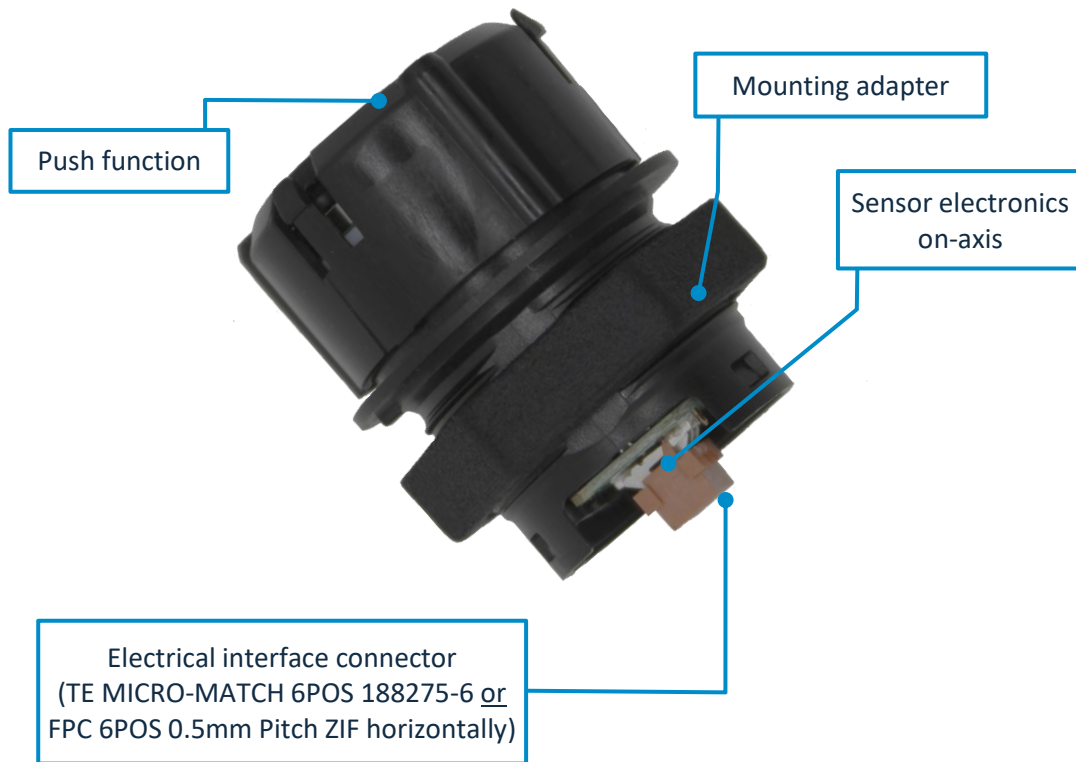


HAPTICORE FOUR

Datasheet

PRELIMINARY

HAPTICORE Four



Product variations

HAPTICORE Four are available in two mounting variations:



HAPTICORE Four

CORE04-A: Screw-on version for installation in the panel



HAPTICORE Four

CORE04-B: Snap-in version for installation in the panel

Technical specification

Material

Haptic actuator chamber	Metal
Shaft	Plastic
Socket & Nut	Plastic
Push mechanism	Plastic

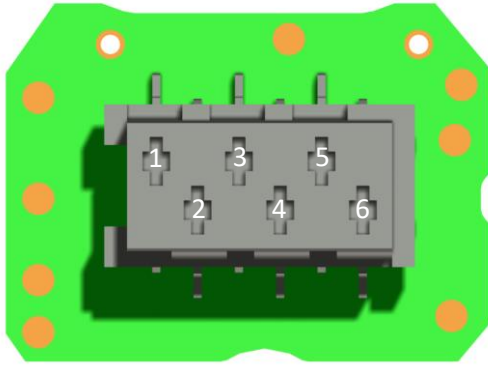
Mechanical specification

Mounting points	Single mounting point
Mounting diameter @ customer interface	• CORE04-A = Screw-on version: $\varnothing$ 22.3 incl. nose (standard installation hole) • CORE04-B = Snap-in version: $\varnothing$ 22.4 incl. defined contours for snapping in
Thread type	• CORE04-A = Screw-on version: M22x1 • CORE04-B = Snap-in version: no thread
Fastener to customer interface	nut with wrench size 26 mm (max. tightening torque 5 Nm)
Push function	Yes
Push actuating force	~ 3.5 N or ~ 7 N
Push travel	~ 0.7 mm
Cover mounting mechanism	Plugged in
Recommended cover diameter	29 to 40 mm

