



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

ORIZATION

MATION

ATIVE

OL AND SAFETY ENCODER

H ISO 3691-4

MOBILE PLATFORMS

IPLE 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

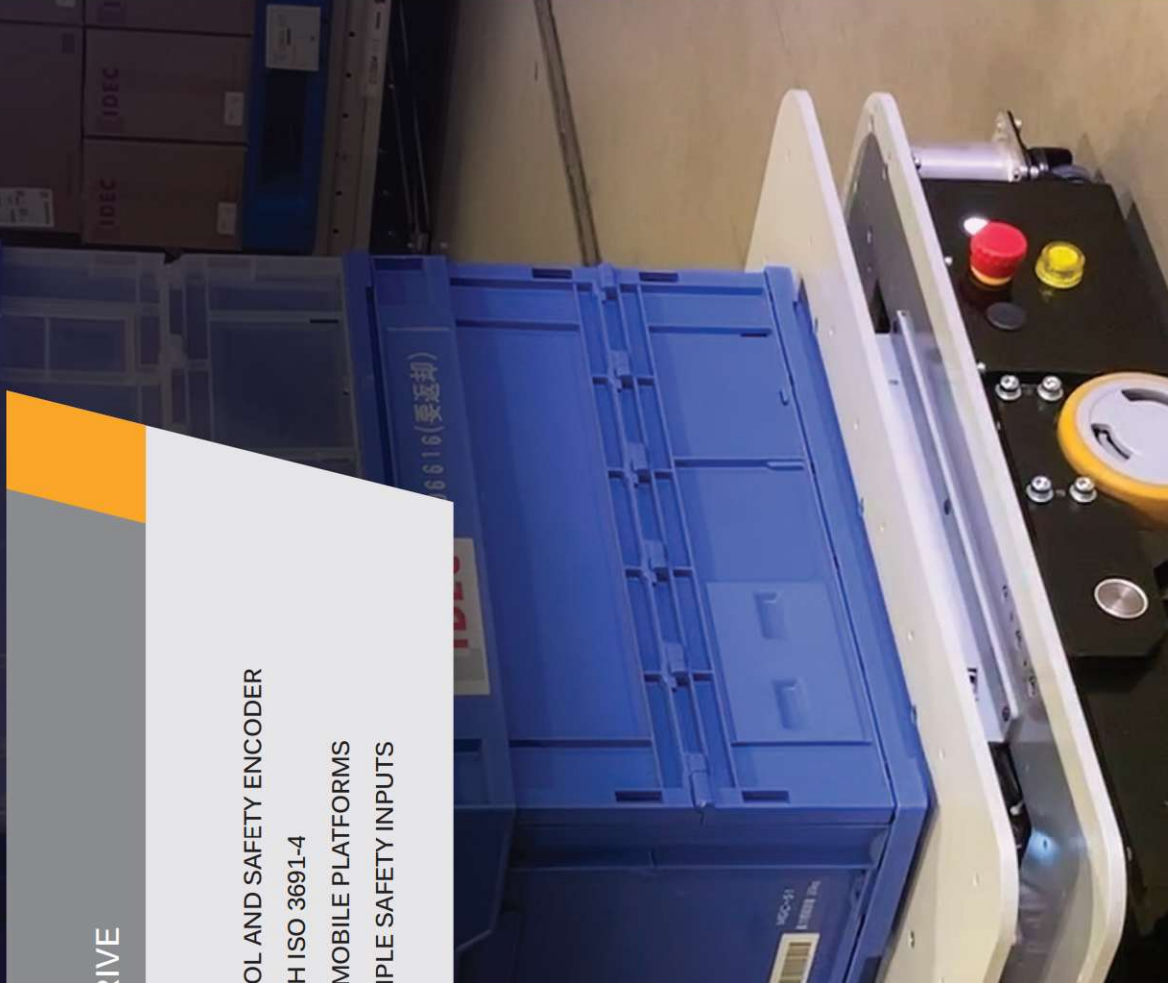
SOFTWARE

SWD ez-Config

Configure your drives and wheel drives

SWD Update tool

For firmware updates



ROBOT DRIVER

TO ITS UNIQUE

- 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

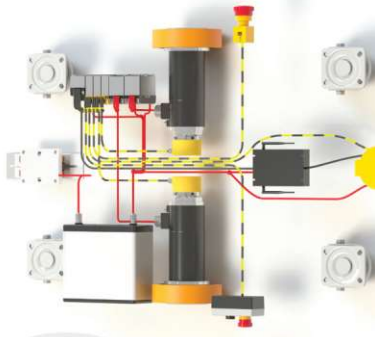


MODULAR ARCHITECTURE

- Freedom of integration
- Flexible and scalable



CONVENTIONAL SOLUTION



- WHEELS
- GEARBOXES
- MOTORS
- SAFETY ENCODERS
- PLC
- SAFETY PLC
- RELAYS
- MOTOR DRIVERS
- BATTERY
- CIRCUIT BRAKERS
- NAVIGATION PC

