is actually an integer.

The number of pulses and the engineering units allow you to define the scale factor to be applied to convert the pulses into engineering units.

The period of observation of the frequency allows you to set the unit of measurement of frequency as the number of units in the period.

The entrancereset command allows you to reset the counter using one of the 8 digital inputs available; Or by setting the reset option for input is not used.

In If configured digital outputs, choose one of the eight.

* SETTING. OUTPUTS *
- Output 1
- Output 2
- Output 3
- Output 4
- Output 5
- Output 6
- Output 7
- Exit 8

SETTING. OUTPUT	N	[1 .. 8J
In9resso associated	N	[0, 1 .. 8J
Function	Nn	[Fa, Fb, Fc, Fd, Ca, Cb, Cc, CDJ
Fmax	nnnnnn.n UI	[Fmax or Cmax based on FunzioneJ
Fmin	nnnnnn.n UI	[Fmin or Cmin according to FunzioneJ
Front LED		[1 .. 6J

Theconfiguration of each output occurs independently of the configuration of the inputs. Therefore, there is not a physical link between input and output, such as the output associated with the input 1 can be used 4.

The parameter "Input" specifies which input is to be associated with the digital output. Associated input 0 means that the output is not associated to no input and can only be controlled manually by an operator (via F1-10) or the serial interface (Modbus protocol), in which case the settings of all the other parameters listed above are not required and have no effect.

Thefunction specifies the type of relationship between output and frequency (F) of the input impulses (Fa.Fd) or between output and aggregation (C) of the input impulses (Ca.Cd), in particular output can be configured to:

Fa) triggered if F □ □ Fmax and OFF in all other cases
Fb) triggered if F □ □ Fmin and OFF in all other cases
Fc) triggered if F □ □ □ □ F Fmin or Fmax and OFF in all other cases Fd) if F □ □ activate and de-activate if Fmin Fmax F □ □
Ca) activated when T □ □ Tmax and de-activate "t" seconds after T <Tmax
Cb) if activated T □ □ Tmax and de-activate "t" seconds after T <Tmax
Cc) commute if T □ □ Tmax

Cd) triggered if T □ □ Tmax and Tmin deactivated if T □ □

In cases Cb) and Cc) you also have the automatic reset of the totalizer pulse relative to the input associated with it.

The case Cd) applies only to the case of an output associated with the input from bidirectional encoder (encoder A), the maximum and minimum thresholds is refer to the frequency (Fmax, Fmin) or aggregation (Cmax, Cmin) depending on the feature set (or Fa.Fd Ca.Cd).

The parameter "Front LED" allows you to associate the digital output status with one of the six LEDs on the front F1-10. In this way, whenever the digital output will be activated, also the chosen LED will turn on and vice versa. Or set in this parameter if you do not want to associate with any LED output. Do not associate the same led to more digital outputs, since in this case the state of the LED does not reflect the real state of the outputs.

In If you configure the analog outputs, please choose one of the two.

* SETTING. OUTPUTS *
– Output 1
– Output 2

SETTING. OUTPUT	N	[1, 2J
Value	nnn.n%	[0.0 .. 100.0J

Theconfiguration of each output allows you to set the percentage value of output, either manually by the operator (via F1-10) or via serial interface (Modbus protocol).

Diagnostics

The diagnostics includes two sections: communication and input / output.

* DIAGNOSTIC *
– Communication
– Inputs / Outputs

Inpage dedicated to the communication values are set to the micro card: card address, baud rate and type of Modbus protocol.

* DIAG. COMMUNICATION *		
Card Address	nn	[1 .. 63j off switch
Baud Rate	sssss	[9600/19200J off switch [ASCII
Protocol	sssss	/ off switch RTUJ

Thediagnostic pages of input / output are useful during installation or verification of the operation of the device. Once you've selected the menu, you can browse the following pages:

Digital inputs
00000000

Displays the status of the eight digital inputs.

Digital outputs
00000000

Displays the status of the eight digital outputs from this page, with − and + you can manually control the state while Prg output is selected.

Encoder inputs	
EA nnnnh	EB nnnnh

This displays the value of the counter associated hardware encoder.

Analog outputs	
01% nn.nn	02% nn.nn

Displays the value of the two analog outputs from this page, with − and + you can manually change the value, while Prg oneselects the output.

3.3 Supervision

The supervision of the device is achieved via the interface RS485/422 modbus using any commercial scada with modbus master driver. It can be used an HMI operator

interface. The Sielco Electronics has engineered a console modbus employing the model Panasonic GT05. There are libraries of all variables used in the Modbus device. The libraries are provided along with basic projects specific to the various types of modules developed. The integrator or the application developer must simply in GTWIN environment "transform" the basic design, through a simple object-oriented programming and build the pages specific for the application.

