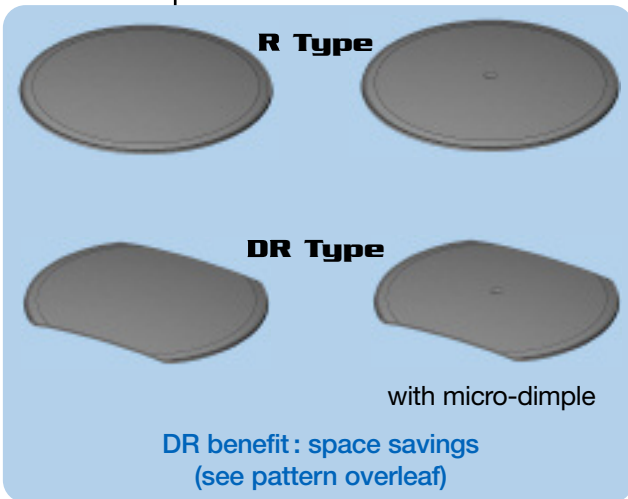


SWITCH'AIR™ Round & Double Radius domes

NICOMATIC metal domes are used in any type of Man/Machine interface (MMI). The most common application for small diameter 4mm and 5mm Round & Double-Radius domes lies in mobile phone handsets, due to space and thickness savings. Every kind of push-button could integrate a NICOMATIC METAL DOME and/or DOME ARRAYS.

2 TYPES



ADVANTAGES

The NICOMATIC SWITCH'AIR™ Round & DR domes offer :

- Excellent tactile effect even after rigorous tests (click ratio > 50%)
- Very long life expectancy : over 5 million cycles
- Stable forces and homogeneity of forces per batch number
- Control of dimensional and mechanical characteristics
- No burrs, thus eliminating the scratching effect
- Full-cut technology for longer life expectancy
- Successful and reliable automatic placement with NICOMATIC machines
- The standard model is pre-nickel plated to avoid all risk of contamination
- 100% traceability per batch number

PRODUCTION CAPACITY

NICOMATIC is one of the worldwide largest manufacturers of metal domes:

- Over 100 standard references available
- On-site production and R&D
- Proprietary manufacturing process for EL & DOME ARRAYS

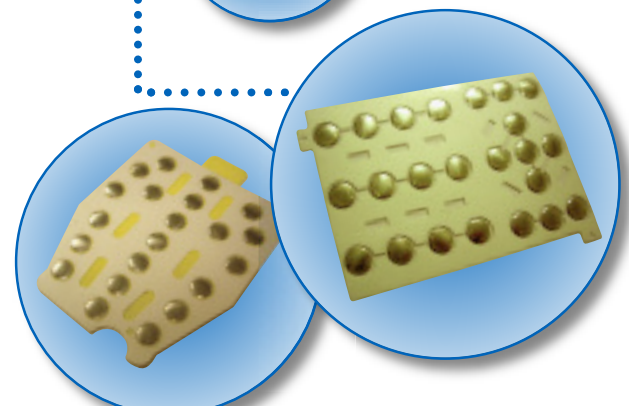
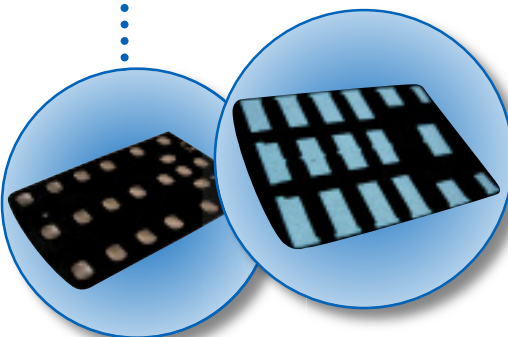
QUALIFICATION TESTS

- Life expectancy
- Overload test (static load)
- Overstroke
- Sweet spot (position of the actuator shifted from the dome centre)
- O.S.O. test (at a time : overload, sweet spot, overstroke)
- Electrical measurement

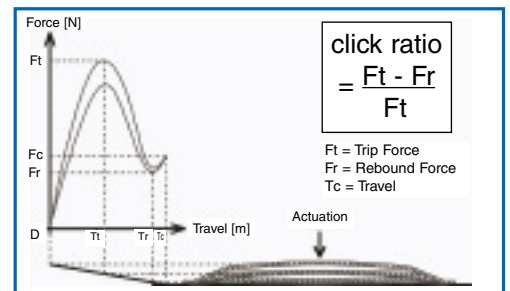
PACKAGING

NICOMATIC SWITCH'AIR™ ROUND & DR domes are either supplied :