Electronic specification

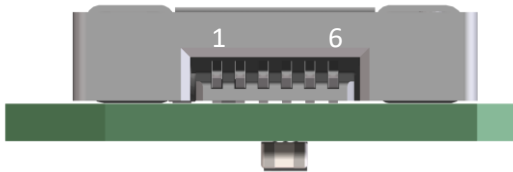
Sensor resolution	0.1°
Senor placement	On-axis
PCBA	Only sensor
Electronical interface - connector	TE MICRO-MATCH 6POS 188275-6 <u>or</u> FPC 6POS 0.5mm Pitch ZIF horizontally
Electronical interface - sensor	I ² C (400kHz)
ESD protection	IEC61000-4-2 Level 4 Contact Discharge $\pm$ 8kV Air Discharge $\pm$ 15kV

TE MICRO-MATCH 6POS 188275-6:



Pin	Signal
1	SDA
2	SCL
3	+3V3
4	GND
5	Coil_A
6	Coil_B

FPC 6POS 0.5mm Pitch ZIF horizontally:



Note regarding customer hardware design

To ensure electrical safety, the ground of the coil driver (H-bridge or similar) and the hall sensor must be connected to the same potential (common ground).

Operating ratings

Abbreviation	Parameter	Min	Typ	Max	Unit
V_L	Supply Voltage Logic	2.8	3.3	3.6	V
I_L	Supply Current Logic	-	1	20	mA
V_{IL}	Input Voltage Logic (low, SDA/SCL)	-	-	$V_L \times 0.3$	V
V_{IH}	Input Voltage Logic (high, SDA/SCL)	$V_L \times 0.7$	-	-	V
$V_{OL} I_{OL}=3mA$	Output Voltage (low, SDA/SCL)	-	-	0.4	V
P_C	Power Coil	-	-	2.5	W
R_C	Resistance Coil	11.0	11.5	12.0	Ω
I_C	Current Coil	-	-	450 ⁽¹⁾	mA
V_C	Voltage Coil (PCBA-Variant 0)	5.4 ⁽²⁾	12	30 ⁽³⁾	V
V_C	Voltage Coil (PCBA-Variant 1)	5.4 ⁽²⁾	12	15 ⁽³⁾	V

⁽¹⁾ for a maximum of 120 sec. by starting from a thermal equilibrium with the environment

⁽²⁾ Min. voltage to drive max. coil current

⁽³⁾ Rated insulation voltage

Absolute maximum ratings

Abbreviation	Parameter	Min	Typ	Max	Unit
V_L	Supply Voltage Logic	-0.3	-	4.0	V
V_I	Input Voltage Logic (low/high, SDA/SCL)	-0.3	-	6.5	V

Pullup Resistor I2C R_{PU}

Abbreviation	Resistance	Tolerance	Rated Power
R_{PU}	3.3 k Ω	1 %	1/16 W

Performance (Targets)