Modbus Ports

The list of ports Modbus are detailed in the tables reported.

No.	Port ID	Address	Description	Unit measure	Type ofchangeable	Figuresdecimal
1	NULL	3:999	Reserved gate (For block)		DOUBLE	1
2	Device.Id0	3:000	Device identifier "T1"		U_WORD	0
3	Device.Id1	3:001	Device identifier "55"		U_WORD	0
4	Device.SWvers	3:002	Firmware Version		U_WORD	2
5	Device.Zero	3:003	Reserved gate		U_WORD	0
6	Device.AAAA	3:004	Reserved gate		U_WORD	0
7	Device.DI	3:005	Inputs digital coded 8-bit		U_BYTE	1
8	Device.DO	3:006	Digital outputs coded on 8 bits		U_BYTE	1
9	Device.AO1	3:007	Outlet analog output 1	%	DOUBLE	1
10	Device.AO2	3:008	Outlet analog output 2	%	DOUBLE	1
11	Device.AO1_w	3:007	Outlet Analogue 1 - Transmitted	%	DOUBLE	1
12	Device.AO2_w	3:008	Outlet analog 2 - Transmitted	%	DOUBLE	1
13	In1.Count	35:009	Counter Input 1 UI	UI	U_INT32	0
14	In1.Freq	35:011	Frequency Input 1 UI	UI	U_INT32	0
15	In2.Count	35:013	Counter Input 2 UI	UI	U_INT32	0
16	In2.Freq	35:015	Frequency Input 2 UI	UI	U_INT32	0
17	In3.Count	35:017	Counter Input 3 in UI	UI	U_INT32	0
18	In3.Freq	35:019	Frequency Input 3 in UI	UI	U_INT32	0
19	In4.Count	35:021	Counter Input 4 in UI	UI	U_INT32	0
20	In4.Freq	35:023	Frequency Input 4 in UI	UI	U_INT32	0
21	In5.Count	35:025	Counter Input 5 in UI	UI	U_INT32	0
22	In5.Freq	35:027	Frequency Input 5 in UI	UI	U_INT32	0
23	In6.Count	35:029	Counter Input 6 in UI	UI	U_INT32	0
24	In6.Freq	35:031	Frequency Input 6 in UI	UI	U_INT32	0
25	In7.Count	35:033	Counter Input 7 UI	UI	U_INT32	0
26	In7.Freq	35:035	Frequency Input 7 UI	UI	U_INT32	0
27	In8.Count	35:037	Counter Input 8 in UI	UI	U_INT32	0
28	In8.Freq	35:039	Frequency Input 8 in UI	UI	U_INT32	0
29	InA.Count	35:041	Counter input A in UI	UI	S_INT32	0
30	InA.Freq	35:043	Frequency input A in UI	UI	U_INT32	0
31	InB.Count	35:045	Counter Input B UI	UI	U_INT32	0
32	InB.Freq	35:047	Frequency Input B UI	UI	U_INT32	0

33	Out1.Value	35:049	Value associated exit 1 UI	UI	U_INT32	0
34	Out2.Value	35:051	Value associated exit 2 UI	UI	U_INT32	0
35	Out3.Value	35:053	Value associated exit 3 UI	UI	U_INT32	0
36	Out4.Value	35:055	Value associated Output 4 in UI	UI	U_INT32	0
37	Out5.Value	35:057	Value associated exit 5 UI	UI	U_INT32	0
38	Out6.Value	35:059	Value associated exit 6 UI	UI	U_INT32	0
39	Out7.Value	35:061	Value associated Exit 7 in UI	UI	U_INT32	0

