



- EN** The Original Instructions can be found at:
- DE** Die Originalanleitung finden Sie unter:
- FR** Les instructions originales peuvent être trouvées à:
- ES** Las instrucciones originales se pueden encontrar en:
- IT** Le istruzioni originali sono disponibili all'indirizzo:
www.idemsafety.com

Description

UGB-NET-PS is an access gate box which combines solenoid locking, RFID coded sensor, and integrated machine control functions in a robust heavy-duty housing.

Integrated safety protocols for use with industry recognised Industrial Ethernet network protocols.

Highly customisable, up to 4 illuminated pilot devices (Push buttons, lamps, selector switches and e-stops) to be selected for the device lid.

Cat. 4/PL e Guard interlocking, lock monitoring and E-Stop, approved by cULus and TUV to the latest international safety standards.

All external mounting holes and pluggable connectors make it quick and easy to install. No need to remove the lid during installation.

Features

- Integrated PROFINET with PROFIsafe.
- Robust die-cast or stainless steel 316 housing materials.
- Device lid customisable with selection of pilot devices.
- Cat. 4/PL e Guard interlocking, lock monitoring and E-Stop.
- Individual RFID actuator coding.
- Actuator holding force up to 3000N.
- Handles, rear release, and mounting plate accessories.
- Simple and quick installation.

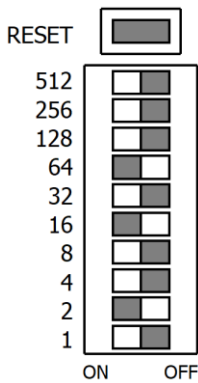
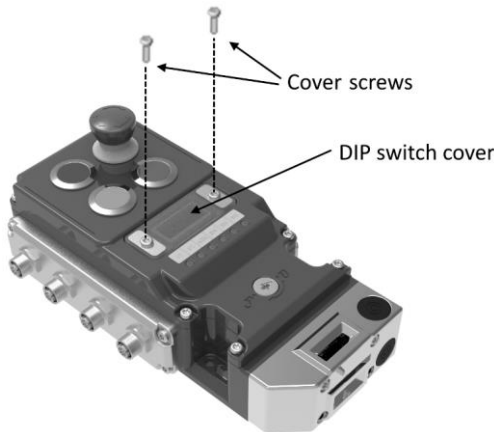
Technical Specifications	
Safety	
Standards	ISO 13849-1, IEC 62061, IEC 61508, IEC 60947-5-3, ISO 14119
Safety functions	Guard interlocking Complies with the requirements of IEC 60947-5-3. Classified as a type 4 device with high coding acc. to ISO 14119.
	Guard locking With lock monitoring for person and process protection.
	Emergency stop
Certifications	CE, TUV, cULus
Safety Data	
Category	4
Performance Level	e
MTTFd	High
DC	99%
Mission Time	20 years
PFHd Guard Locking, Lock Monitoring	7.3×10^{-10} (0.7 % of SIL 3)
PFHd Emergency Stop	2.3×10^{-9} (2.3 % of SIL 3)
Power Supply	
Operating voltage	24 V DC +10%/-15% SELV/PELV acc. to IEC 61131-2 UL – Class 2 Power Supply Functional Earth must be connected.
Current – Normal Operation	200 mA
Current – Peak	650 mA
Device Characteristics	
Actuator coding level	Type 4 (RFID), High
Assured operating (Sao)	10mm
Assured release (Sar)	20mm
Assured locking distance	5mm
Response time (E-Stop)	36ms max. (E-Stop -> field bus)
Response time (Guard/Lock)	36ms max. (Guard/Lock -> field bus)
Mechanical Data	
Maximum holding force (F1)	3000 N
Rated holding force (Fzh)	2307 N
Environmental Data	
Storage Temperature	-20°C to 85°C
Operating temperature	-5°C to 40°C
Enclosure Protection	IP 65
Maximum operating altitude	2000m



Configuration Specific Datasheet

RFID Guard Interlock with Integrated PROFINET with PROFIsafe

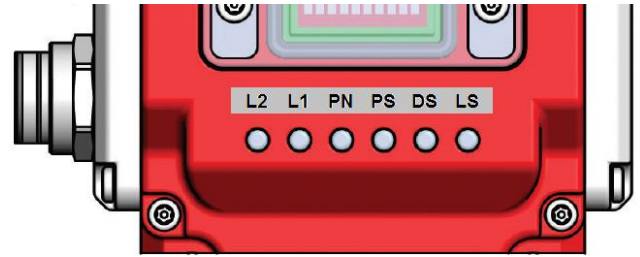
DIP Switch



The example given in the image above shows only switches 2, 16 and 64 set to the 'ON' position. When adding these numbers up the resulting F-Address is 82.