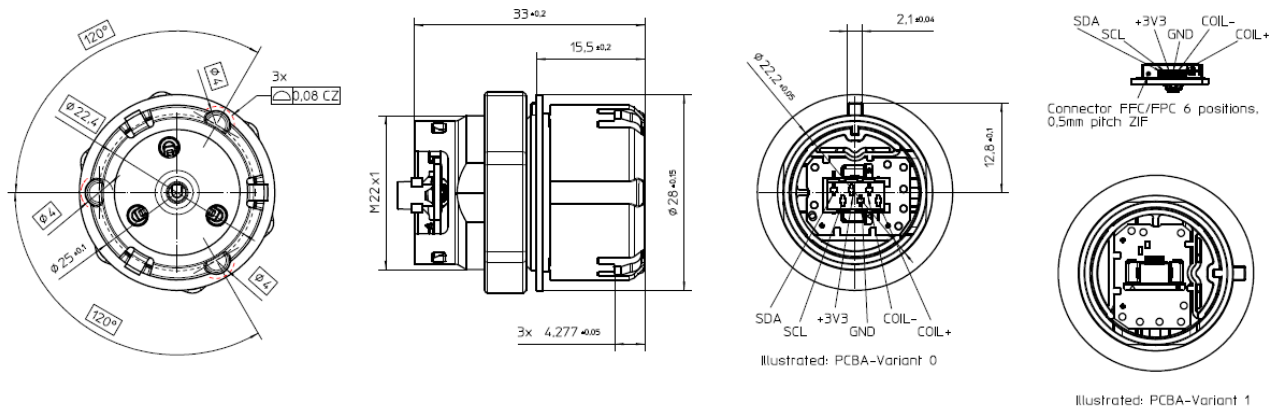
Lifetime rotations	1.000.000
Lifetime push actuations	2.000.000
Operating temperature range	-25 °C to + 85 °C
Storage & Transport temperature range	-40 °C to + 85 °C
Max. barrier torque	≥ 0.20 Nm @ 450 mA coil current
Mean base torque	< 10 mNm

