

DISCOVER THE NEW MOBILE CRASH PROTECTION SYSTEM IN COMPLIANCE WITH CEN/TS 16786



DUAL PROTECTION IN ONE SYSTEM

The Nissen DEFENDER combines two important functions: the necessary advance warning or barrier deployment for traffic lanes and protection of personnel, road users and service vehicles in the event of a rear-end collision.

The design consists of a warning panel allowing for customised configuration, a crash absorber, and a docking station that can be fitted to any of your service vehicles. The system is folded up out of the way during transportation. Once on site, the service vehicle is moved into the relevant position, the crash absorber is folded down via electrohydraulic action, and the warning panel is activated. Another unique benefit: the crash absorber can already be folded down and up again during transportation. In this way, the transport vehicle comes to a standstill while already being secured and can equally start again. Transport vehicles starting from a weight of 7.5 t are recommended – in Scandinavia, Belgium and the Netherlands as well as in Slovenia, Hungary, Croatia and Austria they are even mandatory.

Proven principle:

the crash absorber consists of a lightweight aluminium cushion incorporating internal honeycombs. In the event of a collision, they absorb the kinetic energy, thereby reducing the risk of injuries and damage to the service vehicle.

Easy upgrade option

The Nissen DEFENDER is based on the Nissen RAMBO II that is time-tested worldwide. These models can be easily brought to the standard technically required by CEN/TS 16786 by means of our tool kit and in only a few steps.









EFFECTIVE DUAL PROTECTION











SAFETY TO A STANDARD

The DEFENDER is tested in compliance with TS 16786:2018.

These are the latest testing specifications for mobile crash protection systems of the European Committee for Standardisation (Comité Européen de Normalisation – CEN). In contrast to the previous standards NCHRP and MASH, which are geared more strongly to conditions in the USA, the new standard carries conviction by the following items:



- The use of dummies so as to be able to assess the impacts of a rear-end collision
- Lighter vehicle weights in line with those that are common in Europe
- · Limitation of the vehicle age to max. 7 years

Tested in all conditions

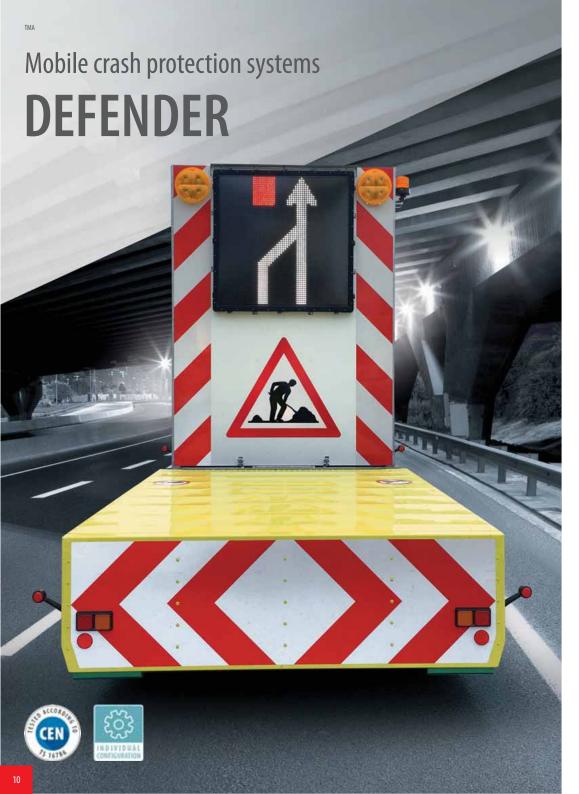
The DEFENDER meets and exceeds the requirements of the four crash tests up to 100 km/h: Head-on crash with vehicles of 900 or 2,000 kg in weight, respectively, and crash at an angle. In all tests, the DEFENDER achieves top scores, maximum absorption and reduced forward rolling of the transport vehicle, thus improving protection of the staff working in front of the vehicle.



Speed category 100, testing matrix

Test	Total mass	Impact - speed	Angle of approach and position of the point of impact
T-TMA100-1	900 Kg	100 km/h	Straight, centre
T-TMA100-2	2.000 Kg	100 km/h	Straight, centre
T-TMA100-3	2.000 Kg	100 km/h	Straight, centre
T-TMA100-4	2.000 Kg	100 km/h	Vehicle front ¼ offset at 10°





CRASH ABSORBER

- Lightweight aluminum cushion with flexible honeycomb structure
- · Corrosion-free and waterproof
- Vehicle lighting
- · Tested according to CEN TS 16786
- Different paintwork in RAL colours possible
- Dimensions: 2310 x 3314 x 707 mm (W x L x H)

DOCKING STATION

- · Robust steel construction
- Easy assembly with safety bolts
- 24 V hydraulic unit
- Dimensions: 2366 x 1397 x 600 mm (W x L x H)