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

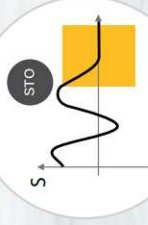
air-in-one solution designed for AGV and AMR applications. Combining motor, battery, and controller into a compact, self-contained unit, it simplifies integration, enhances efficiency, and ensures reliable performance. With its robust design and smart features, the SWD is ideal for modern automation 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.

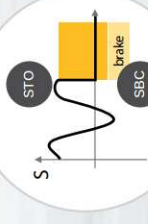
STO

SAFE MOTOR DISCONNECTION
when a stop is requested
STO up to SIL3/PLd



SBC

SAFE BRAKE CONTROL
to ensure a lockout
SBC or SBU (unlock)
up to SIL2/PLd



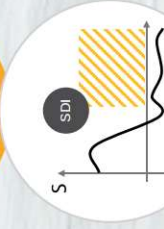
SSI

SAFE STOP MONITORING
to ensure a controlled stop
SSI up to SIL2/PLd



SDI

SAFE DIRECTION CONTROL
in case of collision risk
SDI up to SIL2/PLd



SLS

SAFELY LIMITED SPEED



alogistics automation

SPECIFICATION

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

PERFORMANCE

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

SWD 150



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

Available version

N M

N: W

1: W

1 4

14: 1

25: 2

A P

A: W

B: W



MOTOR
• high torque
• compact
• DC PM

BATTERY

- Li-ion high power
- 0-100 Wh - 24 VDC

INTERFACES

- connectors: I/O, 24 VDC, CAN, USB, Ethernet (reserved for future use), brake
- LEDs: Status, CAN, Ethernet (reserved for future use)



ELECTRONICS

MAX SPEED

3.7 km/h
1 m/s

2.1 km/h
0.6 m/s

RATIO 14
EW2A-150HN14

RATIO 25
EW2A-150HN25

1500 kg 2100 kg

PART NUMBER

EW2A-150HN* A

Designation

SWD 150 - Safety Wheel Drive Industrial rubber, Heavy Duty, x:1 reduction
CANopen communication, without battery

movements

SPECIFICATION

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

INTERFACES

Connectors: I/O, 24 VDC, CAN, USB, Ethernet (reserved for future use), brake ethernet

- LEDs: Status, CAN, Ethernet (reserved for future use)

MOTOR

- high torque
- ultra-compact
- BLDC PM



SWD CORE



- ✓ for safety critical movements
- ✓ generic design for wide applications range
- ✓ IP66 electronic housing
- ✓ functional safety

Available versions



0
00
04
14
25
50
99

A
A:
B:

PART NUMBER	Designation
EW2A-000N00A	SWD Core - Safety Gear Motor without gear box - CANopen communication
EW2A-000N00B	SWD Core - Safety Gear Motor without gear box, with Brake - CANopen communication
EW2A-000N*A	SWD Core - Safety Gear Motor x:1 reduction ratio - CANopen communication
EW2A-000N*B	SWD Core - Safety Gear Motor x:1 reduction ratio and Brake - CANopen communication

