

## IEC 61508 CONFORMITY CERTIFICATE.

MECÁNICA PRISMA, SL Certifies that the following Pneumatic Actuators Systems have PFD or PFH suitable to Use In a SIL Safety Loops:

Component	Failure Rate	Dangerous Failure Rate	PFD	PFH	Capable SIL (PFD)	Capable SIL (PFH)
PA00	1,00E-08	1,00E-08	<b>4,38E-05</b>	1,00E-08	<b>SIL3</b>	SIL3
PA00S	1,80E-08	1,80E-08	<b>7,89E-05</b>	1,80E-08	<b>SIL3</b>	SIL3
PA05	3,00E-08	3,00E-08	<b>1,31E-04</b>	3,00E-08	<b>SIL3</b>	SIL3
PA05S	1,30E-08	1,30E-08	<b>5,70E-05</b>	1,30E-08	<b>SIL3</b>	SIL3
PA10	1,10E-08	1,10E-08	<b>4,82E-05</b>	1,10E-08	<b>SIL3</b>	SIL3
PA10S	1,20E-08	1,20E-08	<b>5,26E-05</b>	1,20E-08	<b>SIL3</b>	SIL3
PA15	1,40E-08	1,40E-08	<b>6,14E-05</b>	1,40E-08	<b>SIL3</b>	SIL3
PA15S	1,20E-08	1,20E-08	<b>5,26E-05</b>	1,20E-08	<b>SIL3</b>	SIL3
PA20	1,80E-08	1,80E-08	<b>7,89E-05</b>	1,80E-08	<b>SIL3</b>	SIL3
PA20S	1,50E-08	1,50E-08	<b>6,58E-05</b>	1,50E-08	<b>SIL3</b>	SIL3
PA25	1,80E-08	1,80E-08	<b>7,89E-05</b>	1,80E-08	<b>SIL3</b>	SIL3
PA25S	2,70E-08	2,70E-08	<b>1,84E-05</b>	2,70E-08	<b>SIL3</b>	SIL3
PA30	4,00E-07	4,00E-07	<b>1,75E-03</b>	4,00E-07	<b>SIL2</b>	SIL2
PA30S	2,08E-07	2,08E-07	<b>9,12E-04</b>	2,08E-07	<b>SIL3</b>	SIL3
PAW	1,20E-08	1,20E-08	<b>5,26E-05</b>	1,20E-08	<b>SIL3</b>	SIL3
PAWS	1,60E-08	1,60E-08	<b>7,02E-05</b>	1,60E-08	<b>SIL3</b>	SIL3

Pneumatic Actuators included in this Certificate are according to the following classification:

HTF 0, Type A, Low Demand Operation Mode, SFF is limited to the HTF.

The capable assessment results carried out by the CFSE, are based on the Field Experience obtained from MECANICA PRISMA, SL.

X. Albareda / Technical Manager. 2014/11/17

### ACTUATORS ACCORDING TO:

ISO TS 29001, API Q1, PED 97 23 EC, ATEX 94 9 EC,  
 ROHS 2002 95 EC, DNV & GL Type Approval Maritime Product,  
 SIL (IEC-61508), Cryogenic Services, Gost R Certification & TR CU Certification.



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Component	Failure Rate	Dangerous Failure Rate	PFD	PFH	Capable SIL (PFD)	Capable SIL (PFH)
P40	6,30E-08	6,30E-08	<b>2,76E-04</b>	6,30E-08	<b>SIL3</b>	SIL3
P40S	5,20E-08	5,20E-08	<b>2,28E-04</b>	5,20E-08	<b>SIL3</b>	SIL3
P40T	9,60E-08	9,60E-08	<b>4,21E-04</b>	9,60E-08	<b>SIL3</b>	SIL3
P40ST	1,27E-07	1,27E-07	<b>5,57E-04</b>	1,27E-07	<b>SIL3</b>	SIL3
P50	1,56E-07	1,56E-07	<b>6,84E-04</b>	1,56E-07	<b>SIL3</b>	SIL3
P50S	2,55E-07	2,55E-07	<b>1,11E-04</b>	2,55E-07	<b>SIL3</b>	SIL3
P50T	3,24E-07	3,24E-07	<b>1,42E-03</b>	3,24E-07	<b>SIL2</b>	SIL2
P50ST	1,89E-06	1,89E-06	<b>8,31E-03</b>	1,89E-06	<b>SIL2</b>	SIL2
PA60	1,63E-06	1,63E-06	<b>7,29E-03</b>	1,63E-06	<b>SIL2</b>	SIL2
PA60S	3,25E-06	3,25E-06	<b>1,42E-02</b>	3,25E-06	<b>SIL1</b>	SIL1
PA70	6,22E-07	6,22E-07	<b>2,72E-03</b>	6,22E-07	<b>SIL2</b>	SIL2
PA70S	4,44E-07	4,44E-07	<b>1,94E-03</b>	4,44E-07	<b>SIL2</b>	SIL2

Pneumatic Actuators included in this Certificate are according to the following classification:

HTF 0, Type A, Low Demand Operation Mode, SFF is limited to the HTF.

