

# 7SG22 Iota

Input / Output Units

## Document Release History

This document is issue 2010/02. The list of revisions up to and including this issue is:  
Pre release

2010/02	Document reformat due to rebrand

## Software Revision History

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# 1 General

Performance Data to:  
IEC60255-6, IEC60255-6A and IEC60255-16.

## 2 Auxiliary Energizing Quantity

### 2.1 DC Power Supply

	Nominal	Operating Range
VAUX	50/110/125V	37.5V to 137.5V dc
VAUX	220/250/260V	175V to 286V dc

### 2.2 DC Status Inputs

Nominal Voltage	Operating Range
30/34	18V to 37.5V
48/54	37.5V to 60V
110/125	87.5V to 137.5V
220/250	175 to 286V

#### Status Input Performance (30V and 48V)

Minimum DC current for operation	10mA
Reset/Operate Voltage Ratio	≥ 90%

#### Status Input Performance (110V and 220V)

Minimum DC current for operation	1mA
Reset/Operate Voltage Ratio	≥ 90%

NB Status operating voltage need not be the same as the main energising voltage. 48/54 volt rated status inputs can be supplied with external dropper resistors, for use with 110V or 220V dc supplies, as follows:-

#### Status Input External Resistances

Nominal Voltage	Resistor Value;Wattage
110/125V	2k7 ± 5% ; 2.5W
220/250V	8k2 ± 5% ; 6.0W

Two types of status inputs are provided, and can be set by operation of DIL switch viz:-

- a) High speed status inputs.

Typical response time	<5ms
Typical drop off time	<5ms
Typical response time when programmed to energise an output relay contact	<10ms

- b) Scheme status inputs. These status inputs will not respond to either 250V RMS 50/60 Hz applied for 1 second or to the discharge of a 10µF capacitor charged to maximum DC auxiliary supply voltage.

Typical response time	<25ms
Typical Drop off time	<25ms
Typical response time when programmed to energise an output relay contact	<30ms

## 3 Accuracy

### 3.1 Accuracy Influencing Factors

#### Temperature

Ambient range	-10°C to +55°C
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Variation over range	≤ 5%
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**Auxiliary DC Supply – IEC 60255-11**

Allowable superimposed ac component	≤ 12% of DC voltage
Allowable breaks/dips in supply (collapse to zero from nominal voltage)	≤ 20ms

**4 Burdens****4.1 D.C. Burden**

	DC Burden (watts)
Quiescent (Typical)	15
Max	27

**5 Output Contact Performance**

Contact rating to IEC 60255-0-2.

**Carry continuously** 5A ac or dc

**Make and Carry**

(limit L/R ≤ 40ms and V ≤ 300 volts)

for 0.5 sec	20A ac or dc
for 0.2 sec	30A ac or dc

**Break**

(limit ≤ 5A or ≤ 300 volts)

ac resistive	1250VA
ac inductive	250VA @ PF ≤ 0.4
dc resistive	75W
dc inductive	30W @ L/R ≤ 40 ms 50W @ L/R ≤ 10 ms

Minimum number of operations	1000 at maximum load
Minimum recommended load	0.5W, limits 10mA or 5V

**6 Environmental Withstand****Temperature - IEC 6068-2-1/2**

Operating range	-10°C to +55°C
Storage range	-25°C to +70°C

**Humidity - IEC 6068-2-3**

Operational test	56 days at 40°C and 95% RH
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**Transient Overvoltage –IEC 60255-5**

Between all terminals and earth or between any two independent circuits without damage or flashover	5kV 1.2/50µs 0.5J
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**Insulation - IEC 60255-5**

Between all terminals and earth	2.0kV rms for 1 min
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Between independent circuits	2.0kV rms for 1 min
Across normally open contacts	1.0kV rms for 1 min

**High Frequency Disturbance -  
IEC 60255-22-1 Class III**

	Variation
2.5kV Common (Longitudinal) Mode	≤ 3%
1.0kV Series (Transverse) Mode	≤ 3%

**Electrostatic Discharge -  
IEC 60255-22-2 Class IV**

	Variation
8kV contact discharge	≤ 5%

**Conducted & Radiated Emissions -  
EN 55022 Class A**

Conducted	0.15MHz to 30MHz
Radiated	30MHz to 1000MHz

**Conducted Immunity -  
IEC 60255-22-6 Class A**

0.15MHz to 80MHz, 10V/m 80% Modulated
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**Radiated Immunity -  
IEC 60255-22-3 Class III**

	Variation
80MHz to 1000MHz, 10V/m 80% Modulated	≤ 5%

**Fast Transient – IEC 60255-22-4 Class IV**

	Variation
4kV 5/50ns 2.5kHz repetitive	≤ 3%

**Surge Impulse –IEC61000-4-5 Class IV**

	Variation
4kV Line-Earth	≤ 10%
2kV Line-Line	≤ 10%

**Vibration (Sinusoidal) –IEC 60255-21-1 Class 1**

		Variation
Vibration response	0.5gn	≤ 5%
Vibration endurance	1.0gn	≤ 5%

**Shock and Bump–IEC 60255-21-2 Class 1**

		Variation
Shock response	5 gn 11ms	≤ 5%
Shock withstand	15 gn 11ms	≤ 5%
Bump test	10 gn 16ms	≤ 5%

**Seismic – IEC 60255-21-3 Class 1**

		Variation
Seismic Response	1gn	≤ 5%

**Mechanical Classification**

Durability	In excess of 10 <sup>6</sup> operations
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