

Double action controller with analogue output

1/4 DIN - 96 x 96

Q3 line

Quick Guide • ISTR-FQ3ENG02



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Model Code

The product code indicates the specific hardware configuration of the instrument, that can be modified by specialized engineers only.

Line	Basic	Accessories	Configuration	
			1 st part	2 nd part
Model:	Q3	A B C D	E 9 0 0	/ I L M N - O P Q R

Line	Q	3
Power supply		A
100...240Vac (-15...+10%)		3
24Vac (-25...+12%) or 24Vdc (-15...+25%)		5
Outputs OP1 - OP2 - OP4		B
Relay - Relay - SSR Drive		1
Relay - Relay - Relay		9
Serial Communications		C
None		0
RS485 Modbus/Jbus SLAVE		5
Options		D
None		0
Valve drive output		2
Analogue output + Remote Setpoint		5
Valve drive output + Analogue output (retr.) + Remote Setpoint		7
Setpoint Programmer - special function		E
Not fitted		0
Start-up + Timer		2
One "8 segments" program		3

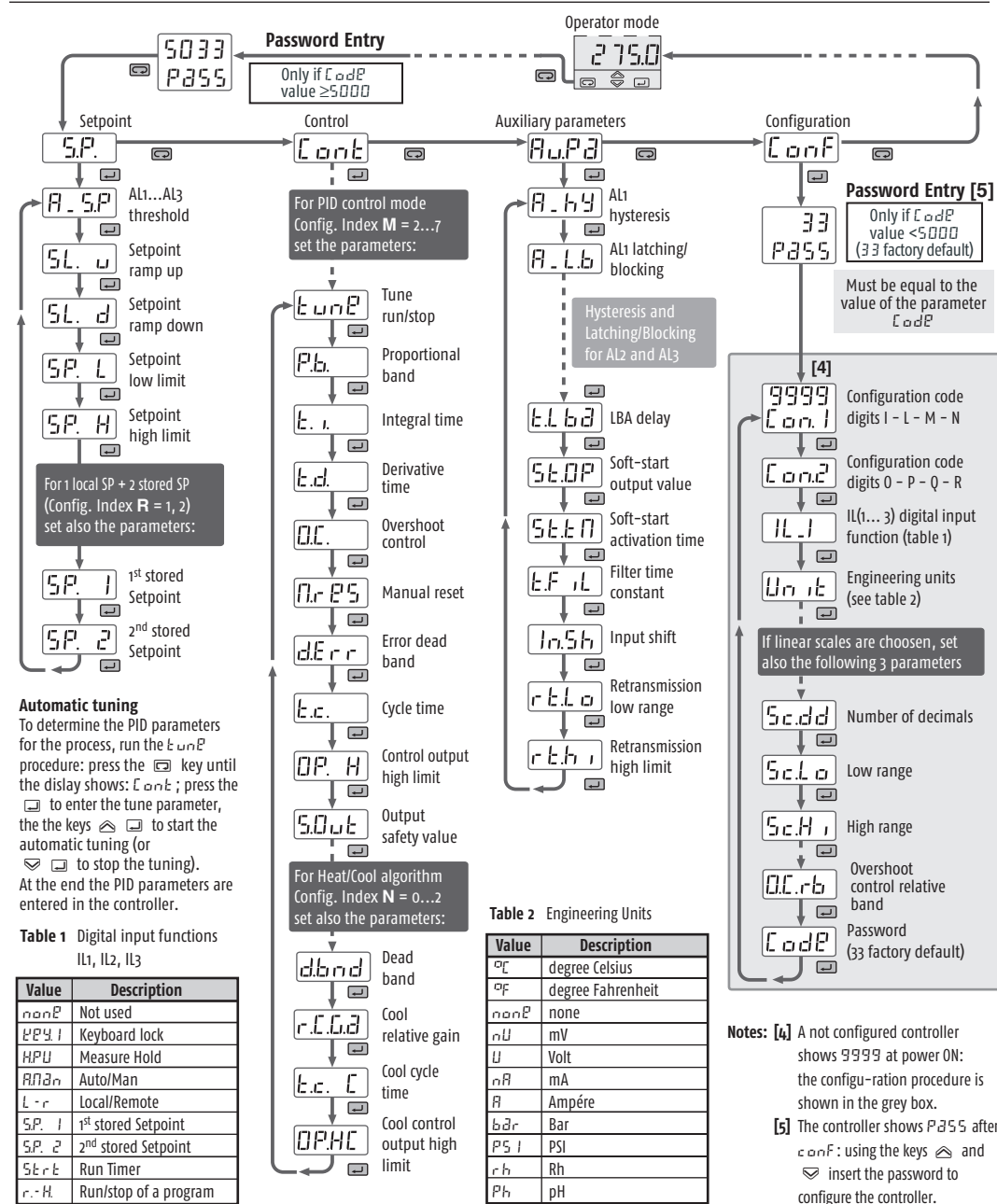
Controller configuration chart

The present chart includes only the basic parameters

For the list and the description of all the controller parameters see the User Manual.

When the controller is new and not configured shows the code 9999 at power ON. In this case NO PASSWORD is needed to configure the instrument (see the grey box in the chart below). Enter the configuration code in accordance with the desired functional characteristics.

Warning! If the parameter C_{odP} has previously set to a value ≥ 5000 , (for example 5033 in the chart) the controller is locked in operator mode; insert the correct password to access both the parameter and the configuration menus.



Declaration of Conformity and Manual retrieval

Q3 is panel mounting, Class II instrument. It has been designed with compliance to the European Directives.

All information about the controller use can be found in the User Manual: MIU_Q3_EN.pdf.

The Declaration of Conformity and the manual of the controller can be downloaded (free of charge) from the web-site:

