



cavi 0.2...2.5 mm / AWG 24...14.  
 Grado di protezione frontale: IP 65 (NEMA 3S) con guarnizione  
 Grado di inquinamento: 2  
 Temperatura ambiente di funzionamento: 0 T 50 °C  
 Umidità ambiente di funzionamento: < 95 RH% senza condensazione  
 Temperatura di trasporto e immagazzinaggio: -25 T 60 °C  
 Regolazione Temperatura: ON/OFF  
 Controllo sbrinatori: a intervalli o per temperatura mediante fermata compressore, riscaldamento elettrico o gas caldo/inversione di ciclo.  
 Range di misura: NTC: -50...+109 °C / -58...+228 °F; PTC: -50...+150 °C / -58...+302 °F Risoluzione visualizz.: 1 ° o 0,1 °; Precisione tot.:+/- (0,5 % fs + 1 digit) Tempo di campionamento misura: 130 ms  
 Display: 3 Digit Rosso (Blu opzionale) h 15,5 mm  
 Classe e struttura del software: Classe A  
 Conformità: Directive 2004/108/CE (EN55022: class B; EN61000-4-2: 8KV air, 4KV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2KV supply and relay outputs, 1KV inputs; EN61000-4-5: supply 2KV com. mode, 1 KV diff. mode; EN61000-4-6: 3V);  
 Directive 2006/95/CE (EN 60730-1, EN 60730-2-9).  
 Regulation 37/2005/CE (EN13485 aria/air, S, A, 2, - 50°C +90°C se utilizzato con sonda modello NTC 103AT11).

**CODICI MODELLI STRUMENTO**  
**Y39E** (tasti meccanici); **Y39SE** (Sensitive Touch)

**a b c d e f g h i j k k ll**

**ALIMENTAZIONE**  
 = 100...240 VAC; G = 12...24 VAC/VDC; F = 12 VAC/VDC

**OUT1**  
 = Out1 Relè SPST-NO 16A

**OUT2**  
 = Out2 Relè SPDT 8A; - = (No)

**OUT3**  
 = Out3 Relè SPST-NO 5A; - = (No)

**BUZZER**  
 = Buzzer; - = (No)

**MORSETTIERA**  
 = (Standard a vite); E = Mors. Estraibile

**DISPLAY**  
 = Rosso; B = Blu

**h, i, j : CODICI RISERVATI; k, ll : CODICI SPECIALI**

**INSTRUMENT DESCRIPTION**

The model **Y39E** is a digital controller with microprocessor that is typically used in cooling applications that have temperature control with ON/OFF regulation and defrosting control at intervals time, at reaching evaporator temperature or at reaching compressor running time by stopping compressor or by means of electrical heating or hot gas/reverse cycle. The instrument is equipped with special features to optimize the defrosts and functions used to achieve energy savings of the controlled unit. The instrument has up to 3 relay outputs, up to 2 inputs for PTC or NTC temperature probes and one digital input, in addition can be equipped with an internal buzzer that is the sound system for alarms. The 3 outputs can be can be configured for controlling the compressor or the temperature control device, the defrosting device, the evaporation fan or, alternatively any of the previous functions, using an heating device, an auxiliary device or an alarm. The 2 inputs for temperature probes can be used to measure the control temperature, the evaporator temperature, products or aux temperature, while the digital input can be programmed to carry out various functions such as door opened signal, defrosting commands, selecting a different set of temperature regulations, external alarm signals, activating a continuous cycle, and activating an auxiliary output etc. The model **Y39SE** have the "S-touch" capacitive sensor keyboard system.

**PERMITTED USE** - The instrument has been projected and manufactured as a measuring and control device to be used according to EN60730-1 for the altitudes operation until 2000 ms. The use of the instrument for applications not expressly permitted by the above mentioned rule must adopt all the necessary protective measures. The instrument CANNOT be used in dangerous environments (flammable or explosive) without adequate protection. The instrument used with NTC 103AT11 probe (identifiable by the printed code "103AT-11" visible on the sensor part) is compliant with standard EN 13485 ("Thermometers for measuring the air and product temperature for the transport, storage and distribution of chilled, frozen, deep-frozen/quick-frozen food and ice cream") with the following classification: [EN13485 air, S, A, 2, - 50°C +90°C]. Remember that the end user must periodically checks and verify the thermometers in compliance with standard EN 13486. The installer must ensure that EMC rules are respected, also after the instrument installation, if necessary using proper filters. Whenever a failure or a malfunction of the device may cause dangerous situations for persons, things or animals, please remember that the plant has to be equipped with additional devices which will guarantee safety.

