

Porsche Stability Management on the racing circuit

At the heart of the active driving dynamics control systems is Porsche Stability Management (PSM), which delivers a high degree of active driving safety at longitudinal and lateral limits. PSM contains the functions ABS (anti-lock brake system), ASR (anti-slip regulation), MSR (engine drag torque control) and ABD (automatic brake differential), as well as “precharging of the brake system”, and “brake assist”. Precharging the brake system enhances braking readiness, which in turn reduces stopping distances in emergency situations. If the accelerator pedal is released very quickly – as is typically the case prior to an emergency stop – brake fluid is transferred from the PSM hydraulic unit to the wheel brakes before the brake pedal is actuated. This causes the brake pads to press lightly against the brake discs, ensuring that the brake system is optimally prepared for the imminent braking. As a result, the response behaviour of the brake system is significantly improved and stopping distances are reduced.

PSM can be switched off in two stages. In conjunction with the Sport Chrono Package, the system offers an individually switchable mode with the designation PSM Sport, activated via the PSM button located in the centre console. From a functional perspective, “PSM Sport” is very different to the normal mode and allows ambitious drivers to take their Porsche even closer to its limits – on the race track, for example. Compared with “PSM On”, the function enables significantly larger yaw movements around the vertical axis and a higher degree of slip on the drive wheels, making the dynamic performance of the vehicle even more palpable. This eliminates the need to deactivate the PSM fully, even for seasoned sporty drivers. The “PSM Off” mode is activated by pressing and holding the PSM button. This is in keeping with the Porsche philosophy of allowing drivers to deactivate the control system entirely when desired. However, in “PSM Off” and “PSM Sport” mode, powerful braking in the ABS control range re-activates the full stabilising effect of the PSM system, but only until the brake is released again.