www.ascontecnologic.com

Once connected to the web-site, search:

Q3

then click on Q3 from the result list.

In the lower part of the product page (in any language) is present the download area with links to the documents available for the controller (in the available languages).

Warning!

- Whenever a failure or a malfunction of the device may cause dangerous situations for persons, things or animals, please remember that the plant must be equipped with additional devices which will guarantee safety.

- We warrant that the products will be free from defects in material and workmanship for 18 months from the date of delivery. Products and components that are subject to wear due to conditions of use, service life and misuse are not covered by this warranty.

Configuration Code

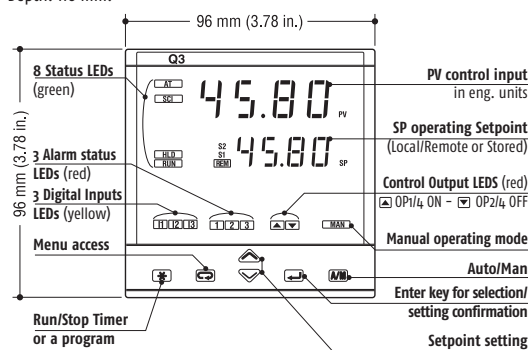
A 4 + 4 digits index code follows the model (letters from I... R). This code must be set to configure the controller. Using UP (\uparrow) and DOWN (\downarrow) keys insert the desired configuration code. When not configured the 1st part of the code is 9999.

Input type and range	I	L		
TR Pt100 IEC751	-99.9...300.0°C	-99.9...572.0°F	0	0
TR Pt100 IEC751	-200...600°C	-328...1112°F	0	1
TC L Fe-Const DIN43710	0...600°C	32...1112°F	0	2
TC I Fe-Cu45% Ni IEC584	0...600°C	32...1112°F	0	3
TC T Cu-CuNi	-200...400°C	-328...752°F	0	4
TC K Chromel-Alumel IEC584	0...1200°C	32...2192°F	0	5
TC S Pt10%Rh-Pt IEC584	0...1600°C	32...2912°F	0	6
TC R Pt13%Rh-Pt IEC584	0...1600°C	32...2912°F	0	7
TC B Pt30%Rh Pt6%Rh IEC584	0...1800°C	32...3272°F	0	8
TC N Nichrosil-Nisil IEC584	0...1200°C	32...2192°F	0	9
TC E Ni10%Cr-CuNi IEC584	0...600°C	32...1112°F	1	0
TC Ni-NiMo18%	0...1100°C	32...2012°F	1	1
TC W3%Re-W25%Re	0...2000°C	32...3632°F	1	2
TC W5%Re-W26%Re	0...2000°C	32...3632°F	1	3
Dc input 0...50mV linear	Engineering and units		1	4
Dc input to...50mV linear	Engineering and units		1	5
Custom input and range [1]			1	6