- In bulk quantities
- In Pre-Assembled Spacer (PAS) custom-made arrays
- In Electroluminescent (EL) dome arrays



Mechanical characteristics



NICOMATIC INTERNATIONAL SUBSIDIARIES :

NICOMATIC NORTH AMERICA
165 Veterans Way, Unit 200
WARMINSTER, PA 18974 USA
Tel. +1 (215) 444-9580
Fax +1 (215) 444-9581
Email : sales@nicomatic.net

NICOMATIC SOUTH AMERICA
Av. Brigadeiro Faria Lima,
2.639 - cj. 10a Jardim Paulistano
01452-000 São Paulo BRAZIL
Tel. +55 11 3815-4411
Fax +55 11 3814-6133
Email : carlos.guimaraes@nicomatic.com.br

NICOMATIC CHINA
Nicomatic (Tianjin) Electronics Co, Ltd.
6A XEDA Jimei Industrial Park Xiqing
Economic & Development Area Tianjin CHINA
Tel. +86 22 238 88 050
Fax +86 22 238 88 060
Email : sales@nicomatic.cn

NICOMATIC INDIA
A-32 Ground Floor
Mohan Cooperative Industrial Area
Mathura Road - New-Delhi 110044 INDIA
Tel. +91 11 420 919 21
Fax +91 11 420 919 99
Email : india@nicomatic.com



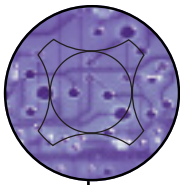
NICOMATIC HEADQUARTERS

173, rue des Fougères / Z.I. les Bracots / F-74890 Bons-en-Chablais
Tel. +33 (0)4 50 36 13 85 - Fax +33 (0)4 50 36 11 33
Email : nicomatic@nicomatic.fr



NICOMATIC FRANCE
is certified ISO 9001

For more information on the NICOMATIC distributor network, please visit the web site <http://www.nicomatic.com>



SWITCH'AIR™ Round & Double Radius domes

SERIES R - DR DOMES

MATERIAL

- Stainless steel
- RoHS directive compliant
- REACH regulations compliant

PLATING

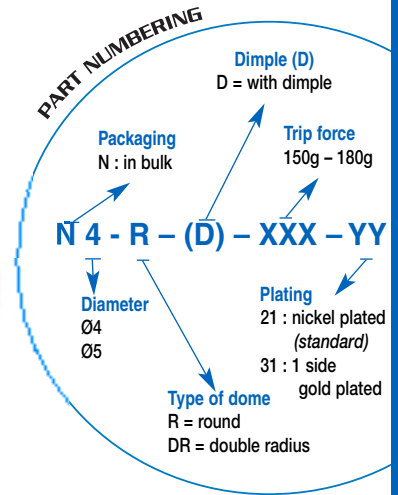
- Nickel plated standard model (-21)
- Optional one side gold plated (-31)

ENVIRONMENTAL

- Storage temperature from -55°C to + 125°C
- Operating temperature from -40°C to + 105°C

ELECTRICAL

- Rated voltage up to 100 V RMS
- Rated current 5µA to 100 mA
- Contact resistance < 100 mΩ
- Switching capacity 1 W



DOME SPECIFICATIONS

4 MM ROUND DOMES

- With and without dimple

DOME REFERENCE XXX	150	180	220
Trip force (g)	150 +30 / -10	180 +/- 25	220 +/- 25
Rebound force (g)	80 +/- 30	90 +/- 30	100 +/- 30
Height (mm)	0.20 +/- 0.03	0.20 +/- 0.03	0.23 +/- 0.03
Total travel (mm) without dimple	0.14 +/- 0.03	0.14 +/- 0.10	0.17 +/- 0.03
Total travel (mm) with dimple	0.135 +/- 0.03	0.135 +/- 0.03	0.165 +/- 0.03
Foot print (mm)	Ø 3,9 +/- 0.05	Ø 3,9 +/- 0.05	Ø 3,9 +/- 0.05
Diameter (mm)	4 +/- 0.05	4 +/- 0.05	4 +/- 0.05
Pattern	A (mm)	4.5	4.5
	B (mm)	3	3
	C (mm)	1.7	1.7
Click ratio (%)	30 - 70	40 - 70	40 - 70

