

Safety and process lock

Knox



Knox - Double safety lock as specified in PL e/Cat. 4

Knox is a double lock that complies with the highest safety level (two lock cylinders with monitored positions) that can be used both as a safety and process lock. The locking function is electrically controlled and is bi-stable, i.e. it retains its position (unlocked/locked) in the event of a power failure. Dual signal for unlocking is safe at both short-circuits and cable breaks.

The handles operate as they would on a normal door but the exterior handle also have a reset function, why a separate reset button is not necessary and the interior handle that can be used for emergency opening also in locked state. The design and durability of the lock mean that it is ideal for harsh environments as the sensors are non-contact and the lock is manufactured of stainless steel. Knox is available in a number of adaptations such as left-hung door, right-hung door, inward and outward opening, with manual unlocking and for sliding door.

Approvals:



Application:

- Safe locking of door to a cell/line with long stopping time.
- Prevents unintentional interrupts of processes

Features:

- Double locking function as specified in PL e/Cat.4 (EN ISO 13849-1)
- Withstands harsh environments
- Status information with LEDs on the lock and at cable connection.
- Controlled in locked and unlocked positions - position power failure.
- Electronic connection only on the door frame.
- Robust design



Knox is easy to assemble, adjust and dismantle in and out of the T-slot of the Quick-Guard fencing system.

Knox in 4 different states



Open



Emergency opened



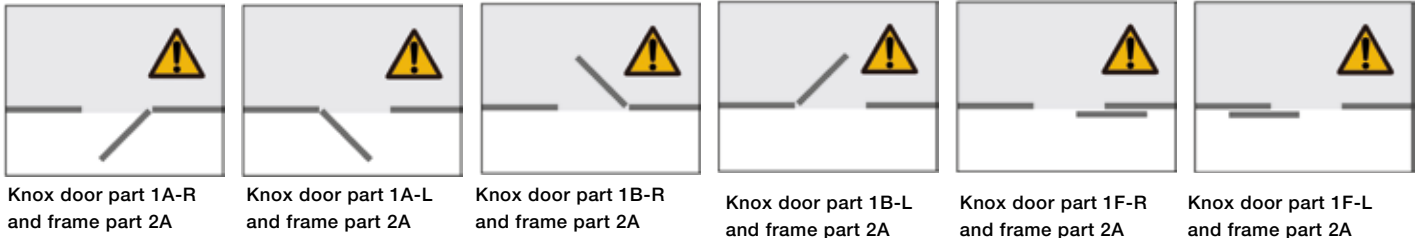
Reset, openable



Operational mode locked and reset
(emergency opening only)

Models and ordering data

Door part	Right	Left
Outward opening without manual unlocking	Knox 1A-R v2 2TLA020105R5000	Knox 1A-L v2 2TLA020105R5100
Outward opening with manual unlocking	Knox 1AX-R v2 2TLA020105R5800	Knox 1AX-L v2 2TLA020105R5900
Inward opening without manual unlocking	Knox 1B-R v2 2TLA020105R5200	Knox 1B-L v2 2TLA020105R5300
Inward opening with manual unlocking	Knox 1BX-R v2 2TLA020105R6100	Knox 1BX-L v2 2TLA020105R6300
Sliding door without manual unlocking	Knox 1F-R v2 2TLA020105R6400	Knox 1F-L v2 2TLA020105R6500
Sliding door with manual unlocking	Knox 1FX-R v2 2TLA020105R6400	Knox 1FX-L v2 2TLA020105R6500
Frame part		
Knox safety lock	Knox 2A v2 2TLA020105R2200	
Knox process lock	Knox 2X v2 2TLA020105R2300	
Accessories		
PC plate for Knox on mesh door	2TLA020106R0000	When mounting Knox on door with mesh the accessory PC plate for Knox is recommended. This is to avoid emergency opening from the outside.
Escutcheon plate for Knox (without emergency release handle)	2TLA020106R0600	When mounting Knox on a low door it is recommended to replace emergency release handle to prevent opening from the outside by reaching over.

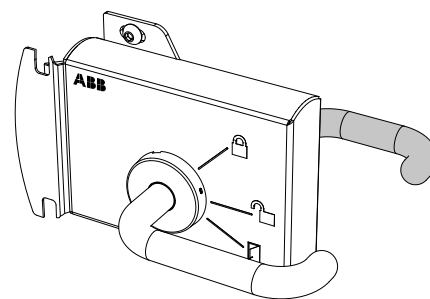
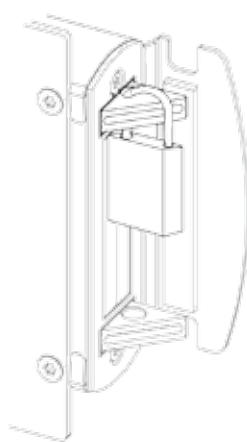


Maintenance mode

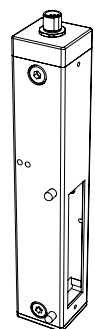
If any work is to be carried out inside the hazardous area, a padlock can be put in place in any of the two locking bolts to prevent the door from locking. This can also act as an indication of presence within the hazardous area (only helpful if operators are informed of the use of padlocks).

NOTE! The use of padlocks is not a part of the safety function and only serves as an additional measure to reduce the risk of entrapment.

NOTE! Cable outlet on frame part must be mounted upwards.