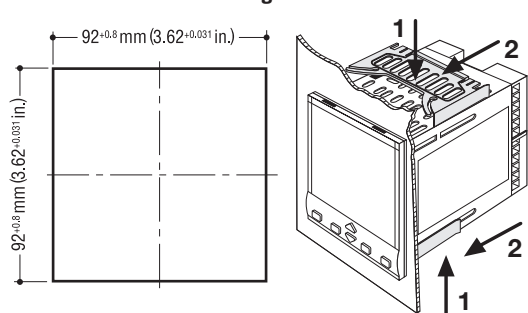
[1] For instance, other thermocouples types, ΔT (with 2 Pt100), custom linearisation etc.

Description and dimensions

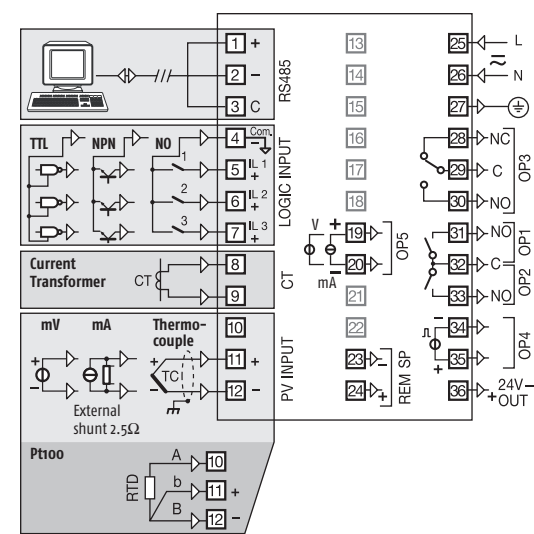
Depth: 10 mm.



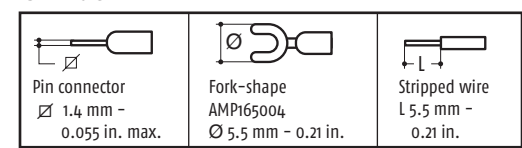
Panel cut out and mounting



Electrical connections



Terminals



Control mode	M	
ON-OFF reverse action	0	
ON-OFF direct action	1	
PID single reverse action	2	
PID single direct action	3	
PID double action	Linear cool output	4
	ON-OFF cool output	5
	Water cool output [2]	6
	Oil cool output [2]	7

[2] 2 different correcting methods of the control output are available. One for water and the other for oil:
 $OP\ water = 100 \cdot (OP2/hoo)2 - OP\ oil = 100 \cdot (OP2/hoo)1.5$

Output Configuration	N	
Relay (OP1)	Heat OP1, Cool OP2	0
SSR drive (OP4)	Heat OP1, Cool OP4	1
Analogue (OP5)	Heat OP4, Cool OP2	2
Valve drive (OP1 and OP2)	Heat OP1, Cool OP5	3
	Heat OP5, Cool OP2	4
	Heat OP4, Cool OP5	5
	Heat OP5, Cool OP4	6

Alarms 1, 2 and 3 type and function	O	P	Q
Disabled (or, only for alarm A13, used by Timer or related to the Program)	0	0	0
Sensor break/Loop break alarm (LBA)	1	1	1
Absolute	active high	2	2
	active low	3	3
Deviation	active high	4	4
	active low	5	5
Band	active out	6	6
	active in	7	7
Heater break by CT [3]	active during ON output state	8	8
	active during OFF output state	9	9

[3] Only possible whether "Output configuration" (N = 0 or 1) and H.F.S is NOT set to OFF

Setpoint type	R
Local only	0
Local and 2 tracking stored Setpoints	1
Local and 2 Stand-by stored Setpoints	2
Local and Remote (only if option is installed)	3
Local with trim (only with remote Setpoint)	4
Remote with trim (only if option is installed)	5
Time programmable (if option installed)	6

Parameter list

The parameters pointed out with grey background are those necessary to configure the options and are NOT shown in the "Configuration chart". All the parameters are fully described and explained in the user manual of the controller.

