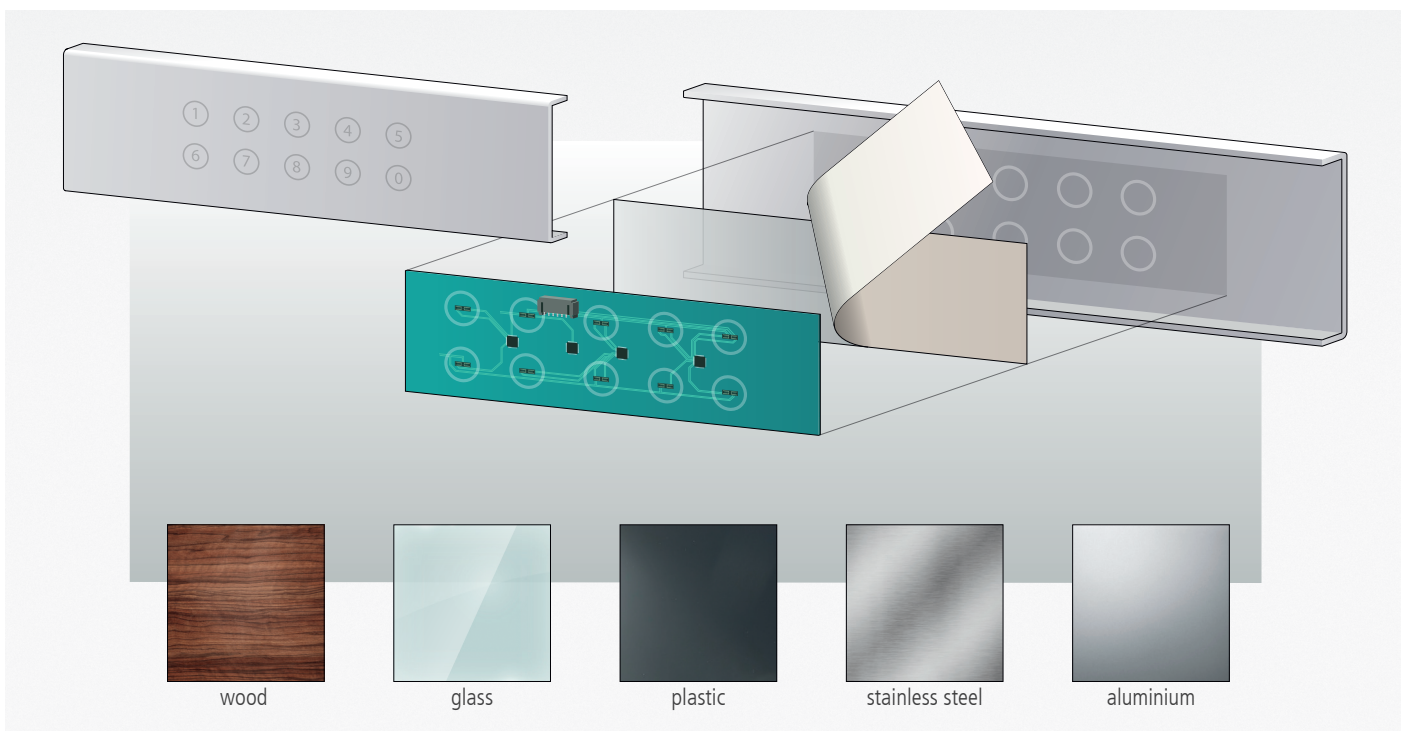


# DYNAFORCE

EXTREMELY SENSITIVE METAL TOUCH SENSOR KEYS

ALGRA

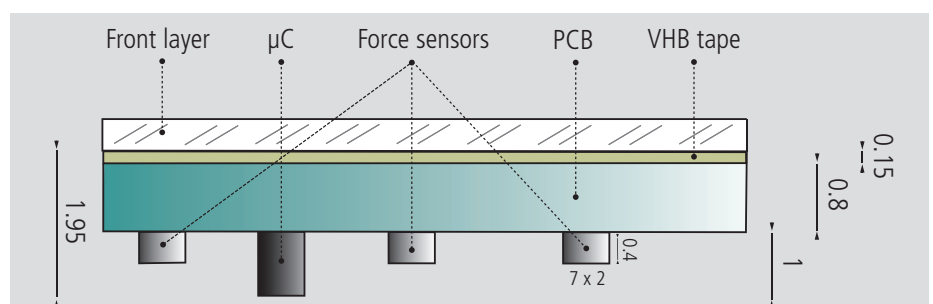


***'DYNAFORCE input technology is incredibly sensitive, yet unsusceptible to interference.'***

Dieter Matter, CEO Algra tec AG

The DYNAFORCE technology detects the smallest deformations on the control panel, which trigger a signal when the keys are touched. It doesn't matter whether the control panel is made of metal, glass or plastic: DYNAFORCE's intelligent signal processing works through metal or glass thicknesses of 0.3 to 1.2 mm without interference.