**MECHANICAL MOUNTING** - The instrument, in case 78 x 35 mm, is designed for flush-in panel mounting. Make a hole 71 x 29 mm and insert the instrument, fixing it with the provided special brackets. We recommend that the gasket is mounted in order to obtain the front protection degree as declared. Avoid placing the instrument in environments with very high humidity levels or dirt that may create condensation or introduction of conductive substances into the instrument. Ensure adequate ventilation to the instrument and avoid installation in containers that house devices which may overheat or which may cause the instrument to function at a higher temperature than the one permitted and declared. Connect the instrument as far away as possible from sources of electromagnetic disturbances such as motors, power relays, relays, solenoid valves, etc.

**ELECTRICAL CONNECTION** - Carry out the electrical wiring by connecting only one wire to each terminal, according to the following diagram, checking that the power supply is the same as that indicated on the instrument and that the load current absorption is no higher than the maximum electricly current permitted. As the instrument is built-in equipment with permanent connection inside housing, it is not equipped with either switches or internal devices to protect against overload of current: the installation will include an overload protection and a two-phase circuit-breaker, placed as near as possible to the instrument, and located in a position that can easily be reached by the user and marked as instrument disconnecting device which interrupts the power supply to the equipment. It is also recommended that the supply of all the electrical circuits connected to the instrument must be protect properly, using devices (ex. fuses) proportionate to the circulating currents. It is strongly recommended that cables with proper insulation, according to the working voltages and temperatures, be used. Furthermore, the input cable of the probe has to be kept separate from line voltage wiring. If the input cable of the probe is screened, it has to be connected to the ground with only one side. Whether the instrument is F o G (12 / 24 V) supply version it's recommended to use an external transformer TCTr, or with equivalent features (Class II insulation), and to use only one transformer for each instrument because there is no insulation between supply and input. We recommend that a check should be made that the parameters are those desired and that the application functions correctly before connecting the outputs to the actuators so as to avoid malfunctioning that may cause irregularities in the plant that could cause damage to people, things or animals.

**PROGRAMMABLE PARAMETERS TABLE**

Here below is a description of all the parameters available on the instrument. Some of them may not be present because depend on the model/type of instrument.

\*: Please note that the Default values are refer only to the standard model and, by request of the manufacturer, may be different and depending on the model.

Par.	Description	Range	Def.*	N.
<b>S. - parameters relative to Set Point</b>				
1	S.S Minimum Set Point	-99.9 + S.HS	-50.0	
2	S.HS Maximum Set Point	S.S + 999	99.9	
3	SP Set Point	S.S + S.HS	0.0	
4	SPE Eco Set Point	SP + S.HS	0.0	
<b>I. - parameters relative to inputs</b>				
5	i.SE Probes Type	Pt / nt	nt	
6	i.FI Measurement filter	oF + 20.0 sec	2.0	
7	i.uP Unit of meas. and resolution (dec.point) C0 = °C with 1 ° res. F0 = °F with 1 ° res. C1 = °C with 0,1 ° res. F1 = °F with 0,1 ° res.	C0 / F0 / C1 / F1	C1	
8	i.C1 Pr1 Probe Calibration	-30.0 + 30.0 °C/°F	0.0	
9	i.C2 Pr2 Probe Calibration	-30.0 + 30.0 °C/°F	0.0	
10	i.CU Measure offset on the display	-30.0 + 30.0 °C/°F	0.0	
11	i.P2 Pr2 input function: oF = No function EP = Evaporator Au = Aux dG = Digital	oF / EP / Au / dG	EP	
12	i.FI Function and function logic of digital input: 0 = No function 1 = Door open 2 = Door open with fan stop 3 = Door open with fan and compressor stop 4 = External alarm 5 = External alarm with deactivation of control outputs 6 = Selection of active Set Point 7 = Switch on/Switch off (Stand-by) 8 = External signalling with label "noF" and deact. of control outputs (no alarm output) 9 = External alarm with label "noF" and deact. of control outputs	-9 / -8 / -7 / -6 / -5 / -4 / -3 / -2 / -1 / 0 / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9	0	
13	i.ti Delay in acquiring digital input	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	
14	i.Et Delay to Eco mode with door closed oF = No function	oF / 0.01 + 9.59 (hrs.min.) + 99.5 (hrs.min.x10)	oF	
15	i.dS Variable visualized normally on display: oF=Display off P1= meas. probe Pr1 P2= meas. probe Pr2 Ec = Pr1 in normal mode, Eco in Eco mode SP = Active Set Point	P1 / P2 / Ec / SP / oF	P1	
<b>r. - parameters relative to temperature control</b>				
16	r.d Differential (Hysteresis)	0.0 + 30.0 °C/°F	2.0	
17	r.Ed Differential (Hysteresis) in Eco mode	0.0 + 30.0 °C/°F	2.0	
18	r.t1 Output activation time for probe error	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	
19	r.t2 Output deactivation time for probe error	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	
20	r.HC Output operating mode H = Heating C = Cooling nr = Neutral Zone	H - C - nr	C	
<b>d. - parameters relative to defrosting control</b>				
21	d.dt Defrosting Type: EL = Electrical heating/stop. compr. in = hot gas/reverse cycle	EL / in	EL	
22	d.di Defrosting interval	oF / 0.01 + 9.59 (hrs.min.) + 99.5 (hrs.min.x10)	6.00	
23	d.Sd Delay first defrost after power-on (oF = Def. at power-on)	oF / 0.01 + 9.59 (hrs.min.) + 99.5 (hrs.min.x10)	6.00	
24	d.dE Lenght (max.) of defrost cycle	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	20.0	
25	d.tE Defrost stop	-99.9 + 999 °C/°F	8.0	