Press and hold the reset button to reset the device (equivalent reset to power cycle)

Indication

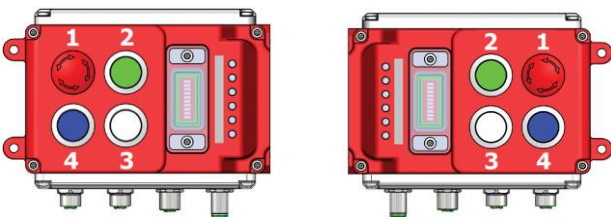


LED	Function	Colour
LS	Locking switch state	Red/Green
DS	Device state	Red/Green
PS	PROFIsafe	Red/Green
PN	PROFINET/Network	Red/Green
L1	Link 1	Amber/Green
L2	Link 2	Amber/Green

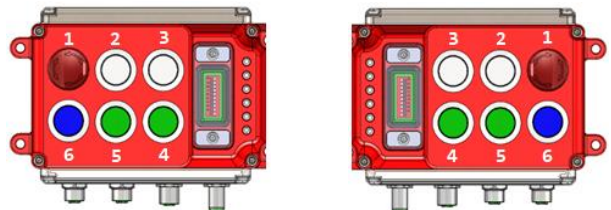
LED	LED State	Comment
LS	Off	Locking switch inactive, waiting for data connection
	Green	Guard is closed and locked
	Green flash	Guard is closed and unlocked
	Red	Internal fault detected, reset required
	Red flash	Missing or incorrect RFID tag
	Red double flash	Guard forced open, reset required
DS	Red/Green alternate	Reset in progress
	Green	Device running
	Red	Internal fault detected
PS	Green	PROFIsafe OK
	Green Flash	PROFIsafe Integration required
	Red	Safe input fault detected; reset qualifier bits
PN	Off	Not initialised
	Green	Normal operation
	Green flash 1Hz	Locate PROFINET device
	Green 1 flash	Diagnostic event present
	Red	Exception
	Red 1 flash	Configuration error
	Red 2 flashes	IP address not set
	Red 3 flashes	Station name not set
Red 4 flashes	Internal error	
L1 L2	Off	No Ethernet link detected
	Amber	Ethernet link detected
	Amber flash	Ethernet data transfer

Lid Device Positions

4-Way



6-Way



Right

Left



Data Registers – Non-Safe I/O									
BITS -		0	1	2	3	4	5	6	7
INPUTS	BYTE 0	LID DEVICE 1 STATE	LID DEVICE 2 STATE	LID DEVICE 3 STATE	LID DEVICE 4 STATE	LID DEVICE 5 STATE	LID DEVICE 6 STATE	--	--
	BYTE 1	GUARD SWITCH OPEN	--	--	--	--	--	--	--
	BYTE 2	GUARD SWITCH UNLOCKED	--	--	--	--	--	--	--
OUTPUTS	BYTE 0	LID LAMP 1 ENABLE	LID LAMP 2 ENABLE	LID LAMP 3 ENABLE	LID LAMP 4 ENABLE	LID LAMP 5 ENABLE	LID LAMP 6 ENABLE	--	--
	BYTE 1	GUARD SWITCH SOL ENABLE	--	--	--	--	--	--	--
	BYTE 2	GUARD SWITCH RESET	--	--	--	--	--	--	--

Data Registers – Safe I/O									
BITS -		0	1	2	3	4	5	6	7
INPUTS	BYTE 0	GUARD CH1	GUARD CH2	E-STOP CH1	E-STOP CH2	--	--	--	--
	BYTE 1	GUARD QUALIFIER CH1	GUARD QUALIFIER CH2	E-STOP QUALIFIER CH1	E-STOP QUALIFIER CH2	--	--	--	--
	BYTE 2	--							
OUTPUTS	BYTE 0	--							
	BYTE 1	GUARD RESET CH1	GUARD RESET CH2	E-STOP RESET CH1	E-STOP RESET CH2	--	--	--	--
	BYTE 2	--							

Data Register – Descriptions

E-Stop and LID DEVICE 1 STATE

If the E-Stop is fitted 'LID DEVICE 1 STATE' is inactive.

The E-Stop state is signalled only in the Safe IO bytes.

