

Safety Autonomous Driving Wheel Safety Wheel Drive





Powering the Future of AGV & AMR Mobility: ez-Wheel SWD – The Ultimate Safety Wheel Drive Solution!

IDEC CORPORATION

ez-Wheel ew2a safety wheel drive

- HIGH LEVEL OF INTEGRATION
- BUILT-IN SAFE MOTION CONTROL AND SAFETY ENCODER
- FACILITATES COMPLIANCE WITH ISO 3691-4
- AUTOMATION OF HEAVY DUTY MOBILE PLATFORMS
- CHAINABLE SAFETY AND MULTIPLE SAFETY INPUTS



EW2A SAFETY WHEEL DRIVES

SWD 150

For heavy duty intralogistics automation

SWD 125

For light weight or medium duty intralogistics

EW2A SAFETY DRIVES

SWD Core For multi-axis systems

EW2A KIT AND SETUPS

SWD Starter Kit Development kit for AGVs and AMRs

Typical setups using SWD

For safety critical mobile platforms

SOFTWARE

SWD ez-Config

Configure your drives and wheel drives

SWD Update tool

For firmware updates



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THE SIMPLEST **MOBILE ROBOT SETUP EVER**

SWD TECHNOLOGY DISRUPTS AGVs AND AMRS ARCHITECTURE THANKS TO ITS UNIQUE LEVEL OF INTEGRATION

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- Up to 50% less components
- Simpler and faster assembly

TIME SAVING

- Shorter engineering time
- Simplified certification process

FIRST-CLASS SAFETY

- Suitable for collaborative applications
- ISO 3691-4 compliance

MODULAR ARCHITECTURE

- Freedom of integration
- Flexible and scalable

The ez-Wheel SWD (Safety Wheel Drive) is an innovative all-in-one solution designed for AGV and AMR applications. Combining motor, battery, and controller into a compact, self-contained unit, it simplifies integration, enhances efficiency, and ensures reliable performance. With its robust design and smart features, the SWD is ideal for modern automation needs.

In addition to electric traction functions, SWD motorizations natively embed safety, especially safe motion control and safety encoder which facilitate and accelerate the development of all mobile robots and automated load transfer solutions.

Combined with IDEC's SE2L safety laser scanner, XW emergency stop switches, Human-Machine Interfaces (HMIs)... SWD motorizations address the functional needs of mobile robots, in full compliance with AGV standards and machine safety regulations.





- SAFETY WHEEL DRIVES
- NAVIGATION PC SAFETY LASER
- SCANNER E-STOPS



CONVENTIONAL SOLUTION

- WHEELS GEARBOXES MOTORS SAFETY ENCODERS
 - PLC SAFETY PLC RELAYS MOTOR DRIVERS
 - BATTERY **CIRCUIT BRAKERS**
 - NAVIGATION PC SAFETY LASER SCANNER E-STOPS





Safety Wheel Drives **SWD 150**

For heavy duty intralogistics automation

SWD 150

is a compact and safety compliant solution to automate heavy load transportation in a

SPECIFICATION

- Ø 150 mm
- Shockproof
- IP66 electronic housing
- Configurable products: available software Pages 16 to 19

• safety encoder

battery management

PERFORMANCE

- Up to 2100 kg moved
- 700 kg max. vertical load
- From 0 to 3.7 km/h



• in a heavy-duty cast iron frame • available gear ratio 14 and 25

Refer to the values provided in each orderable part number's datasheet



SWD 150

- √ developed for industrial use
- ✓ IP66 electronic housing
- √ functional safety
- √ wear-resistant tread



PART NUMBER	
EW2A-150HN*A	SWD 150 - Safety Wheel Drive Industria CANopen communication, without batte
EW2A-150HN*B	SWD 150 - Safety Wheel Drive Industrial CANopen communication, without batte

* 14 for 14:1 gear ratio or 25 for 25:1 gear ratio

Available	versions - EW2A-150H N 1 4 A
	N: Without battery 1: With battery*
	1 4 Gear ratio 14 : 14:1 ratio 25 : 25:1 ratio
	A Parking brake A: Without brake B: With brake



Safety Wheel Drives **SWD 125**

For light weight or medium duty intralogistics

SWD 125

designed to address requirements of Mobile AMR's.

SPECIFICATION

- Ø 125 mm
- Shockproof
- IP66 electronic housing
- Configurable products: available software Pages 16 to 19

PERFORMANCE

- Up to 1500 kg moved
- 250 kg max. vertical load
- From 0 to 11 km/h



• available gear ratio 4 and 14



SWD 125



✓ extremely compact footprint

- \checkmark for medium loads at high speed
- ✓ IP66 electronic housing
- √ functional safety



PART NUMBER	
EW2A-125HN*A	SWD 125 - Safety Wheel Drive Industrial
EW2A-125HN*B	SWD 125 - Safety Wheel Drive Industrial

* 04 for 4:1 gear ratio or 14 for 14:1 gear ratio

Refer to the values provided in each orderable part number's datasheet

safety encoder



Safety Drives SWD Core For safe multi-axis movements

SWD CORE

is a safety integrated gearmotor able to lift,

SPECIFICATION

- High torque up to 37 Nm at 100 rpm
- Shockproof IP66 electronic housing
- Configurable products: available software Pages 16 to 19







SWD CORE

DATASHEET

\checkmark for safety critical movements

- \checkmark generic design for wide applications range
- ✓ IP66 electronic housing
- √ functional safety

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PART NUMBER	
EW2A-000N00A	SWD Core - Safety Gear Motor without g
EW2A-000N00B	SWD Core - Safety Gear Motor without g
EW2A-000N*A	SWD Core - Safety Gear Motor x:1 reduc
EW2A-000N*B	SWD Core - Safety Gear Motor x:1 reduc

* Gear ratio 00: 1:1 ratio 04: 4:1 ratio 14: 14:1 ratio 25: 25:1 ratio 50: 50:1 ratio 99: 100:1 ratio

Refer to the values provided in each orderable part number's datasheet.