26	d.Ei Defrosting interval for evaporator probe error	oF / 0.01 + 9.59 (hrs.min.) + 99.5 (hrs.min.x10)	6.00	
27	d.EE Lenght of defrost cycle for evaporator probe error	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	10.0	
28	d.tS Defrost start temperature	-99.9 + 999 °C/°F	-99.9	
29	d.St Delay start defrost by temperature	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	1.00	
30	d.dd Dynamic Defrost Percentage reduction	0 + 100 %	0	
31	d.cd Delay start Defrost by continuous compressor running time	oF / 0.01 + 9.59 (hrs.min.x10) + 99.5 (hrs.min.x10)	oF	
32	d.dL Defrost display Lock oF = display free on = Lock on temperature Pr1 before defrost Lb = Lock on label "dEF" (during def.) and "PdF" (during post-def.)	oF - on - Lb	oF	
33	d.td Compressor delay after defrost (drainage time)	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	

F. parameters relative to evaporator fans control				
34	F.tn Fan time activation with ot output (compressor) off	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	5.00	
35	F.tf Fan time deactivation with ot output (compressor) off	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	
36	F.FL High temperature fan deactivation	-99.9 + 999 °C/°F	10.0	
37	F.FE Fan status during defrost	oF - on	oF	
38	F.Fd Fan delay after defrost	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	

P. parameters relative to compressor protection and power on delay				
39	P.P1 Output "ot" delay at switch on	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	
40	P.P2 Output "ot" delay after switch off	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	
41	P.P3 Output "ot" delay between switching-on	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	
42	P.od Delay outputs at power on	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	

A. - parameters relative to alarms				
43	A.Ay Temperature alarms Type: 1 = Pr1 absolute with label (Hi - Lo) 2 = Pr1 Relative with label (Hi - Lo) 3 = "Au" absolute with label (Hi - Lo) 4 = "Au" Relative with label (Hi - Lo)	1 / 2 / 3 / 4	1	
44	A.HA High temperature Alarm threshold	oF / -99.9 + 999 °C/°F	oF	
45	A.LA Low temperature Alarm threshold	oF / -99.9 + 999 °C/°F	oF	
46	A.At Temperature Alarms delay	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	
47	A.PA Temperature Alarms delay at power on	oF / 0.01 + 9.59 (hrs.min.) + 99.5 (hrs.min.x10)	2.00	
48	A.da Temperature Alarms delay after defrost, and unlock display delay after defrost	oF / 0.01 + 9.59 (hrs.min.) + 99.5 (hrs.min.x10)	1.00	
49	A.oA Alarm delay with door open	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	3.00	