Guard Switch Faults and Reset

If a fault in the guard unlock/opening sequence is detected the guard interlock will require resetting.

The detected fault will be signalled by 'GUARD SWITCH OPEN' bit set and 'GUARD SWITCH UNLOCKED' bit clear. Indication will be shown on the device with a RED double flash (pause, RED, RED) of the 'LS' LED.

To reset the fault, set then clear the 'GUARD SWITCH RESET' bit.

Safety Qualifier Bits

The safety qualifier bits (Safe IO, Inputs, Byte 1) should be used in conjunction with the safety state bits (Safe IO, Inputs, Byte 0). The safety state bits are only valid safety signals when the qualifier bits are high.

If the internal electronics detect a fault relating to the safety states, the qualifier bits are set low. To re-enable the qualifier bits the corresponding safety reset bits should be set high (Safe IO, Outputs, Byte 2). Re-check the operation of the safety functions before continuing normal operation.



Configuration Specific Datasheet

RFID Guard Interlock with Integrated PROFINET with PROFIsafe

Connection Parameters



INFORMATION

- The device GSDML file can be found via the UGB-NET product page of the IDEM website www.idemsafety.com/products or alternatively please contact technical@idemsafety.com

Troubleshooting

Actuator Replacement/Teach in

With the UGB-NET is powered and connected to the network:

1. Insert the new or replacement actuator into the head of the switch.
2. Set, then clear standard IO output Byte 1, Bit 1. ('GUARD SWITCH RESET').
3. The 'LS' LED flashes green/red while the guard resets.
4. The 'LS' LED will repeat a red double flash once reset.
5. Repeat steps 2 and 3 until the 'LS' LED is green after reset.
6. The new or replacement actuator is now paired.

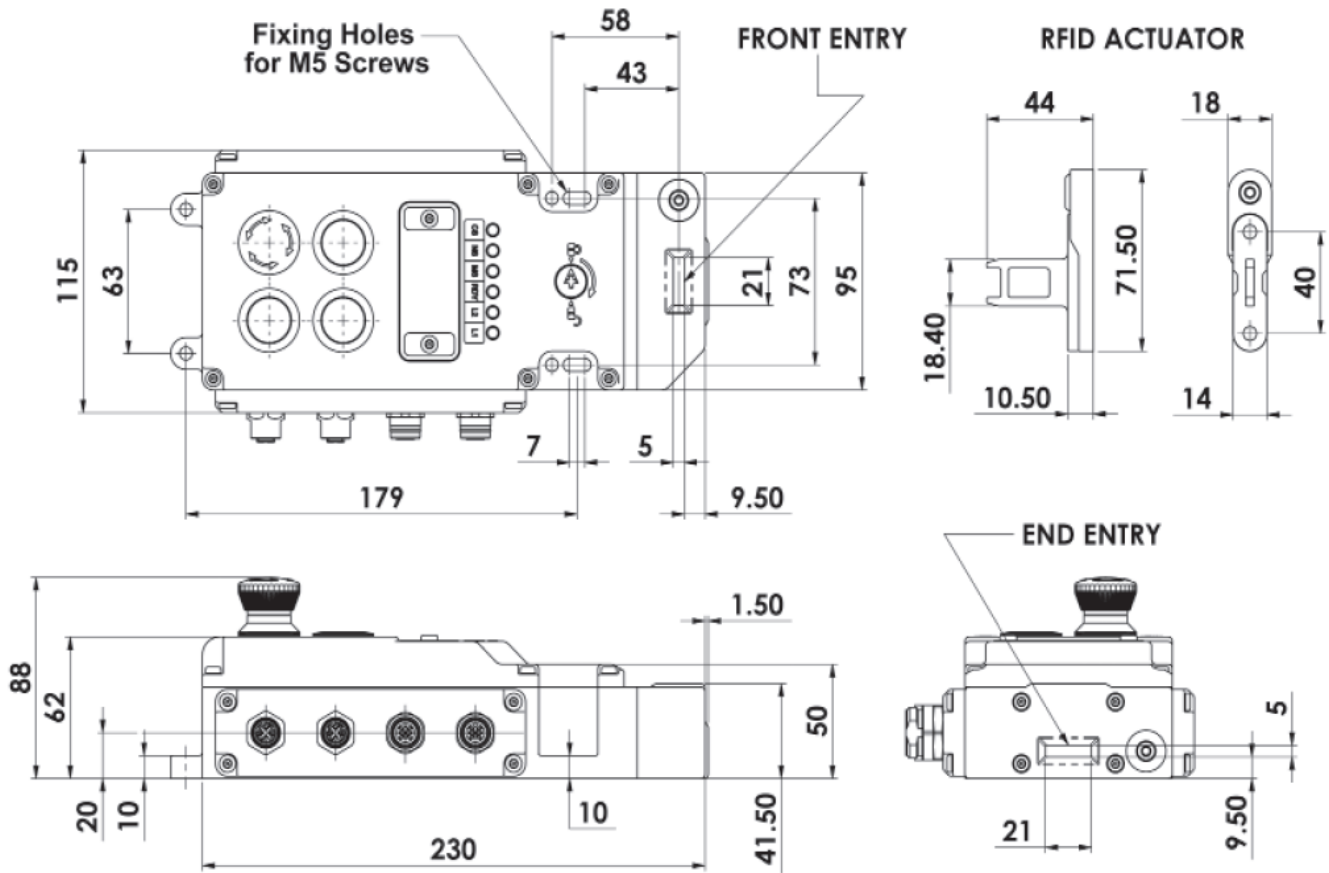
Ensure correct operation before resuming normal operation.

