

MICROPROCESSOR-OPERATED BURNER CONTROL DEVICE

ESA GENIO SERIES

FEATURES

• Supply voltage:	115/230 Vac
• Frequency:	45÷65 Hz
• Power consumption (without outlets)	10 VA max
• Operating temperature	0÷60°C
• Storage temperature	-20 ÷80°C
• Protection fuse	3,15 A
• Maximum output capacity	3A @ 230 V cos Q = 0,5
• Probe voltage	280Vac
• Minimum ionization current	3 µA
• Flame current limitation	1mA
• Prepurge time	0÷65 sec (5 sec. multiple)
• First safety time	3-5-7-10 sec
• Reaction time	1 sec
• Resistance for burner counting device	1.8 KΩ ¼ W 1%
• Casing	thermoplastic
• Dimensions	200X120X93 mm
• Protection class	IP40
• Mass	1.200 g
• Mounting position	arbitrary
• Flame controlling device	flame rod or unirod
• Rod line length:	< 2mt



F702001

CE EC-87/02/61/a

APPLICATIONS

- Flame control for one stage, gas burners
- Flame control suitable for flame detection by means of flame rod or unirod (also in combination with each other)
- Local flame control, installed near the burner.

APPROVALS

- EN298 certificate for gas burners 0087/02/061

DESCRIPTION

ESA GENIO is a microprocessor-operated flame controlling device designed to supervise one-stage burners, displaying the status of the burner in an extremely simple though thorough way. The device is

supplied with a strong thermoplastic casing equipped with holes for cable outputs which may be cabled in advance if required and for the ignition transformer. On the front panel there is an on/off button, a reset button and three Leds for general information about power supply, status of the burner and lock out status. The device warns the controlling system if there is any burner failure in the burner either by closing the normally open contact or displaying no defaults in the burner via an output with a calibrated resistance to connect to a burner counting device. Esa Genio allows to change both the prepurge time and recycle even during the installation phase, whereas safety and reaction times are fixed and may only be modified by the producer.



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FUNCTIONING




When on, ESA GENIO starts the burner via the ignition transformer and gas safety valve, keeping the gas valve open even if there is some flame. If no flame lights or if the flame extinguishes, the device intercepts the gas valve and displays the lockout. By pushing the front reset button normal operating conditions are resumed. Before attempting to start the burner, ESA GENIO waits for as long as the

prepurge time which has been set. If the recycle is enabled, in case of flame loss the device automatically makes some further attempts to start the burner. The supply button permits to switch the burner off locally, no lockout position being signalled to the controlling system. In the table below the burner ignition sequence is described with the indication of the outputs.

BURNER IGNITION PHASE	GAS VALVE OUTPUT	TRANSFORMER OUTPUT	BURNER COUNTING DEVICE OUTPUT	BURNER LOCKOUT OUTPUT
Esa Genio off	Disabled	Disabled	Resistance on	Disabled
Prepurge time second time set	Disabled	Disabled	Resistance on	Disabled
Ignition phase second time set	Enabled	Enabled	Resistance on	Disabled
Flame	Enabled	Disabled	Resistance on	Disabled
Recycle for flame loss	Disabled	Disabled	Resistance on	Disabled
Lockout for flame loss	Disabled	Disabled	Resistance off	Enabled
Lockout for failed ignition	Disabled	Disabled	Resistance off	Enabled
Lockout for illegal flame before ignition	Disabled	Disabled	Resistance off	Enabled
Generic card lock	Disabled	Disabled	Resistance off	Enabled

DISPLAY

The display is made up of three diagnostic Leds, showing the different phases of the ignition cycle and the kind of burner lockout.

BURNER IGNITION PHASE	SUPPLY GREEN LED 	BURNER STATUS YELLOW LED 	LOCKOUT RED LED 
Esa Genio off	Off	Off	Off
Prepurge time second time set	(fixed) on	slow blinking	Off
Ignition phase second time set	(fixed) on	fast blinking	Off
Flame	(fixed) on	(fixed) on	Off
Recycle for flame loss	(fixed) on	Off	Off
Lockout for flame loss	(fixed) on	slow blinking	(fixed) on
Lockout for failed ignition	(fixed) on	1 slow blinking/2 fast blinking	(fixed) on
Lockout for illegal flame before ignition	(fixed) on	fast blinking	(fixed) on
Generic card lock	(fixed) on	(fixed) on	(fixed) on
Software lockout for undefined time	(fixed) on	fast blinking	Off

The software lockout phase is displayed when several resetting attempts are made in a very short time. In order to make a new start switch first off and then on the burner.