Compliance

ROHS & REACH	Yes
UL 94	HB for all plastic parts

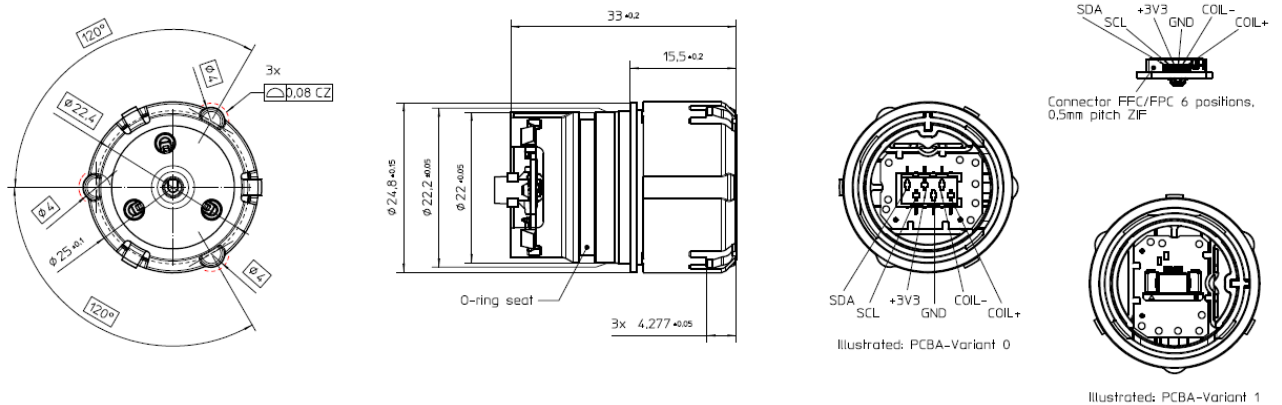
Dimensions

- **HAPTICORE Four – CORE04-A: Screw-on version for installation in the panel**



All dimensions in mm

- **HAPTICORE Four – CORE04-B: Snap-in version for installation in the panel**

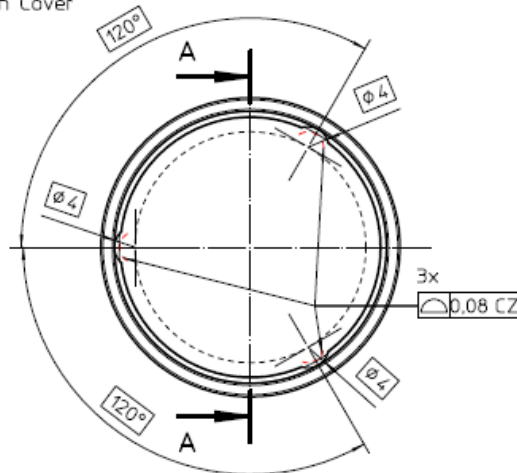


All dimensions in mm

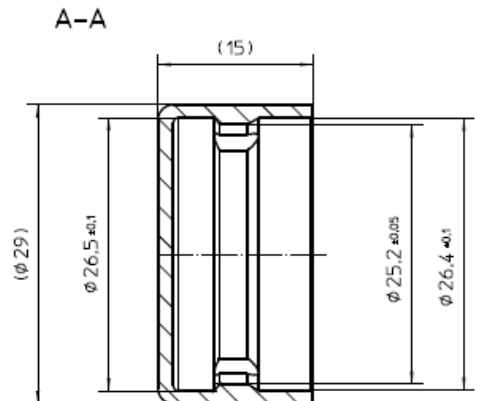
Design recommendation cover

- HAPTICORE Four – CORE04-A: Screw-on version for installation in the panel