WARNING BOARD

- Warning board according to German standards, 3600 x 2200 mm
- Chevron pattered plate and directional arrow with microprismatic retroreflective foil
- Light arrow system with 2 LED advance warning lights 340 mm Ø (L9H/M according to EN12352) and 25 individually monitored LED warning lights 220 mm Ø (L8H according to EN12352) with automatic brightness adjustment.
- Directional arrow with motor revolution, mechanical emergency adjustment and automatic light arrow adjustment

ACCESSORIES AND OPTIONS

- Optional LED variable message signs instead of the light arrow system and / or the motorized directional arrow
- · Combined cable / radio remote control with touchscreen
- Transport trolley to replace the system
- Rockinger coupling
- · Forklift holder for simplified assembly
- XL battery box for holding up to two batteries and other accessories
- Battery guard to protect the electronics
- · Acoustic signal transmitter for the remote control
- · Control and monitoring system

Technical data

Total length 4466 mm
Total width 2366 mm
Height lowered (Work position): 3664 mm
Height lifted (Transport position): 375 kg
Weight (docking station) 765 kg
Weight (docking station) 765 kg

Mobile crash protection system DEFENDER

Warning board with docking station and crash cushion Defender

Ref. No. 129 741-XXX-YYY



Defender version Finland



Defender in application

PREPARED FOR EVERY EVENTUALIT

The DEFENDER can be configured to suit your exact requirements. You can choose conventional warning panels with light arrows, variable message signs from Nissen's VarioSign LED System, or a combination of both. In addition, designs incorporating sliders or lift functions are also possible. For vehicles with trailers to which the universal coupling cannot be mounted, Nissen offers you practical adapters.

TMA with light arrows

- · Light arrow device
- Chevron patterned plates and directional arrow with microprismatic retro-reflective foil, type RA2C or RA3C
- Luminous arrow system with two LED-TL advance warning beacons (L9H) and 25 separately monitored LED-TL warning beacons (L8H)
- Directional arrow with motor revolution, mechanical emergency adjustment and automatic luminous arrow adjustment



Design Germany



Design Finland

TMA with slider

- · Vertically extending warning panel
- Chevron patterned plates and directional arrow with microprismatic retro-reflective foil, type RA2C or RA3C
- Luminous arrow system with two LED-TL advance warning beacons (L9H) and 25 separately monitored LED-TL warning beacons (L8H)
- Directional arrow with motor revolution, mechanical emergency adjustment and automatic luminous arrow adjustment



TMA with LED variable message signs

- Powder-coated aluminium profile housing (AlMg3)
- Full matrix for displaying freely programmable static or dynamic texts, symbols and animations
- Good recognisability from almost every perspective and even from long distances
- Certified in compliance with EN 12966:2005+A1:2009 CE
- Grid dimension 20 mm
- Optionally classic (4 colours) or RGB (256 colours)
- Premium quality light-emitting diodes with a long service life
- · Continuous brightness adjustment, automatic or manual
- Available in different arrangements and sizes on the warning panel (sign at the top, sign at the bottom, sign at the top and bottom)



MORE FUNCTIONS, MORE ADVANTAGES

Nissen offers you an extensive choice of accessories allowing you to extend the functionality of your mobile crash protection system and customise it to your specific requirements.

Electrical equipment

Battery monitor

Ensure the long-term performance of your mobile crash protection system. The battery monitor that is integrated as a standard feature sends you a warning in advance, before the capacity of your battery is too low for operation. The device also monitors the charging process and protects against overloading. This way, you can effectively prevent unforeseen breakdowns and damage to the electrical system.

Charge booster

The on-board battery of your mobile crash protection system does not get a sufficient charge from the generator of the towing vehicle because after the engine is started, the charging voltage and the charging current are regulated to protect the starter battery. Our charging boosters ensure that the on-board battery is reliably charged, even over short distances. This shows a measurable extension of the service life and improves the failure safety.

Operation

Operating hours meter

The detailed documentation of the use of your mobile crash protection system allows you to detect wear and tear in advance and replace parts like bulbs, batteries or mechanical components before an imminent failure. The operating hours meter also provides you with critical information to make your billing easier.

Interface package XML

This module enables secure data exchange between several devices. It makes it possible to remotely control crash protection systems equipped with the XML interface package – including all functions. In addition, your system can also send data to control systems.

NiBus modem

This digital data interface lets you control and monitor our mobile crash protection systems in compliance with safety standards, regardless of your location. In addition, the NiBus modem can also be used to integrate systems into common construction site management systems.

Equipment

Rockinger coupling

Equip your mobile crash protection system with a robust Rockinger coupling for trailers weighing up to 3.5 tonnes and in

weighing up to 3.5 tonnes and ir this way increase your scope of application.