INSTALLATION



- Avoid placing the equipment near intense magnetic or electric fields, and in such conditions as to be exposed to direct heat or products resulting from combustion, such as corrosive liquids, solvents or gases.
- The equipment must be installed by skilled staff, in compliance with the regulations in force at the time and in the place of installation.
- A minimum protection class of IP40 must be always guaranteed when installing the device into the casing.
- This device is electrically fixed in a permanent way. After installation, make sure connections are correct. The inversion of the phase/neutral connection may compromise the safety of the device.
- Follow and respect all technical information, in particular the phase-neutral polarity, when making electric connections. The type of conductors and their location must be suitable for their application.
- Check the supply voltage, frequency and capacity are correct. Verify that the connected outputs do not exceed the maximum contacts capacity.
- Always connect the protection ground to the correct terminals and to any metallic frames using conductors of suitable section.
- ESA GENIO is meant for non intermittent operation. Therefore the controlling system must force the burner shutoff within 24 hours from uninterrupted working.
- Before carrying out any operation, ensure the power supply line and any other connections are disconnected.

PARAMETER CONFIGURATION

ESA GENIO allows to change both the prepurge time and the authorization for recycle via Dipswitch placed on the device card. Any change in the parameters must be carried out when the device is Off.




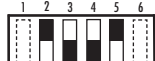




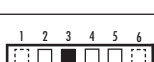
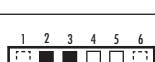
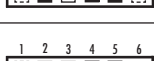
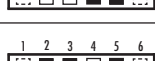




Recycle: Enabled/Disabled

The attempt to start a new cycle after some flame loss is enabled by switching the first Dip-switch on. When this Dip-switch is in the Off position no attempt to start a new cycle is carried out. After some flame loss therefore the device intercepts the gas valve and locks out and displays lockout.