o. - parameters relative to configuration of outputs and buzzer				
50	o.o1 OUT1 function: oF = No function ot = Temperature control (compressor) dF = Defrosting Fn = fan Au = Auxiliary At = Silenceable alarm AL/L = Not silenceable Alarm on = on when instrument switch on HE = Heating (Neutral zone control)	oF / ot / dF / Fn / Au / At / AL / L / on / HE	ot	
51	o.o2 OUT2 function: see "o.o1"	oF / ot / dF / Fn / Au / At / AL / L / on / HE	dF	
52	o.o3 OUT3 function: see "o.o1"	oF / ot / dF / Fn / Au / At / AL / L / on / HE	Fn	
53	o.bu Buzzer function mode oF = disable 1 = active alarms only 2 = key pressed only 3 = active alarms and key pressed	oF / 1 / 2 / 3	3	
54	o.Fo Function mode auxiliary output: oF = No Function 1 = control output "ot" delayed 2 = manual activation by key or digital input. 3 = light with economy mode (on in Normal mode off in Eco mode) 4 = internal light (off with door closed and on with door opened)	oF / 1 / 2 / 3 / 4	oF	
55	o.tu Time relative to auxiliary output	oF / 0.01 + 9.59 (min.sec.) + 99.5 (min.sec.x10)	oF	

I. - parameters relative to configuration of the keyboard (and to communication)				
56	t.UF Function mode key DOWN/AUX: oF = No function 1 = Auxiliary output command 2 = Norm. / Eco mode Selection 3 = Switch on/off (Stand-by)	oF / 1 / 2 / 3	oF	
57	t.Fb Function mode key Down/Aux: see "t.UF"	oF / 1 / 2 / 3	oF	
58	t.Lo Keyboard lock function delay	oF / 0.01 + 9.59 (min.sec.) + 30.0 (min.sec.x10)	oF	
59	t.Ed Set Visibility with fast procedure by key P: oF = None 1 = SP 2 = SPE 3 = SP and SPE 4 = Active SP	oF / 1 / 2 / 3 / 4	4	
60	t.SA Active mode: 0 = Normal 1 = Economic	0 + 1	0	
61	t.PP Access Password to parameter functions	oF + 999	oF	
62	t.AS Station address (for serial communication)	0 + 255	1	

**PROBLEMS, MAINTENANCE AND GUARANTEE**

Error	Reason	Action
E1 -E2	The probe may be interrupted (E) or in short circuit (-E), or may measure a value outside the range allowed	Check the correct connection of the probe with the instrument and check the probe works correctly
EPr	Internal EEPROM memory error	Press key P
Err	Fatal memory error	Replace the instrument or ship to factory for repair

Message	Reason
od	Delay at power-on in progress
Ln	Keyboard lock
Hl	Maximum temperature alarm in progress
Lo	Minimum temperature alarm in progress
oP	Door opened
dEF	Defrosting in progress with "d.dL"=Lb
PdF	Post-defrosting in progress with "d.dL"=Lb

**CLEANING** - We recommend cleaning of the instrument only with a slightly wet cloth using water and not abrasive cleaners or solvents.

**GUARANTEE AND REPAIRS** - The instrument is under warranty against manufacturing flaws or faulty material, that are found within 12 months from delivery date. The guarantee is limited to repairs or to the replacement of the instrument. The eventual opening of the housing, the violation of the instrument or the improper use and installation of the product will bring about the immediate withdrawal of the warranty's effects. In the event of a faulty instrument, either within the period of warranty, or further to its expiry, please contact our sales department to obtain authorisation for sending the instrument to our company. The faulty product must be shipped to ASCON TECNOLOGIC with a detailed description of the faults found, without any fees or charge for ASCON TECNOLOGIC, except in the event of alternative agreements.

**TECHNICAL DATA**

Power supply: 12 VAC/VDC, 12...24 VAC/VDC, 100...240 VAC +/- 10% Frequency AC: 50/60 Hz; Power consumption: 3.5 VA approx.  
 Inputs: 1 inputs for temperature probes: PTC (KTY 81-121, 990 92 25 °C) or NTC (103AT-2, 10KΩ @ 25 °C); 1 digital input for free voltage contacts.  
 Output/s: up to 3 relay outputs.