Design recommendation Cover

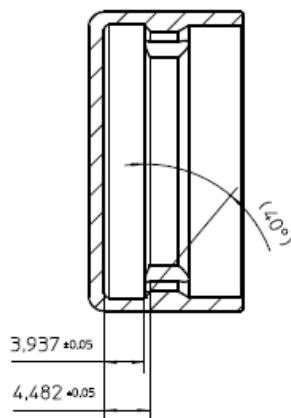


Tolerances apply to all cover designs

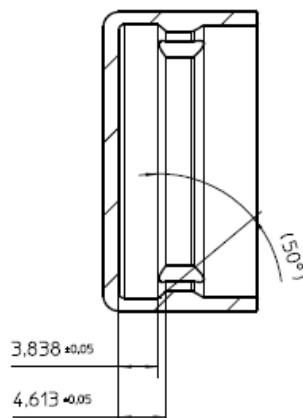


Tolerances apply to all cover designs

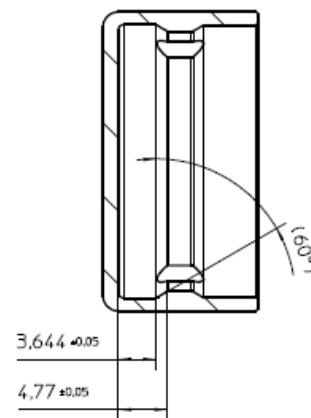
Cover Design 1



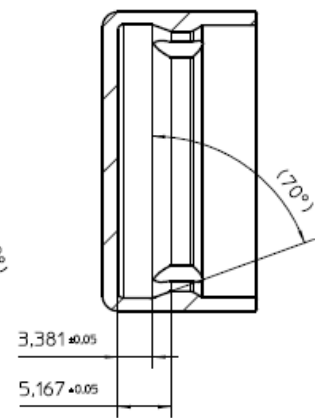
Cover Design 2



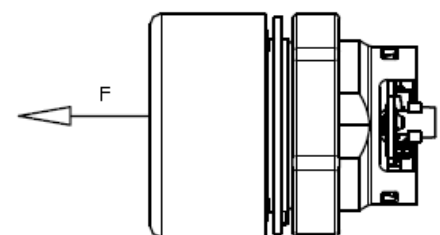
Cover Design 3



Cover Design 4



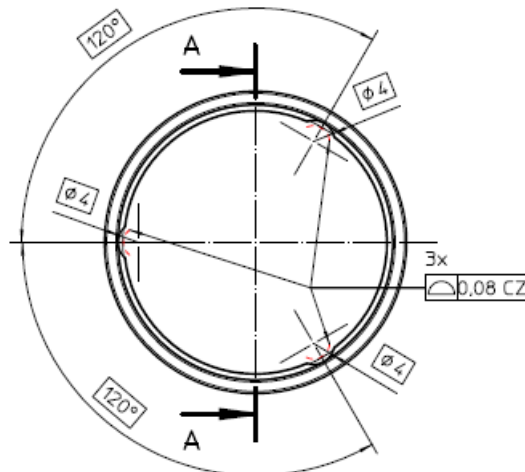
Cover Design recommendation	Guideline values for pull-off force F
1	400 N
2	160 N
3	120 N
4	80 N