A sensor is situated behind each key on the PCB. A network of several strain gauge sensors recognises mechanical deformations and filters out the key input using intelligent evaluation. The strain gauge power sensors recognise even the smallest strain changes – even in metals such as stainless steel or aluminium. Typical areas of application include products such as household goods, industry and outdoor devices with special aesthetic design and products that must be highly robust and waterproof.



Scheme DYNAFORCE module

## Benefits

### High level of design exclusivity:

The control panel front is made using an integrated metal touch layer.

### Glove-sensitive operation:

Operation is just as sensitive with gloves on as without.

### Highest water protection rating:

Can be used to full capacity in wet conditions.

### Vandalism protection:

Use of metal control panel fronts protects against vandalism.

### Force touch:

Adjustable key pressure or key pressure-dependent operation.

### High temperature operational capability:

Temperature range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

### Long service life:

The tested service life is over 10 million cycles.

### Easy assembly:

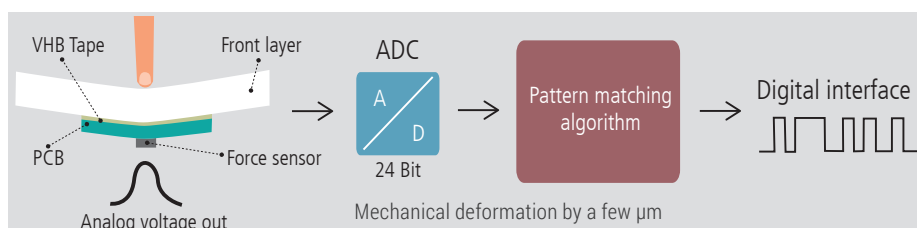
Assembly using self-adhesive tape peel-and-stick).

### Each key layout possible:

The key arrangement is, taking into account the minimum distance, freely selectable.

**'Typical areas of application include products such as household goods, industry and outdoor devices with special aesthetic design and products that must be highly robust and waterproof.'**

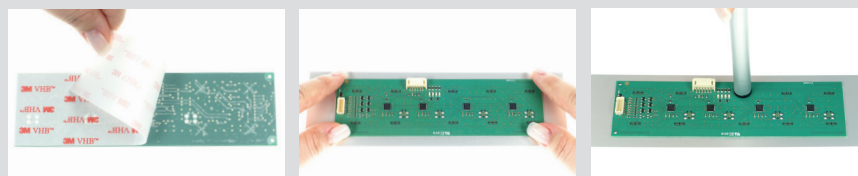
## Integrated signal processing



## Peel-and-stick

The DYNAFORCE module can be easily adhered to the back of a front made of any material using the peel-and-stick process:

1. Remove protective foil from module
2. Align module
3. Press on firmly



Locations:

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## Materials

Plastic:	1.0–2.0 mm
Aluminium:	0.3–1.2 mm
Stainless steel:	0.3–1.0 mm
Glass:	0.5–1.0 mm

## Material thickness at maximum sensitivity

## Technical data

Operating temperature / storage temperature:	$-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ / $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$
Supply voltage:	3.3 V (typically)
Power consumption:	600 $\mu\text{A}$ /button
IP protection class:	all IP classes can be implemented
Key sensitivity:	50 g to 1000 g adjustable
Life cycles:	> 10 million
Minimum key spacing (centre to centre):	12–20 mm
Sensor size:	7 x 2 x 0.4 mm (LxWxH)

ALGRA  
industrial technology

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TRIMADA  
electronic systems

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The general terms and conditions apply when the case is opened and can be viewed at [www.algragroup.ch/en/technologies/license-dynaforce/](http://www.algragroup.ch/en/technologies/license-dynaforce/)

# DYNAFORCE

## DEMO AND DEVELOPER KIT



**The Quick Start Guide for installing the demo software DesignStudio can be found on the USB stick.**

The latest version of the software and instructions are available on our website:  
<https://www.algragroup.ch/en/downloads/>

1. USB stick with instructions and demo software DesignStudio (Windows) for visualisation of key signals
2. DYNAFORCE demo module with optical, acoustic and haptic feedback (Mat.no. 159498)
3. Three identical 4-key modules with VHB tape for self-assembly (Mat.no. 161318)
4. Actuating pin 3N for calibration of the keys (Mat.no. 161922)
5. Press stamp for fixation of sensors on PCB (laminating aids), (Mat.no. 164540)
6. Connection and adapter cables
7. Demo and developer kit (Mat.no. 160553)

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