Code	Parameter Name	Value	
		Default	User
$C_{on.1}$	1 st Configuration code	9999	
$C_{on.2}$	2 nd Configuration code	0000	
IL 1	IL1 digital input function	OFF	
IL 2	IL2 digital input function	OFF	
IL 3	IL3 digital input function	OFF	
Unit	Engineering units	NONE	
$S_{c.dd}$	Decimal point	0	
$S_{c.L.o}$	Low range for engineering units	0	
$S_{c.H.i}$	High range for engineering units	9999	
r S.in	Remote Setpoint input range	4... 20	
b.a.u.d	Baud rate	9600	
r P.t.r	Continuous Output range	4... 20	
r t.h	Retransmitted signal selection	PV	
C_{odP}	Password	33	
L-r	Local/Remote Setpoint Selection	LOCAL	
S.S.E.L	Stored Setpoint Selection	NONE	
St.r.t	Program Start/Run/Hold	START	
A 15.P	Al1 alarm threshold	0	
A 25.P	Al2 alarm threshold	0	
A 35.P	Al3 alarm threshold	0	
S.L.u	Slope up	OFF	
S.L.d	Slope down	OFF	
S.P.L	Setpoint low limit	PV.LO	
S.P.H	Setpoint high limit	PV.HI	
S.P.1	1 st stored Setpoint	0	
S.P.2	2 nd stored Setpoint	0	
r t.r	Ratio remote Setpoint	1.00	
b.i.a.s	Bias Remote Setpoint	0	
h.y	Control output hysteresis	0.5	
t_{unP}	Start/Stop One shot tuning (0=Stop 1=Run)	STOP	
P.b	Proportional band (hysteresis ON - OFF)	5.0	
t.i	Integral time	5.0	
t.d	Derivative time	1.00	

Code	Parameter Name	Value	
		Default	User
$O.C.$	Overshoot Control	1.00	
$O.C.r.b$	Overshoot Control relative band	0.5	
M.r.P.S	Manual reset	50.0	
d.E.r.r	Error Dead Band	OFF	
t.c.	Output Cycle time	20	
O.P.H	Control output high limit	100.0	
S.O.u.t	Output safety value	0.0	
M.t.N	Motor travel time	60	
M.H.Y	Minimum output step	0.5	
d.b.a.n.d	Heat/Cool Dead band	0.5	
r.C.G.a	Relative Cooling Gain	1.0	
h.y.C	Cool output Hysteresis	0.5	
t.c.C	Cool cycle time	20	
O.P.H.C	Cool output maximum value	100.0	
A 1.h.y	Al1 Alarm Hysteresis	0.5	
A 1.l.b	Al1 latching and blocking functions	NONE	
A 2.h.y	Al2 Alarm Hysteresis	0.5	
A 2.l.b	Al2 latching and blocking functions	NONE	
A 3.h.y	Al3 Alarm Hysteresis	0.5	
A 3.l.b	Al3 latching and blocking functions	NONE	
t.l.b.a	LBA delay	OFF	
S.t.r.t	Soft start output high value	0.5	
S.t.t	Soft start time	1	
t.f.i	Input filter	OFF	
In.S.h	Input shift	OFF	
A.d.d.r	Serial communications address	1	
r.t.l.o	Retransmission low range	PV.LO	
r.t.h	Retransmission high range	PV.HI	
t.m.o.d	Timer/Start-up operating mode	OFF	
t.r.c.t	Timer Action	OFF	
t.r.s	Timer Setting	0.5	
S.P.S.b	Stand-by Setpoint	0	
t.h.s.u	Hold time	1	
S.P.S.U	Start-Up Setpoint	0	
O.P.H.S	Output high limit during Start-up	100.0	