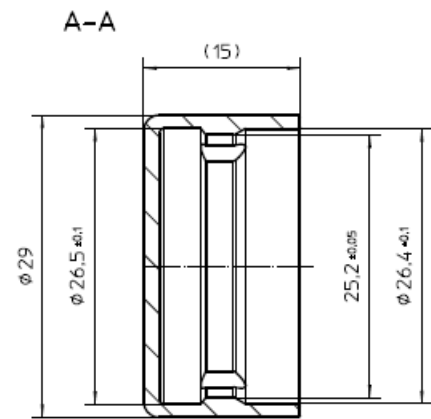
All dimensions in mm

- HAPTICORE Four – CORE04-B: Snap-in version for installation in the panel**

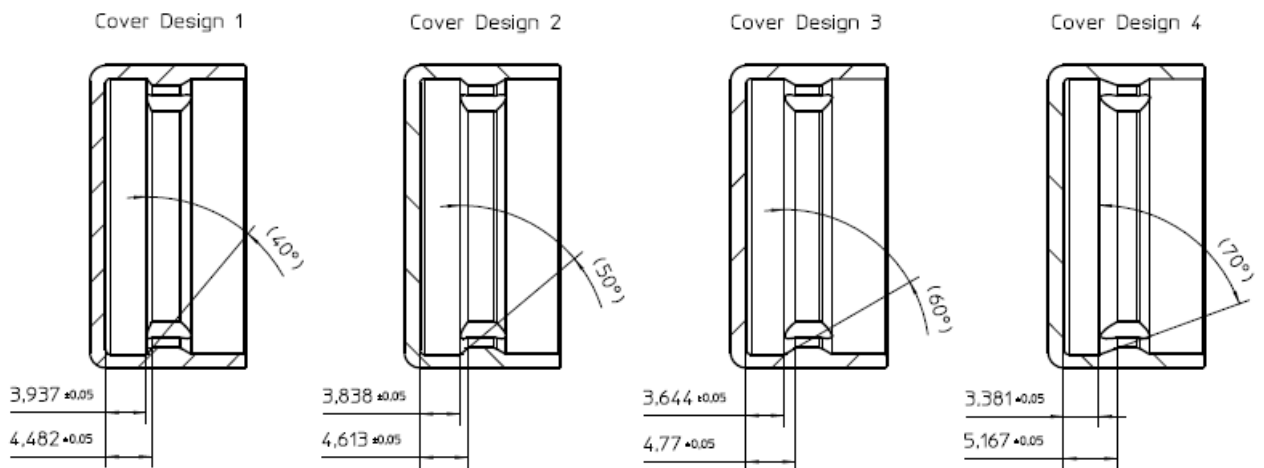
Design recommendation Cover



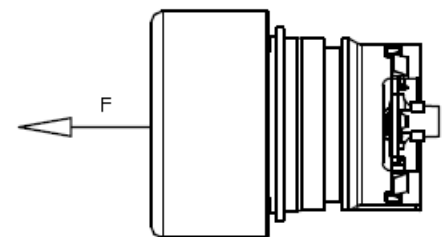
Tolerances apply to all cover designs



Tolerances apply to all cover designs



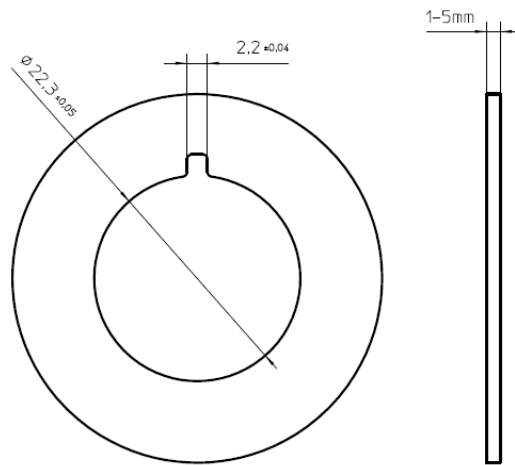
Cover Design recommendation	Guideline values for pull-off force F
1	400 N
2	160 N
3	120 N
4	80 N



All dimensions in mm

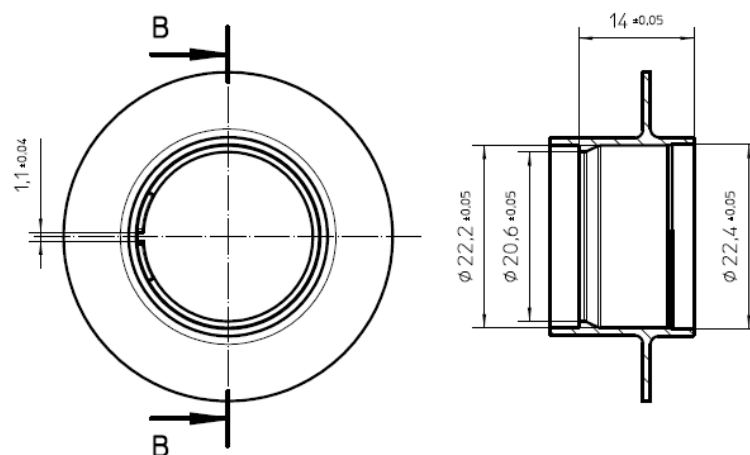
Panel Cutout / Design recommendation mounting adapter

- **HAPTICORE Four – CORE04-A: Screw-on version for installation in the panel**
Recommended panel thickness 1 to 5 mm



All dimensions in mm

- **HAPTICORE Four – CORE04-B: Snap-in version for installation in the panel**

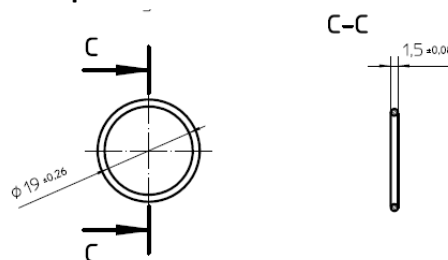


All dimensions in mm

For all other defined contours for snapping in, see CAD model and drawing.