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X. Albareda / Technical Manager. 2014/11/17

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 ROHS 2002 95 EC, DNV & GL Type Approval Maritime Product,  
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## IEC 61508 CONFORMITY CERTIFICATE.

MECÁNICA PRISMA, SL Certifies that the following Pneumatic Actuators Systems have PFD or PFH suitable to Use In a SIL Safety Loops:

Component	Failure Rate	Dangerous Failure Rate	PFD	PFH	Capable SIL (PFD)	Capable SIL (PFH)
PP00	2,27E-09	2,27E-09	<b>9,56E-06</b>	2,27E-09	<b>SIL3</b>	SIL3
PP00S	1,81E-09	1,81E-09	<b>7,89E-06</b>	1,81E-09	<b>SIL3</b>	SIL3
PP10	1,98E-09	1,98E-09	<b>8,33E-06</b>	1,98E-09	<b>SIL3</b>	SIL3
PP10S	1,49E-09	1,49E-09	<b>6,14E-06</b>	1,49E-09	<b>SIL3</b>	SIL3
PP20	4,21E-09	4,21E-09	<b>1,84E-05</b>	4,21E-09	<b>SIL3</b>	SIL3
PP20S	1,37E-08	1,37E-08	<b>5,70E-05</b>	1,37E-08	<b>SIL3</b>	SIL3
PPW	1,28E-07	1,28E-07	<b>5,64E-04</b>	1,28E-07	<b>SIL3</b>	SIL3
PPWS	1,20E-09	1,20-09	<b>5,27E-06</b>	1,20-09	<b>SIL3</b>	SIL3

Pneumatic Actuators included in this Certificate are according to the following classification:

HTF 0, Type A, Low Demand Operation Mode, SFF is limited to the HTF.

The capable assessment results carried out by the CFSE, are based on the Field Experience obtained from MECANICA PRISMA, SL.

X. Albareda / Technical Manager. 2014/11/17

### ACTUATORS ACCORDING TO:

ISO TS 29001, API Q1, PED 97 23 EC, ATEX 94 9 EC,  
 ROHS 2002 95 EC, DNV & GL Type Approval Maritime Product,  
 SIL (IEC-61508), Cryogenic Services, Gost R Certification & TR CU Certification.



## **IEC 61508 CONFORMITY CERTIFICATE (2010 Issue).**

MECÁNICA PRISMA SL, Certifies that the following Rack & Pinion Pneumatic Actuators Systems have a PFD Capable to be used on a SIL Safety Loops:

Actuator	Failure Rate $\lambda$	Dangerous Failure Rate $\lambda_D$	PFD	SIL Capable
PI00	2,10E-07	2,10E-07	<b>9,21E-04</b>	<b>SIL3</b>
PI10	1,47E-07	1,47E-07	<b>6,45E-04</b>	<b>SIL3</b>
PI20	4,28E-07	4,28E-07	<b>1,88E-03</b>	<b>SIL2</b>
PI30	6,96E-07	6,96E-07	<b>3,05E-03</b>	<b>SIL2</b>
PI40	2,26E-06	2,26E-06	<b>1,01E-03</b>	<b>SIL2</b>
PI00S	6,64E-08	6,64E-08	<b>2,91E-04</b>	<b>SIL3</b>
PI10S	5,62E-08	5,62E-08	<b>2,47E-04</b>	<b>SIL3</b>
PI20S	8,44E-07	8,44E-07	<b>3,70E-04</b>	<b>SIL3</b>
PI30S	1,60E-07	1,60E-07	<b>7,02E-04</b>	<b>SIL3</b>
PI40S	2,26E-06	2,26E-06	<b>1,01E-03</b>	<b>SIL2</b>

Rack & Pinion Pneumatic Actuators included in this Conformity Certificate are according to the following classification:

HTF 0, Type A, Low Demand Operation Mode and the SFF is limited to the HTF.

The capable assessment results carried out by the CFSE, are based on the Field Experience Data Base obtained by MECANICA PRISMA, SL.

X. Albareda / Technical Manager. 2015/01/21

### **ACTUATORS ACCORDING TO:**

ISO TS 29001, API Q1, PED 97 23 EC, ATEX 94 9 EC,  
 ROHS 2002 95 EC, DNV & GL Type Approval Maritime Product,  
 SIL (IEC-61508), Cryogenic Services, Gost R Certification & TR CU Certification.