* 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

1 SWD Starter Kit EW2A-SK000A

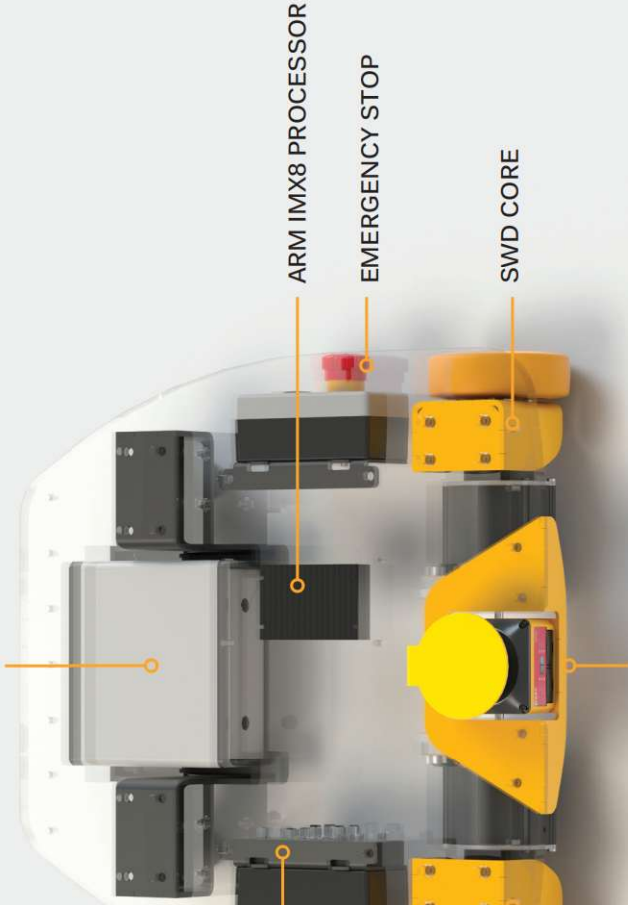


...ent
...packages
...for SWD



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

NI-MH BATTERY



TYPICAL SETUP FOR MANUAL CONTROL OR REMOTE CONTROL

1



Also available with SWD 125

- 1 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

2

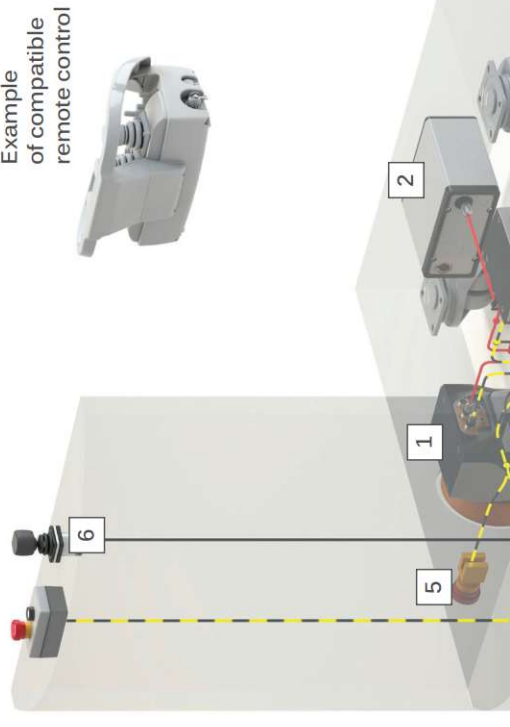


4



6

Example of compatible remote control



2

1

5

6

TYPICAL SETUP FOR AMR WITH NAVIGATION



1

i Also available with SWD 125 and external



- 1 Safety wheel drives SWD 150 with integrated battery
Page 6
- 2 Emergency stop XW1E51
- 3 Safety Laser Scanners SE2L



2



3



5



7



8

EXAMPLE OF RECOMMENDED COMPONENTS NOT SUPPLIED

- Charging system
- PC or PLC



1

i Also available with SWD 125

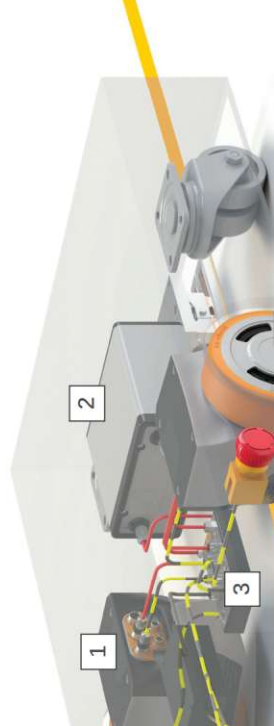
SWD 150 without battery version



4



6



1

2

3

Wheel Drives products



es and wheel drives

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
 - Polarity
 - Power supply output
- **Drive Configuration:**
 - Min and Max speed
 - Ramps (Accel / Decel, Quick Stop)
 - PID
- **CANopen Configuration:**
 - Configure PDO
 - SRDO
 - Safety words
- **Safety Functions:**
 - Customize the Safe Motion configuration

TECHNICAL SPECIFICATIONS

EN



English interface

OS operating system:
Windows, Linux

Minimum System Requirements:

- x86 64-bit system
- Internet connection

Rotation direction

Invert polarity



Wheel Diameter

mm



250

=

13.75

14 max.

14 max.