Design recommendation O-Ring

- **HAPTICORE Four – CORE04-B: Snap-in version for installation in the panel**



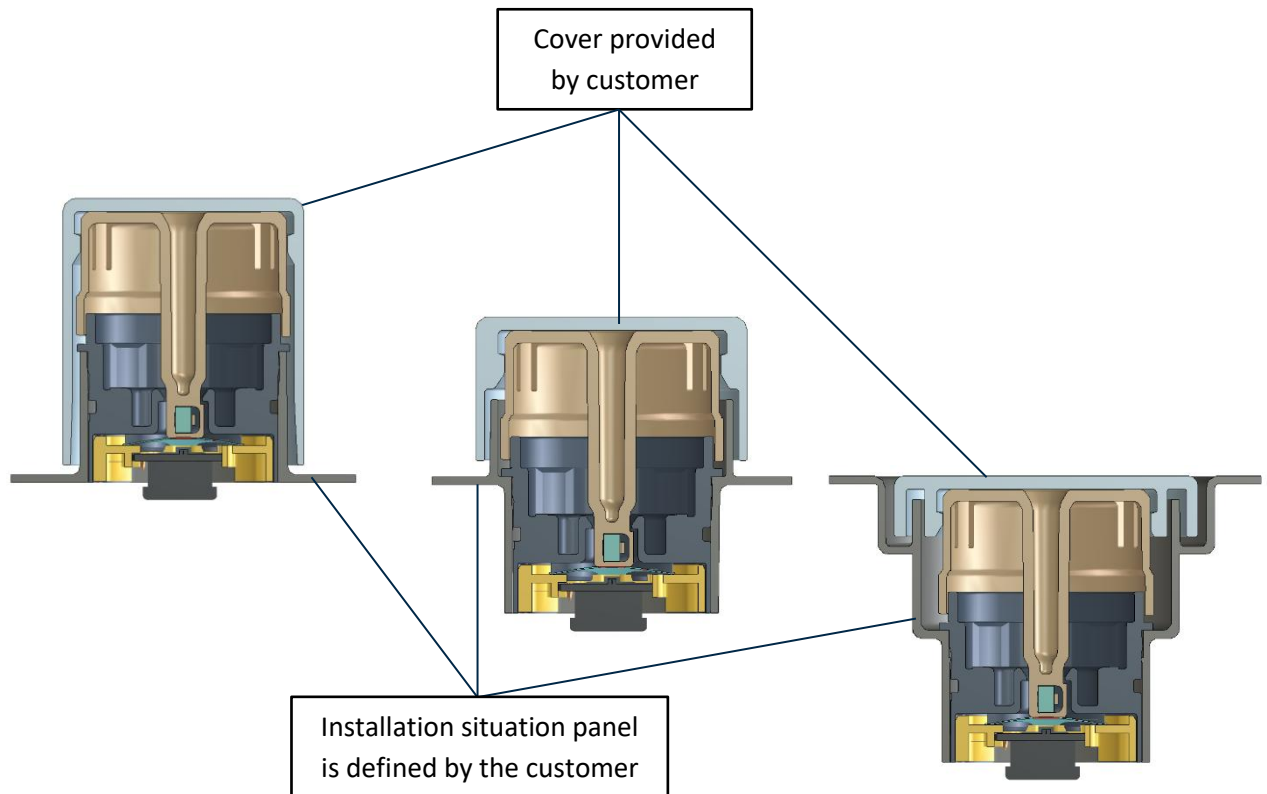
All dimensions in mm

Mounting info

1. HAPTICORE Four screw-on version for installation in the panel is fixed with a plastic nut.

Please only tighten the plastic nut by hand!

2. HAPTICORE Four snap-in version for installation in the panel can be realized in different recessed levels. Please see the following examples:



The scope of delivery from XeelTech in the form of the HAPTICORE Four always remains the same. Variations can be created by the customer through the corresponding design of the installation situation.

Cable type recommendation

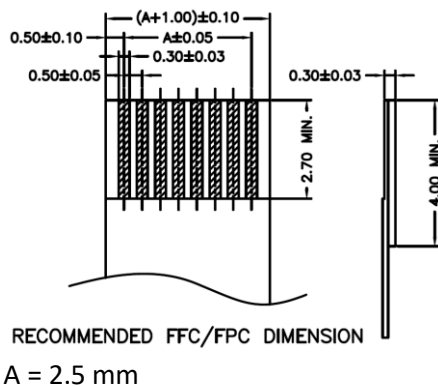
The following cable type is recommended

- A) for variant TE MICRO-MATCH 6POS 188275-6:

[Micro-MaTch Standard MOW to MOW Cable Assembly | TE Connectivity](#)

- B) for variant FPC 6POS 0.5mm Pitch ZIF horizontally:

Part type: Flexcable, 6 contacts, 0.5 mm pitch, min. 4 mm stiffener, 30 mm length up to a length about 152 mm