	EN 61810	EN 60730	UL 60730
Out1 - SPST-NO - 16A - 1HP 250V, 1/2HP 125 VAC	16 (9) A	10 (4) A	12 A Res., 30 LRA, 5 FLA
Out2 - SPDT - 8A - 1/2HP 250V, 1/3HP 125 VAC	8 (3) A	4 (4) A	4 A Res.
Out3 - SPST-NO - 5A - 1/8HP 250V, 1/10HP 125 VAC	5 (2) A	2 (2) A	2 A Res.

16 A Max. for common (pin. 1), 12 A Max. for extractable terminal block model

Electrical life for relay outputs: 100000 op. (EN60730)  
 Action type: type 1.B (EN 60730-1)

Overvoltage category: II Protection class: Class II  
 Insulation: Reinforced insulation between the low voltage part (supply H type and relay output) and front panel; Reinforced insulation between the low voltage section (supply H type and relay output) and the extra low voltage section (inputs); Reinforced between supply and relay output; No insulation between supply F or G type and inputs.  
 Housing: Self-extinguishing plastic, UL 94 V0  
 Heat and fire resistance category: D  
 Ball Pressure Test secondo EN60730: accessible parts 75 °C; support live parts 125 °C

Dimensions: 78 x 35 mm, depth 64 mm Weight: 130 g approx.  
 Mounting: Incorporated Flush in panel (thickness max. 12 mm) in 71 x 29 mm hole

Connections: 2,5 mm<sup>2</sup> screw terminals block or 2,5 mm<sup>2</sup> extractable screw terminals block for 0,2...2,5 mm<sup>2</sup> / AWG 24...14 cables.  
 Degree of front panel protection: IP 65 (NEMA 3S) mounted in panel with gasket

Pollution situation: 2 Operating temperature: 0 T 50 °C  
 Operating humidity: < 95 RH% without condensation  
 Storage temperature: -25 T +60 °C  
 Temperature Control: ON/OFF mode

Defrost control: interval cycles or evaporator temperature by Electric Heating /stopping compressor or hot-gas / reverse cycle  
 Measurement range: NTC: -50...+109 °C / -58...+228 °F; PTC: -50...+150 °C / -58...+302 °F

Display resolution: 1 ° o 0,1 ° Overall accuracy: +/- (0,5 % fs + 1 digit)  
 Sampling rate: 130 ms.; Display: 3 Digit Red (Blue optional) h 15,5 mm  
 Software class and structure: Class A

Compliance: Directive 2004/108/CE (EN55022: class B; EN61000-4-2: 8KV air, 4KV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2KV supply and relay outputs, 1KV inputs; EN61000-4-5: supply 2KV com. mode, 1 KV diff. mode; EN61000-4-6: 3V);  
 Directive 2006/95/CE (EN 60730-1, EN 60730-2-9).  
 Regulation 37/2005/CE (EN13485 air, S, A, 2, - 50°C +90°C with probe NTC 103AT11).

**INSTRUMENT ORDERING CODE**  
**Y39E** (mechanical keyboard); **Y39SE** (Sensitive Touch keyboard )

**a b c d e f g h i j k k ll**

**a : POWER SUPPLY**  
 H = 100...240 VAC; G = 12...24 VAC/VDC; F = 12 VAC/VDC

**b : OUT1**  
 R = Out1 Relay SPST-NO 16A

**c : OUT2**  
 R = Out2 Relay SPDT 8A; - = (No)

**d : OUT3**  
 R = Out3 Relay SPST-NO 5A; - = (No)

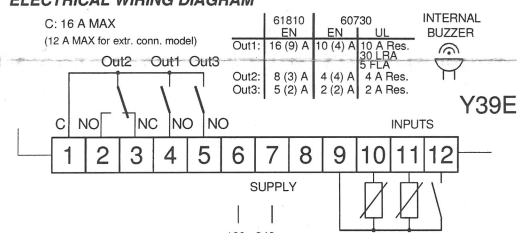
**e : BUZZER**  
 B = Buzzer; - = (No)

**f : TERMINAL BLOCK**  
 - = (Standard); E = Extractable

**g : DISPLAY**  
 - = Red; B = Blue

**h, i, j : INTERNAL CODES; k, ll : SPECIAL CODES**

**SCHEMA ELETTICO DI COLLEGAMENTO**  
**ELECTRICAL WIRING DIAGRAM**



**DIMENSIONI MECCANICHE, FORATURE E FISSAGGIO[mm]**  
**MECHANICAL DIM., PANEL CUT-OUT AND MOUNTING [mm]**