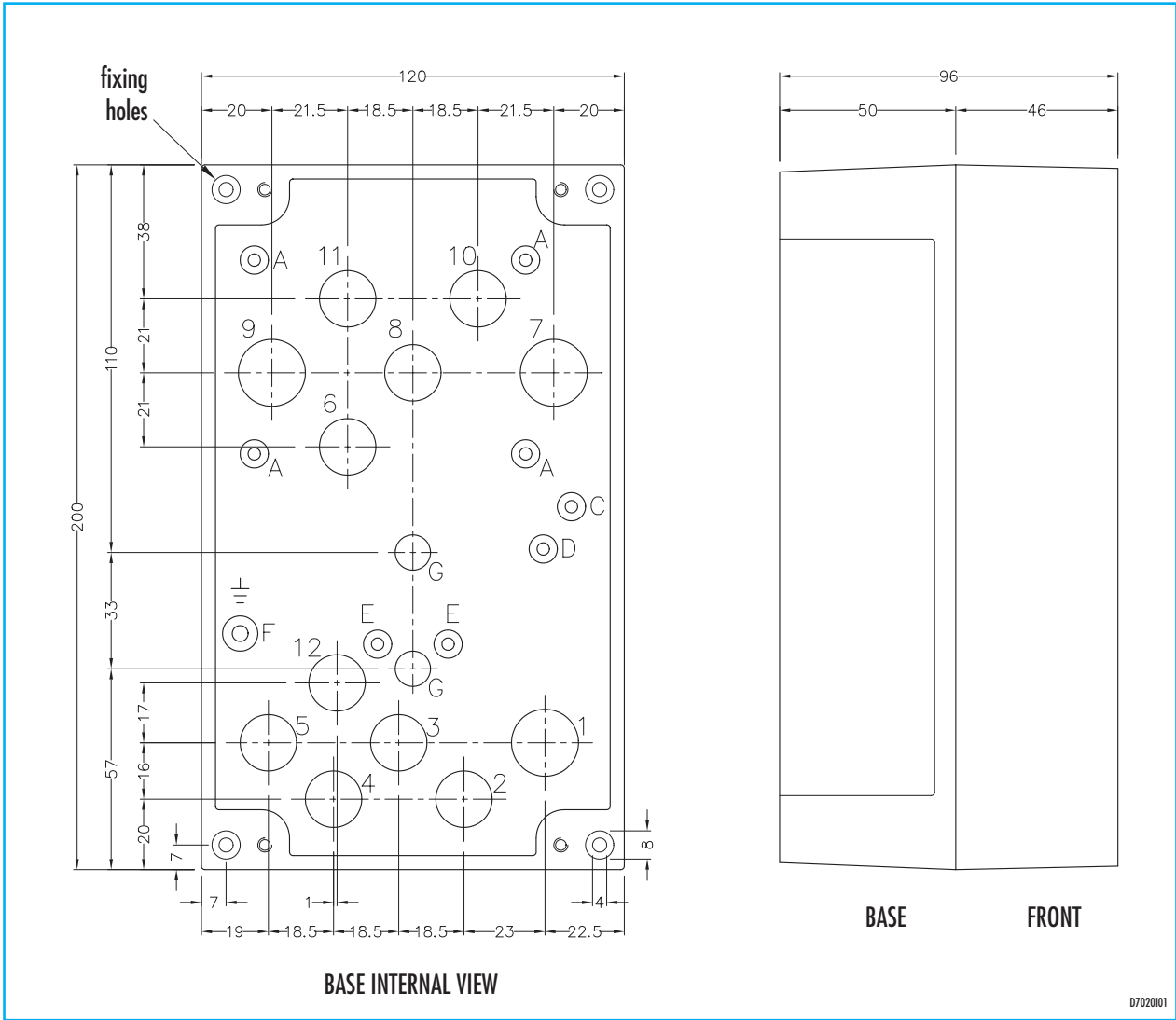
Recycle OFF	ON  OFF
Recycle ON	ON  OFF

Prepurge time setting

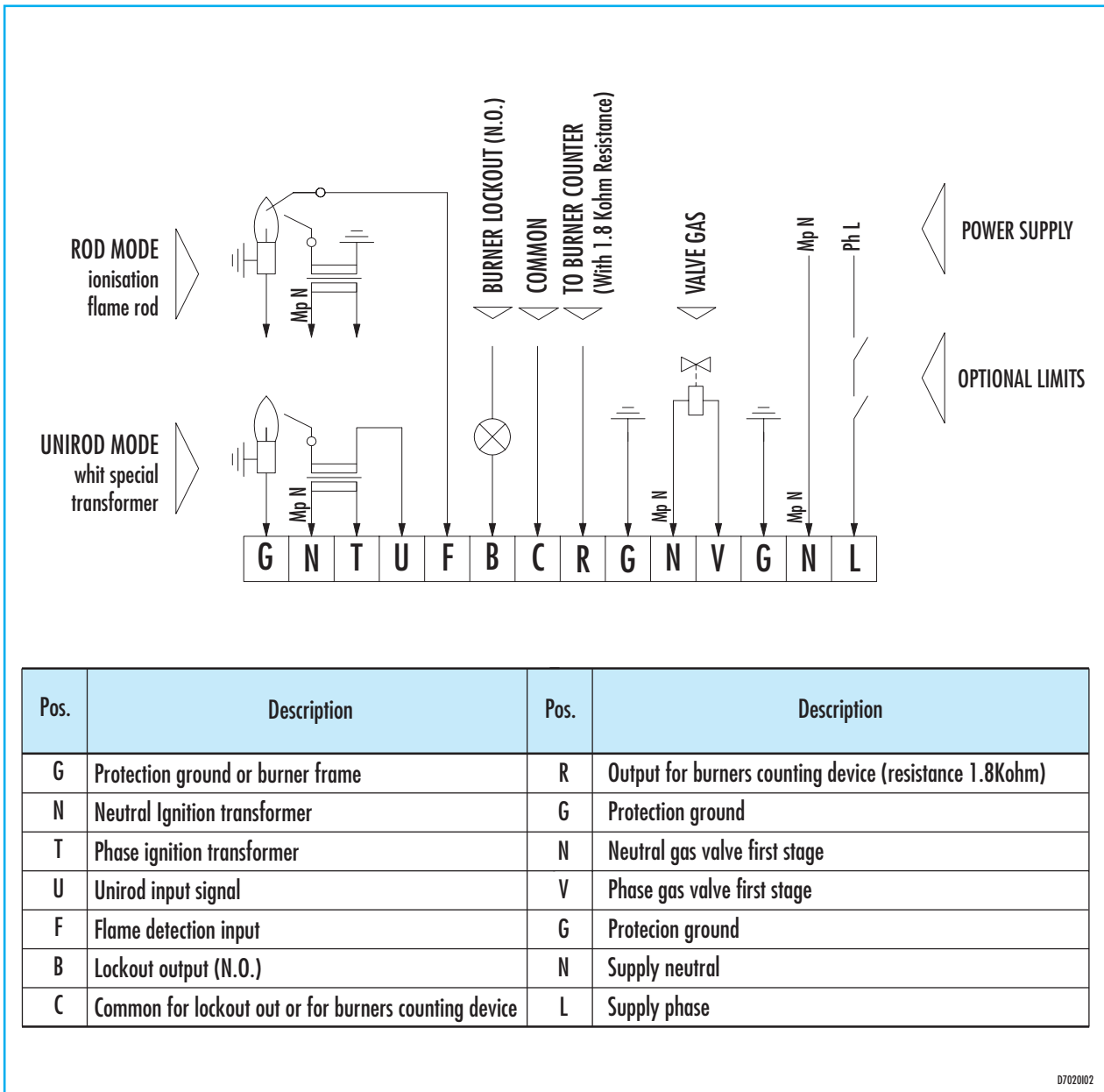
The prepurge time is set via four Dip-switched which in combination with each other guarantee a 0 to 65 second range, as shown in the following table. This opportunity allows to start several burners one after the other even with just one ignition signal or to change the prepurge time during installation.