No.	Port ID	Address	Description	Unit measure	Type ofchangeable	Figuresdecimal
40	Out8.Value	35:063	Value associated exit 8 UI	UI	U_INT32	0
41	cIn1.DecDigits	3:065	Number of decimal places Input 1		U_BYTE	0
42	cIn1.Pulses	3:066	Pulses Input 1	imp	U_WORD	0
43	cIn1.EngUnits	3:067	Engineering Units Input 1	UI	U_WORD	0
44	cIn1.FreqPeriod	3:068	Period calculation frequency Input 1	s	U_WORD	1
45	cIn1.ResetInput	3:069	Admission of reset counter Input 1		U_BYTE	0
46	cIn1.Show	3:070	Enabling display input 1		U_BYTE	0
47	cIn2.DecDigits	3:071	Number of decimal places Input 2		U_BYTE	0
48	cIn2.Pulses	3:072	Pulses Input 2	imp	U_WORD	0
49	cIn2.EngUnits	3:073	Engineering Units Input 2	UI	U_WORD	0
50	cIn2.FreqPeriod	3:074	Period calculation frequency Input 2	s	U_WORD	1
51	cIn2.ResetInput	3:075	Admission of reset counter Input 2		U_BYTE	0
52	cIn2.Show	3:076	Enabling display input 2		U_BYTE	0
53	cIn3.DecDigits	3:077	Number of decimal places Input 3		U_BYTE	0
54	cIn3.Pulses	3:078	Pulses Input 3	imp	U_WORD	0
55	cIn3.EngUnits	3:079	Engineering Units Input 3	UI	U_WORD	0
56	cIn3.FreqPeriod	3:080	Period calculation frequency Input 3	s	U_WORD	1
57	cIn3.ResetInput	3:081	Admission of reset counter Input 3		U_BYTE	0
58	cIn3.Show	3:082	Enabling display input 3		U_BYTE	0
59	cIn4.DecDigits	3:083	Number of decimal places Input 4		U_BYTE	0
60	cIn4.Pulses	3:084	Pulses Input 4	imp	U_WORD	0
61	cIn4.EngUnits	3:085	Engineering Units Input 4	UI	U_WORD	0
62	cIn4.FreqPeriod	3:086	Period calculation frequency Input 4	s	U_WORD	1
63	cIn4.ResetInput	3:087	Admission of reset counter Input 4		U_BYTE	0
64	cIn4.Show	3:088	Enabling display input 4		U_BYTE	0
65	cIn5.DecDigits	3:089	Number of decimal places Input 5		U_BYTE	0
66	cIn5.Pulses	3:090	Pulses Input 5	imp	U_WORD	0
67	cIn5.EngUnits	3:091	Engineering Units Input 5	UI	U_WORD	0
68	cIn5.FreqPeriod	3:092	Period calculation frequency Input 5	s	U_WORD	1
69	cIn5.ResetInput	3:093	Admission of reset counter Input 5		U_BYTE	0
70	cIn5.Show	3:094	Enabling display Input 5		U_BYTE	0

71	cIn6.DecDigits	3:095	Number of decimal places Input 6		U_BYTE	0
72	cIn6.Pulses	3:096	Pulses Input 6	imp	U_WORD	0
73	cIn6.EngUnits	3:097	Engineering Units Input 6	UI	U_WORD	0
74	cIn6.FreqPeriod	3:098	Period calculation frequency Input 6	s	U_WORD	1
75	cIn6.ResetInput	3:099	Admission of reset counter Input 6		U_BYTE	0
76	cIn6.Show	3:100	Enabling display input 6		U_BYTE	0
77	cIn7.DecDigits	3:101	Number of decimal places Input 7		U_BYTE	0
78	cIn7.Pulses	3:102	Pulses Input 7	imp	U_WORD	0

No.	Port ID	Address	Description	Unit measure	Type ofchangeable	Figuresdecimal
79	cIn7.EngUnits	3:103	Engineering Units Input 7	UI	U_WORD	0
80	cIn7.FreqPeriod	3:104	Period calculation frequency Input 7	s	U_WORD	1
81	cIn7.ResetInput	3:105	Admission of reset counter Input 7		U_BYTE	0
82	cIn7.Show	3:106	Enabling display Input 7		U_BYTE	0
83	cIn8.DecDigits	3:107	Number of decimal places Input 8		U_BYTE	0
84	cIn8.Pulses	3:108	Pulses Input 8	imp	U_WORD	0
85	cIn8.EngUnits	3:109	Engineering Units Input 8	UI	U_WORD	0
86	cIn8.FreqPeriod	3:110	Period calculation frequency Input 8	s	U_WORD	1
87	cIn8.ResetInput	3:111	Admission of reset counter Input 8		U_BYTE	0
88	cIn8.Show	3:112	Enabling display Input 8		U_BYTE	0
89	cInA.DecDigits	3:113	Number of decimal places Input A		U_BYTE	0
90	cInA.Pulses	3:114	Pulses Input A	imp	U_WORD	0
91	cInA.EngUnits	3:115	Engineering Units Input A	UI	U_WORD	0
92	cInA.FreqPeriod	3:116	Period calculation frequency Input A	s	U_WORD	1
93	cInA.ResetInput	3:117	Admission of reset counter Input A		U_BYTE	0
94	cInA.Show	3:118	Enabling display Input A		U_BYTE	0
95	cInA.Zero	3:119	Enable initialization input A		U_BYTE	0
96	cInB.DecDigits	3:120	Number of decimal places Input B		U_BYTE	0
97	cInB.Pulses	3:121	Pulses Input B	imp	U_WORD	0
98	cInB.EngUnits	3:122	Engineering Units Input B	UI	U_WORD	0
99	cInB.FreqPeriod	3:123	Period calculation frequency Input B	s	U_WORD	1
100	cInB.ResetInput	3:124	Admission of reset counter Input B		U_BYTE	0
101	cInB.Show	3:125	Enabling display input B		U_BYTE	0
102	cOut1.Input	3:126	Admission associated Output 1		U_BYTE	0
103	cOut1.Function	3:127	Function Output 1		U_BYTE	0
104	cOut1.OnTime	3:128	Duration activation output 1	s	U_BYTE	1
105	cOut1.Led	3:129	Led keypad associated Output 1		U_BYTE	0
106	cOut2.Input	3:130	Admission associated Output 2		U_BYTE	0
107	cOut2.Function	3:131	Function Output 2		U_BYTE	0
10	cOut2.OnTi	3:132	Duration activation output 2	s	U_BYTE	1