Height adjustment in transport position

Our mobile Defender crash protection system can be equipped with an additional hydraulic circuit allowing the system to be lowered in the transport position. Ideal for low bridge clearance heights, which are for instance common in Switzerland.

Use the following accessories to customise the DEFENDER to your exact requirements:

1	to your exact requirements:	
	Version for road works head location	
1	Slider version	
	Mounting plate for attaching to the towing vehicle	•
ı	Rockinger coupling	
ı	Transporter for docking station	
2	Fork lift adapter for docking station	
	Battery box XL	•
	Battery monitor	Standard
	Charger 12V 35A	
	Power supply plug	
	Charging connector 12/24V	16.
	Cable drum	
t	LED light module for toll recognition, Switzerland	
	Height adjustment in transport position	
	Preparation, CB warning system	
	CB warning system	
	Preparation, NiBus modem	
	NiBus modem	•
	Monitoring device	
1	XML interface package	•
	Onboard power supply 12V	
ı	Onboard power supply 24V	Standard
ā	Onboard power supply, LED 12/24V	•
ı	Manual control Pro-Remote	Standard
i	Manual control Touch Remote Colour	•
ı	Lead/gel battery (140Ah or 210Ah)*	•
i	Lead/acid battery (180Ah or 230Ah)*	•
ě	Foil for almost any country-specific requirements	•
	Varnishing of the cushions in different RAL colours possible	•
	Switchable flash units and beacons (ECE-R65)	•
	Roll-off container for warning panel	•

*Only in connection with battery box XL



· max. 12 radio connections

storable

· Operation of the most important features via keypad

• Favourite combinations freely programmable via touch screen

Remote Controls

- Standard- and Pro-Remote
- · Universal remote control for secure and easy operating also of complex devices via cable connection
- · Large operating keys
- Illuminated keypad
- · Easily readable large display with additional touch screen function

























Weight Standard-Remote: 480 g Pro-Remote: 700 g

Touch Remote Colour	Ref. No.
Touch Remote Colour radio/cable remote control (bluetooth) with touch screen and illuminated keypad (without cable)	329 236-1
Accessories and Spare parts	Ref. No.
Charging tray for remote control Touch-Remote Colour without cable function, 2 m connection cable	329 238-1
Charging tray for remote control Touch–Remote Colour with cable function, 2 m connection cable with 6 pole sleeve pluq	329 238-11
Charging tray for remote control Touch–Remote Colour without cable function, 2 m connection cable with vehicle plug	329 238-2
Dashboard bracket	329 238-21
Operating time with one battery set	

Lithium-Ferro-Akku, 6000 mAh Operation time: approx. 12 hrs. Charging time batteries: - on charging cradle: approx. 4 hrs. - with active cable connection: approx. 8 hrs.



Connector dashboard holder



Touch Remote in the charging tray



1+

OK 1/0

Charging tray with vehicle plug



6 pole sleeve plug and vehicle plug

Standard- and Pro-Remote	Ref. No.
Pro-Remote II radio/cable remote control - Bluetooth	329 231-12
touchscreen (without cable)	
Standard-Remote cable remote control	329 232-2
touchscreen (without cable)	
Accessories and Spare parts	Ref. No.
Holder and charging cradle for radio remote control Pro-Remote	329 230-1
Holder and charging cradle for radio remote control Pro-Remote	329 230-11
90 — 264 V AC version including adapter useable for EU, US, UK and AU	
Holder and charging cradle for radio remote control Pro-Remote	329 230-12
with 2 pin vehicle plug	
Holder for cable remote control Standard-Remote	329 230-2
Dashboard holder with ball joint arm for remote controls for mouting at holders	329 230-21





Holder and charging cradle



Pro-Remote



Holder and charging cradle with dashboard holder

TOGETHER FOR YOU

Just as our developments convince you through their quality and functionality in use, we consequently ensure that you always feel well advised by Nissen. Our team of experienced and competent specialists will find a solution for all of your concerns.

Whether you ask for help from your contacts in Tönning or on-site through our internationally organized sales department - we are a team and are always there for you. What can we do next for you?



A CALL IS ENOUGH Do you need a larger delivery of safety barriers at short notice? Do you want an offer for a mobile warning trailer or do you have guestions about the versatility of our VarioSign LED systems? Our team in Tönning can be reached by phone and e-mail. We speak your language and handle your concerns as guickly and reliably as possible. And there is always time for a few personal sentences - we look forward to hearing from you!

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Product Management

WE'RE HERE TO SUPPORT YOU

Wherever you need us – the sales specialists in our team will visit you personally at almost every location. Benefit from our tailor-made solutions for individual conditions.





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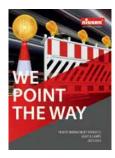
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