5 MM ROUND DOMES

- With and without dimple

DOME REFERENCE XXX	150	180	220
Trip force (g)	150 +30 / -10	180 +/- 25	220 +/- 25
Rebound force (g)	80 +/- 30	90 +/- 30	100 +/- 30
Height (mm)	0.23 +/- 0.03	0.25 +/- 0.03	0.25 +/- 0.03
Total travel (mm) without dimple	0.17 +/- 0.03	0.19 +/- 0.03	0.19 +/- 0.03
Total travel (mm) with dimple	0.16 +/- 0.03	0.18 +/- 0.03	0.18 +/- 0.03
Foot print (mm)	Ø 4,9 +/- 0.05	Ø 4,9 +/- 0.05	Ø 4,9 +/- 0.05
Diameter (mm)	5 +/- 0.05	5 +/- 0.05	5 +/- 0.05
Pattern	A (mm)	5.5	5.5
	B (mm)	4	4
	C (mm)	2.5	2.5
Click ratio (%)	30 - 70	40 - 70	40 - 70

4 MM DOUBLE RADIUS DOMES

- With and without dimple

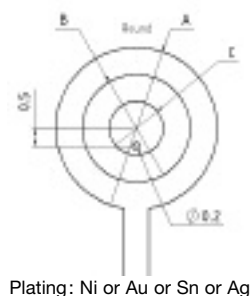
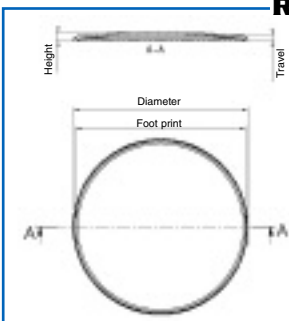
DOME REFERENCE XXX	150	180	220
Trip force (g)	150 +30 / -10	180 +/- 25	220 +/- 25
Rebound force (g)	80 +/- 30	80 +/- 30	100 +/- 30
Height (mm)	0.23 +/- 0.03	0.23 +/- 0.03	0.23 +/- 0.03
Total travel (mm) without dimple	0.17 +/- 0.03	0.17 +/- 0.03	0.17 +/- 0.03
Total travel (mm) with dimple	0.165 +/- 0.03	0.165 +/- 0.03	0.165 +/- 0.03
Foot print (mm)	Ø 3,9 +/- 0.05	Ø 3,9 +/- 0.05	Ø 3,9 +/- 0.05
Diameter (mm)	4 +/- 0.05	4 +/- 0.05	4 +/- 0.05
Pattern	A (mm)	4.5	4.5
	B (mm)	3	3
	C (mm)	1.7	1.7
	D (mm)	3.5	3.5
	E (mm)	2.5	2.5
H (mm)	3 +/- 0.05	3 +/- 0.05	3 +/- 0.05
Click ratio (%)	30 - 70	40 - 70	40 - 70

5 MM DOUBLE RADIUS DOMES

- With and without dimple

DOME REFERENCE XXX	150	180	220
Trip force (g)	150 +30 / -10	180 +/- 25	220 +/- 25
Rebound force (g)	80 +/- 30	90 +/- 30	100 +/- 30
Height (mm)	0.23 +/- 0.03	0.25 +/- 0.03	0.25 +/- 0.03
Total travel (mm) without dimple	0.17 +/- 0.03	0.19 +/- 0.03	0.19 +/- 0.03
Total travel (mm) with dimple	0.16 +/- 0.03	0.18 +/- 0.03	0.18 +/- 0.03
Foot print (mm)	Ø 4,9 +/- 0.05	Ø 4,9 +/- 0.05	Ø 4,9 +/- 0.05
Diameter (mm)	5 +/- 0.05	5 +/- 0.05	5 +/- 0.05
Pattern	A (mm)	5.5	5.5
	B (mm)	4	4
	C (mm)	2.5	2.5
	D (mm)	4.5	4.5
	E (mm)	3.5	3.5
H (mm)	3.8 +/- 0.05	3.8 +/- 0.05	3.8 +/- 0.05
Click ratio (%)	30 - 70	40 - 70	40 - 70

Round Dome



DR Dome