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109	cOut2.Led	3:133	Led keypad associated Output 2		U_BYTE	0
110	cOut3.Input	3:134	Admission associated Output 3		U_BYTE	0
111	cOut3.Function	3:135	Function Output 3		U_BYTE	0
112	cOut3.OnTime	3:136	Output Enable Time 3	s	U_BYTE	1
113	cOut3.Led	3:137	Led keypad associated Output 3		U_BYTE	0
114	cOut4.Input	3:138	Admission associated Output 4		U_BYTE	0
115	cOut4.Function	3:139	Function Output 4		U_BYTE	0
116	cOut4.OnTime	3:140	Duration activation output 4	s	U_BYTE	1
117	cOut4.Led	3:141	Led keypad associated Output 4		U_BYTE	0

No.	Port ID	Address	Description	Unit measure	Type ofchangeable	Figuresdecimal
118	cOut5.Input	3:142	Admission associated Output 5		U_BYTE	0
119	cOut5.Function	3:143	Function Output 5		U_BYTE	0
120	cOut5.OnTime	3:144	Output Enable Time 5	s	U_BYTE	1
121	cOut5.Led	3:145	Led keypad associated Output 5		U_BYTE	0
122	cOut6.Input	3:146	Admission associated Exit 6		U_BYTE	0
123	cOut6.Function	3:147	Function Exit 6		U_BYTE	0
124	cOut6.OnTime	3:148	Duration activation exit 6	s	U_BYTE	1
125	cOut6.Led	3:149	Led keypad associated Exit 6		U_BYTE	0
126	cOut7.Input	3:150	Admission associated Exit 7		U_BYTE	0
127	cOut7.Function	3:151	Function Exit 7		U_BYTE	0
128	cOut7.OnTime	3:152	Duration activation Exit 7	s	U_BYTE	1
129	cOut7.Led	3:153	Led keypad associated Exit 7		U_BYTE	0
130	cOut8.Input	3:154	Admission associated exit 8		U_BYTE	0
131	cOut8.Function	3:155	Function exit 8		U_BYTE	0
132	cOut8.OnTime	3:156	Duration activation exit 8	s	U_BYTE	1
133	cOut8.Led	3:157	Led keypad associated exit 8		U_BYTE	0
134	cOut1.Thresh1	35:158	Threshold 1 exit 1 UI	UI	S_INT32	0
135	cOut1.Thresh2	35:160	Threshold 2 exit 1 UI	UI	S_INT32	0
136	cOut2.Thresh1	35:162	Threshold 1 exit 2 UI	UI	S_INT32	0
137	cOut2.Thresh2	35:164	Threshold 2 exit 2 UI	UI	S_INT32	0
138	cOut3.Thresh1	35:166	Threshold 1 exit 3 UI	UI	S_INT32	0
139	cOut3.Thresh2	35:168	Threshold 2 exit 3 UI	UI	S_INT32	0
140	cOut4.Thresh1	35:170	Threshold 1 output 4 UI	UI	S_INT32	0
141	cOut4.Thresh2	35:172	Threshold 2 exit 4 in UI	UI	S_INT32	0
142	cOut5.Thresh1	35:174	Threshold 1 exit 5 UI	UI	S_INT32	0
143	cOut5.Thresh2	35:176	Threshold 2 exit 5 UI	UI	S_INT32	0
144	cOut6.Thresh1	35:178	Threshold 1 exit 6 UI	UI	S_INT32	0
14	cOut6.Thre	35:180	Threshold 2 exit 6 UI	UI	S_INT32	0

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146	cOut7.Thresh1	35:182	Threshold 1 exit 7 in UI	UI	S_INT32	0
147	cOut7.Thresh2	35:184	Threshold 2 exit 7 in UI	UI	S_INT32	0
148	cOut8.Thresh1	35:186	Threshold 1 exit 8 UI	UI	S_INT32	0
149	cOut8.Thresh2	35:188	Threshold 2 exit 8 UI	UI	S_INT32	0
150	cAOut1.Enable	3:190	Output Enable analog output 1		U_BYTE	0
151	cAOut2.Enable	3:191	Output Enable analog output 2		U_BYTE	0
152	NULL	3:999	Reserved gate (For block)		DOUBLE	1