



The Mobile Robot Company

Knowledge Center — Speed Monitoring · 2026-08-04

<https://info.mobilerobot.com/safety-compliance/safety-functions/speed-monitoring>

Speed Monitoring

Speed monitoring and control is a certified J1600 safety function rated **Performance Level c (PL c)**. It supervises how fast the vehicle travels and feeds the speed-dependent behavior of the other safety functions.

How it is built

The function rests on dedicated certified hardware in the [safety architecture](https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/) (https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/):

- a safety-certified driving-speed encoder;
- a safety-certified driving-direction encoder;
- an independent safety controller;
- two safety-certified motor controllers.

Because the direction encoder is part of the certified chain, supervision covers both forward and reverse travel — the J1600's 360-degree protective field supports autonomous driving in both directions.

Why speed is safety-relevant

The J1600's top speed is 5.4 km/h (1.5 m/s / 3.4 mph). Its protective field is speed-dependent: the field changes with travel speed and expands at higher speeds, so the vehicle always monitors a zone matched to its current motion. Reliable speed measurement is what makes that adjustment trustworthy — see [Safety-field adjustment](https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/) (https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/) (PL d).

Speed monitoring also underpins the certified [braking](https://info.mobilerobot.com/safety-compliance/safety-functions/braking/) (https://info.mobilerobot.com/safety-compliance/safety-functions/braking/) function (PL d), which stops the vehicle when a person enters the field or an emergency stop is triggered.

Related pages

- [Safety-field adjustment](https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/) (https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/) — how field size follows speed.
- [Person detection](https://info.mobilerobot.com/safety-compliance/safety-functions/person-detection/) (https://info.mobilerobot.com/safety-compliance/safety-functions/person-detection/) — what happens when someone enters the field.
- [Performance levels](https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) (https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) — all assigned levels in one table.

PRELIMINARY SPECIFICATION

Performance Levels come from the preliminary January 2026 product documentation and are subject to change.