Data and Power Connectors

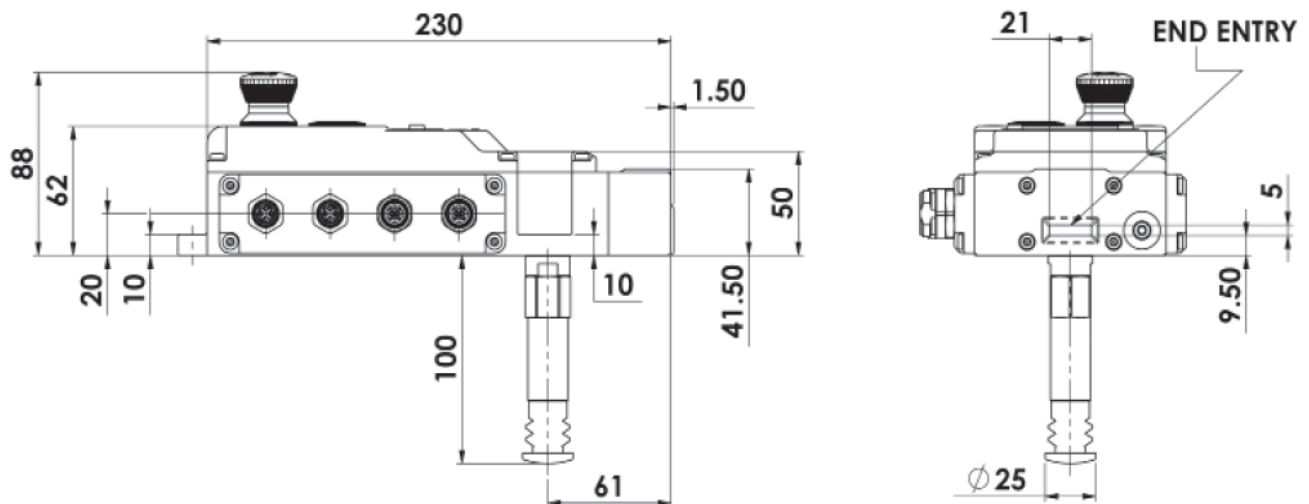
Link 1		Link 2		Power		Power	
Female D-Code M12		Female D-Code M12		Female 7/8"		Male 7/8"	
1	TX+	1	TX+	1	0V DC	1	0V DC
2	RX+	2	RX+	2	0V DC	2	0V DC
3	TX-	3	TX-	3	Earth	3	Earth
4	RX-	4	RX-	4	+24V DC	4	+24V DC
-	-	-	-	5	+24V DC	5	+24V DC
				Pins 1 and 2 internally connected. Pins 4 and 5 internally connected.			
	INFORMATION When multiple devices are used in a daisy-chain arrangement the power bus may be forwarded via the UGB-NET device. Please see technical specification and ensure the total current through each device does not exceed the specified maximum current.						
	INFORMATION Not all connections are required for all applications, the minimum requirement to operate the device is one data connection and one power connection. All 4 ports are utilised when the UGB-NET is used as a 'daisy chain' configuration. Unused power and data ports must be sealed using a protective cover with minimum IP65 rating.						



UGB-NET Outline Dimensions



UGB-NET with Rear Release



Configuration Specific Datasheet

RFID Guard Interlock with Integrated PROFINET with PROFIsafe

UGB-NET Front and Rear Rotary Handle Dimensions