Prepurge time: 0 sec.	ON  OFF	Prepurge time: 30 sec.	ON  OFF
Prepurge time: 1 sec.	ON  OFF	Prepurge time: 35 sec.	ON  OFF
Prepurge time: 3 sec.	ON  OFF	Prepurge time: 40 sec.	ON  OFF
Prepurge time: 5 sec.	ON  OFF	Prepurge time: 45 sec.	ON  OFF
Prepurge time: 10 sec.	ON  OFF	Prepurge time: 50 sec.	ON  OFF
Prepurge time: 15 sec.	ON  OFF	Prepurge time: 55 sec.	ON  OFF
Prepurge time: 20 sec.	ON  OFF	Prepurge time: 60 sec.	ON  OFF
Prepurge time: 25 sec.	ON  OFF	Prepurge time: 65 sec.	ON  OFF

OVERALL DIMENSIONS



ELECTRICAL CONNECTIONS



D7020002

ORDERING CODE

ESA GENIO A 001 03 C N 230 /

CYCLE STARTING	
Automatic start (Autostart)	A

PREPURGE	
from 0 to 65 seconds (s. tab. on p 4)	(*)

FIRST SAFETY TIME	
3 seconds	03
5 seconds	05
7 seconds	07
10 seconds	10

FIRST STAGE GAS OUTPUT	
Intermittent (continuous)	C

SPECIAL VERSION	
Standard	/
Transformer mounting	T
Rack version	R
Wiring	C
Coupled to Esa Trafo	A

SUPPLY VOLTAGE	
115 V ac +10 -15%	115
230 V ac +10 -15%	230

IN CASE OF FLAME LOSS	
Lockout	N
Start new cycle	Y

(*) Insert value (in seconds)



NOTE: Based on the company's policy aimed at a continuous improvement on product quality, ESA-PYRONICS reserves the right to bring changes to the technical characteristics of this device without previous notice. Our catalog updated to the latest version is available on our web site www.esapyronics.com and it is possible to download modified documents

WARNING: When operating, this combustion system can be dangerous and cause harm to persons or damage to equipment. Every burner must be provided with a protection device that monitors the combustion. The installation, adjustment and maintenance operations should only be performed by trained and qualified personnel.