Available versions - EW2A-000N 0 0 A			
	 Gear ratio 		
	A Parking brake A: Without brake B: With brake		

Designation

gear box - CANopen communication

gear box, with Brake - CANopen communication

ction ratio - CANopen communication

ction ratio and Brake - CANopen communication



SWD STARTER KIT is

a pre-packaged kit that

of your Customized

Mobile Automation

accelerates

GitHub

SWD Starter Kit Development kit for AGVs and AMRs

Typical setups using SWD For safety critical human operated platforms

TYPICAL **SETUP** FOR MANUAL CONTROL **OR REMOTE** CONTROL (\mathbf{i}) Also available with SWD 125 Safety wheel drives SWD 125 or SWD 150 without battery version Page 6 2 Lithium battery EW9Z-1BEXT20VL 3 Central interconnection box EW9Z-2HUB1 4 10 Amp Lithium charger Mascot10A-Li 5 Emergency stop XW1E ⁶ Joystick XF Series CANopen







> Ticket management

- > Open source ROS packages
- > Documentation > ROS community
- > Configuration API for SWD

HROS

> Differential driver for SWD products in ROS1 & ROS2 > Pre-installed ROS environment









Safety sensors

- Wireless control and receiver
- Cables

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Typical setups using SWD

For safety critical mobile platforms







Also available with SWD 125 and external battery



EXAMPLE OF RECOMMENDED COMPONENTS **NOT SUPPLIED**

- Charging system
- Navigation system
- Wireless connectivity
 Cables





SWD ez-Config for Safety Wheel Drives products Configure your drives and wheel drives



EZ-CONFIG is a tool

designed to simplify and optimize the configuration of the SWD drives and wheel drives. It is elaborated to make the most of SWD products in their dedicated environments.

BENEFITS

- User-friendly interface: intuitive operation, easy access to settings and clear explanations for each function and option
- Ensures consistent configuration for SWD products
- Reduces commissioning time for equipped machines
- Multi-OS tool: ensures optimal compatibility across platforms

PRODUCT COMPATIBILITY

- SWD 150 Page 6
- SWD 125 Page 8
- SWD Core Page 10



MAIN FEATURES AND CONFIGURATION OPTIONS

- Device Configuration:
- Setup gearbox

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- Polarity
- Power supply output
- CANopen Configuration:

Configure PDO

- SRDO
- Safety words

TECHNICAL SPECIFICATIONS



English interface OS operating system: Windows, Linux







• PID

Drive Configuration: • Min and Max speed Ramps (Accel / Decel, Quick Stop)

Safety Functions:

Customize the Safe Motion configuration for enhanced safety



Minimum System **Requirements:** • x86 64-bit system Internet connection



Additional Requirements: • Linux Ubuntu system USB-CAN probe connected to your laptop and the SWD to be configured

SWD Update tool for Safety Wheel Drives products





UPDATE TOOL

is an intuitive tool dedicated to maintenance purposes. the firmware versions of SWD products.

BENEFITS

- Upgrade or downgrade firmware versions
- Compatibility guaranteed by an automatic check (before the update)
- Only compliant firmware can be uploaded in your SWD products

PRODUCT COMPATIBILITY

- SWD 150 Page 6
- SWD 125 Page 8
- SWD Core Page 10

GRAPHICAL USER INTERFACE



TECHNICAL SPECIFICATIONS







OS operating system: Windows, Linux



1 Menu 2 Product list

3 Main window

Minimum System **Requirements:** • x86 64-bit system Internet connection

MAIN	I FEATURES	
1 Auto of th • SV • SV	onomous recognition ne products VD 150 VD 125 VD Core	2 Information • Serial num • Electronic • Mechanica • Firmware • Device sta
		SWD [®] Upo
	Devices Refresh	Device Information
	21252SC002A1	Status 2
*	1	Serial Number Hardware Id Product Id Firmware Reference Firmware Version Firmware Status Last update Account Date Firmware update
		Version 4
		2.0.2 ~

4 Firmware selection (.ezb) Select among all compliant versions

SOFTWARE AVAILABLE FOR DOWNLOAD

about the device

- nber board version al characteristics version
- atus

ez

³ Information about the user and the last update

• Email account • Date of the last firmware update

_ _ ×

date Tool v1.0.6

21252SC002A1 777F ezSWDcore.14/C SWD® Core Firmware 2.0.2 Boot succeeded

3 XXXXX Thu Oct 10 2024 12:19:13

⁵ Firmware Update status • Progression bar when updating a new firmware

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