Feel Drives products are

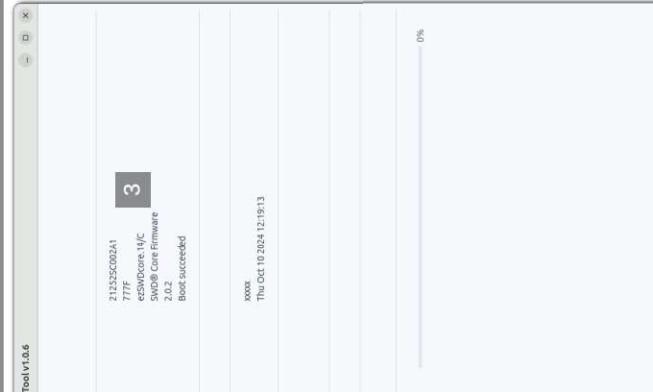


BENEFITS

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

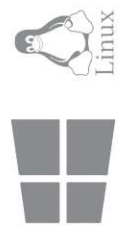
PRODUCT COMPATIBILITY

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



- 1 Menu
- 2 Product list
- 3 Main window

DNS



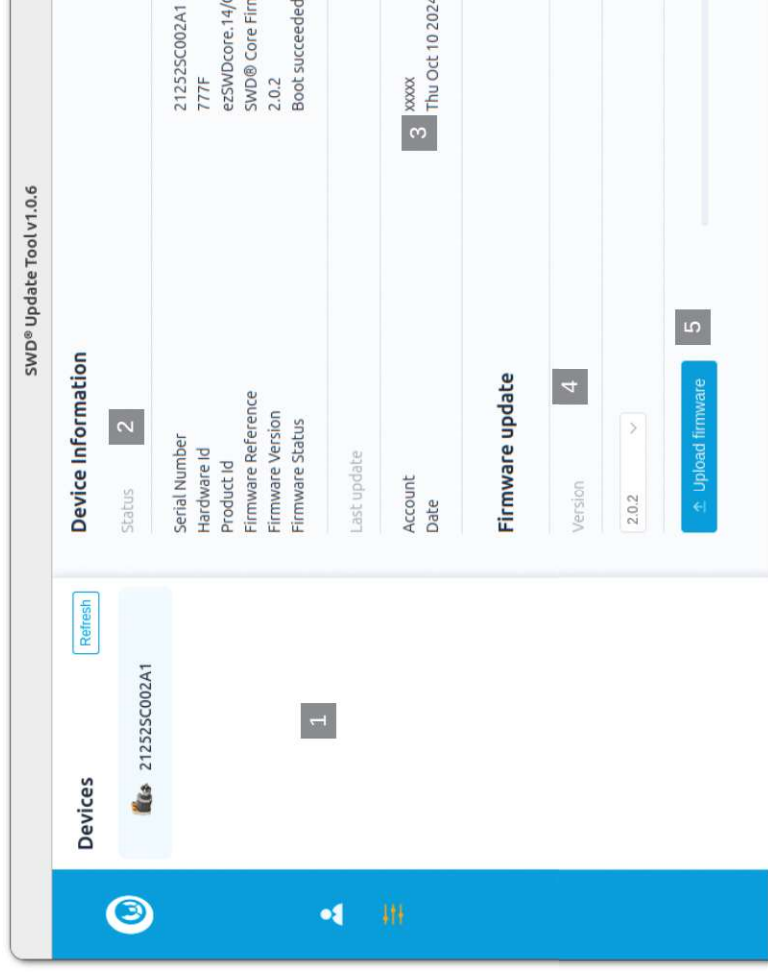
MAIN FEATURES

1 Autonomous recognition of the products

- SWD 150
- SWD 125
- SWD Core

2 Information about the device

- Serial number
- Electronic board version
- Mechanical characteristics
- Firmware version
- Device status



4 Firmware selection (-ezb)

- Select among all compliant versions

5 Firmware Update

- Progression bar

IDEC CORPORATION

USA Office 1175 Elko Drive Sunnyvale, CA 94089

 <https://us.idec.com>

Japan Head Office
EMEA APEM SAS

Singapore IDEC Izumi Asia Pte. Ltd.
Thailand IDEC Asia (Thailand) Co., Ltd.
India IDEC Controls India Private Ltd.

China IDEC (Shanghai) Corporation
IDEC Izumi (H.K.) Co., Ltd.
Taiwan IDEC Taiwan Corporation

Japan IDEC Corporation

Specifications and other descriptions in this brochure are subject to change without notice.
Information in this brochure is current as of March, 2025.
2025 IDEC Corporation, All Rights Reserved.
EV1179-0-US-ezWheelSWD-0-USsize 2k