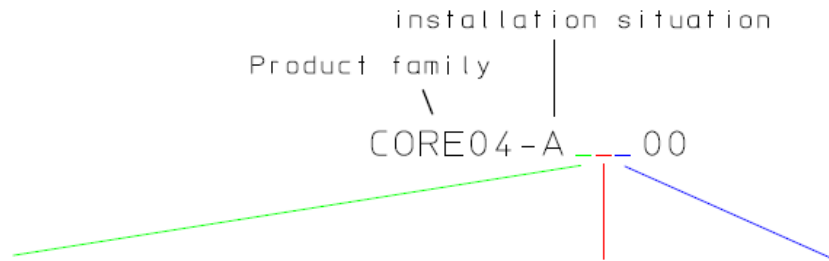


Part number as example for the 30 mm variant with 8 mm stiffener: [0151660052](#)

HAPTICORE Four type overview

- HAPTICORE Four – CORE04-A: Screw-on version for installation in the panel

Designation of the assembly



PCBA-Variant	Configuration	Push force
0 = Connector: TE MicroMatch 188275-6	0 = Standard	0 = no Push
1 = Connector: HR F0500WR-S-06PNLNG1GB0R		1 = 3,5N
		2 = 7N

Item number	Item description
8555267.AC	CORE04-A00200
8555458.AC	CORE04-A10200
8556011.AC	CORE04-A10100
8557582.AC	CORE04-A10000

- **HAPTICORE Four – CORE04-B: Snap-in version for installation in the panel**

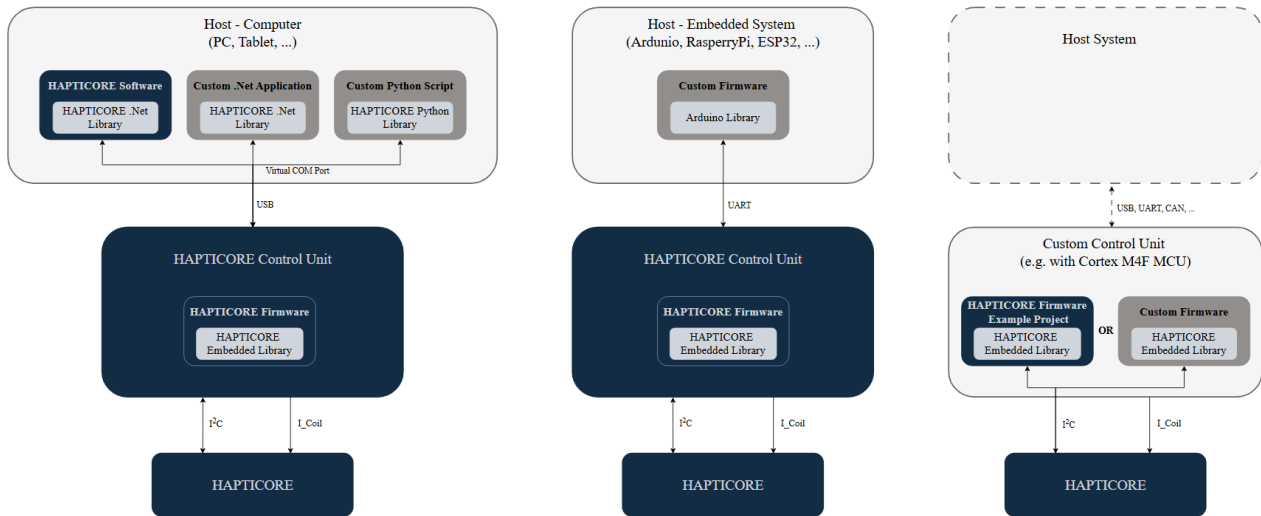
Designation of the assembly

installation situation
Product family
CORE04-A-00

PCBA-Variant	Configuration	Push force
0 = Connector: TE MicroMatch 188275-6	0 = Standard	0 = no Push
1 = Connector: HR F0500WR-S-06PNLNG1GB0R		1 = 3,5N
		2 = 7N

Item number	Item description
8555274.AC	CORE04-B00200
8555465.AC	CORE04-B10200
8556028.AC	CORE04-B10100

System integration options



All specifications and dimensions are subject to change

Contact XeelTech

Do you have questions regarding the HAPTICORE technology, need support during the installation, or are interested in our serial products?

Contact our support team. We are at your disposal at any time.



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