

# Touchless Button A121

## Reference Application

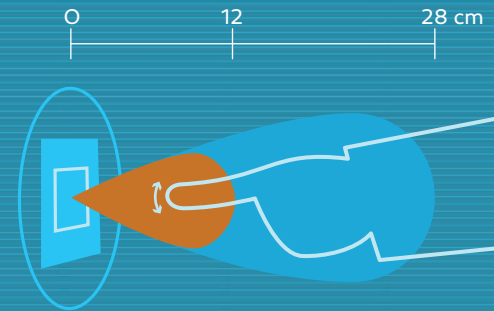
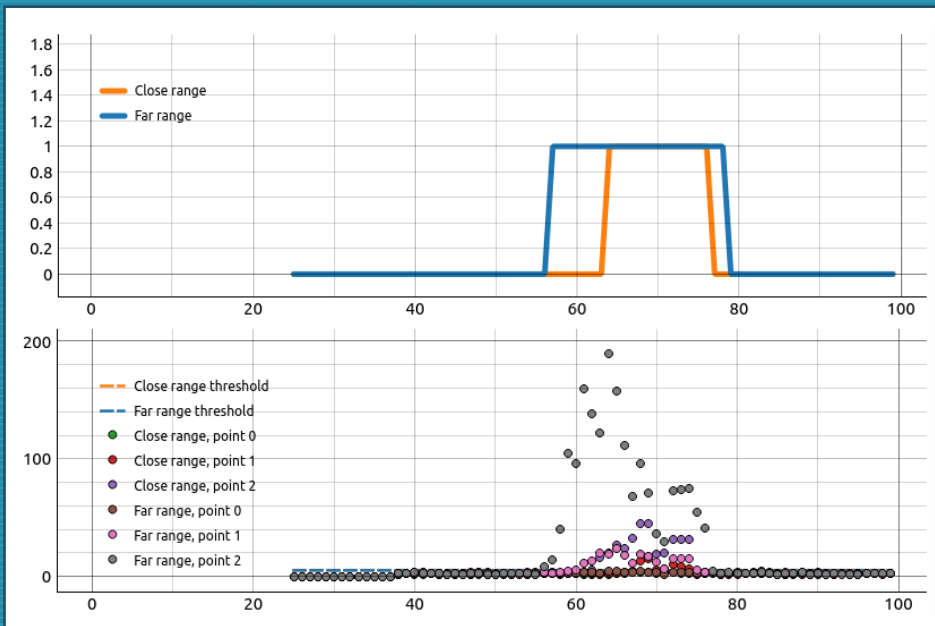
### EXPLORE THE NEXT SENSE

A reference application is Acconeer's way to give you a jump start in your development. With our Touchless Button application, we aim to completely eliminate the need for mechanical buttons. The users should be able to simply "touch" the air in front of a virtual button. We have focused on getting false-positive detections down and having very responsive functionality. The application is configurable to handle both short (5–12 cm) and long (12–28 cm) ranges from the sensor. You can choose to use both ranges simultaneously. The update rate is set high, and the application runs in continuous mode to ensure responsiveness. Average power consumption is 69 mA.

#### Memory usage

FLASH	70 kB
RAM	10–13 kB

### Button press in Exploration tool



In the tests, we used far and short range simultaneously. We first registered a button press at long range (blue) and then another one at short range (orange). The bottom graph shows the number of detections above the threshold.

### Test results

	-10°C		Room temperature		50°C	
	True Positive	False Positive	True Positive	False Positive	True Positive	False Positive
Finger tap (6 cm)	1	0	1	0.02	1	0
Wave (6 cm)	1	0	1	0	1	0
Hand tap (12 cm)	0.99	0	0.99	0	1	0
Wave (28 cm)	1	0	1	0	0.98	0.01

The test was done in a realistic scenario, both with and without prior instructions to the people performing the test. To the left are the test results when no instructions were given. When given instructions to approach the button as they would approach a mechanical button, the result is 100 out of 100 detections.

Download SDK including reference application at:  
[developer.acconeer.com](https://developer.acconeer.com)