Door part Knox1



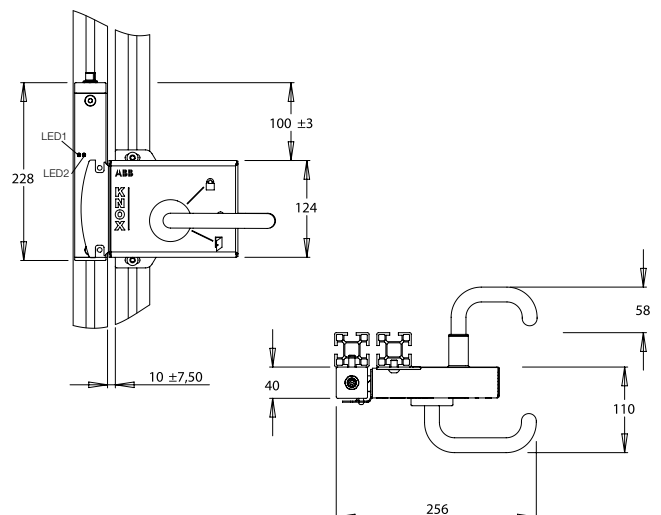
Frame part Knox 2

Technical data – Knox

Level of safety	
EN ISO 13849-1	PL e/Cat. 4
PFH _d	4.50×10 ⁻⁹
Lock function	S/M - unlocked and locked with voltage.
Operating voltage	24 VDC +/- 10%
Operating temperatur	+5°C...+55°C
Power consumption	
Electronics	70 mA (in locked position)
Lock/lock inverse	135 mA (when locking/unlocking)
Total max	Knox 2A 160mA, Knox 2x 165mA
Information output	Max. 10 mA
Insulation class	IP65
Holding strength	
Unlocked	5000 N (10,000 N ultimate breaking strength)
Locked	5000 N (10,000 N ultimate breaking strength)
Connection	Male plug M12, 8-pole
Connections Knox 2A	
Function	8-pole Colour
Dynamic input signal	1 (White)
+24 VDC	2 (Brown)
Lock	3 (Green)
Lock inverse	4 (Yellow)
Information Locked	5 (Grey)
Dynamic output signal	6 (Pink)
0 VDC	7 (Blue)
Information reset	8 (Red)
Connections Knox 2X	
Function	5-pole Colour
+24 VDC	1 (Brown)
Dynamic signal input	2 (White)
0 VDC	3 (Blue)
Dynamic signal output	4 (Black)
Lock	5 (Grey)
Warning	
Knox locks mechanically. Forcing the lock may damage Knox permanently.	
When mounting Knox on door with mesh the accessory PC plate for Knox is recommended. This is to prevent emergency opening from the outside.	
When mounting Knox on a low door it is recommended to replace emergency release handle with the accessory Escutcheon plate for Knox to prevent opening from the outside by reaching over.	
Conformity	2006/42/EG EN ISO 12100-1/2:2003, EN ISO 13849-1:2008, EN 62061:2005, EN 1088

LED indicator – Knox

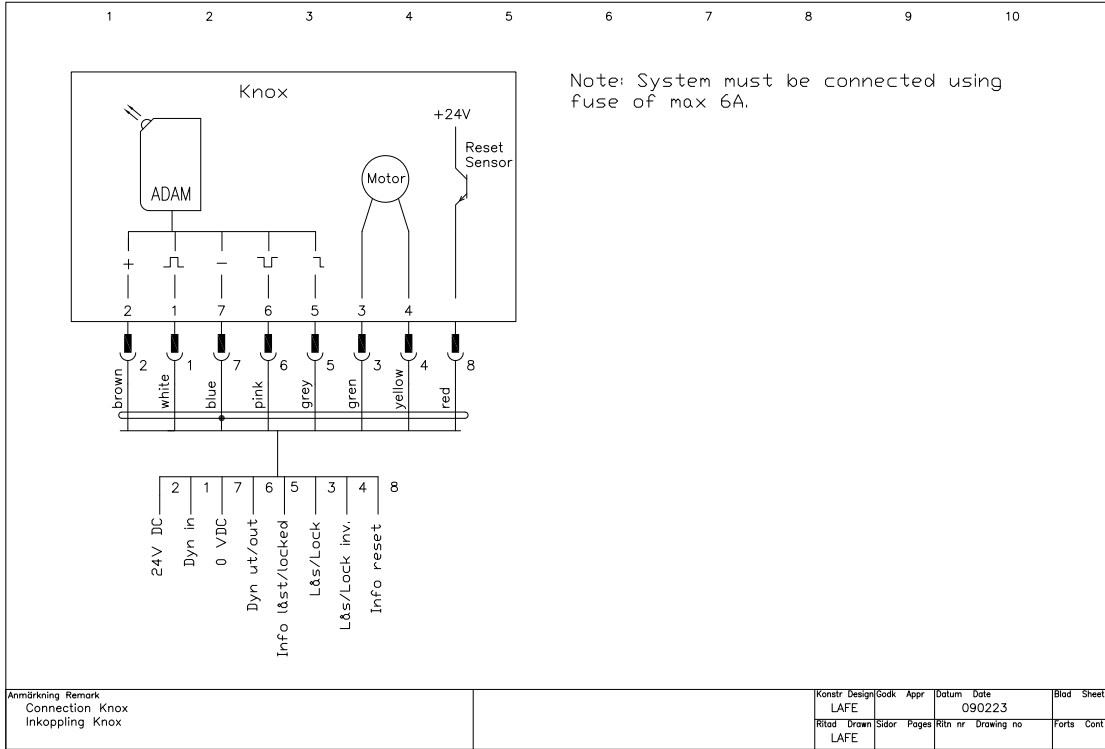
LED indicator	
<div style="display: flex; gap: 10px;"> ■ =Red ■ =Green =Paus </div>	Function
LED 1 <div style="display: flex; gap: 5px;"> </div>	Locked (and reset) Locked, no dynamic signal in
<div style="display: flex; gap: 5px;"> </div>	Unlocked
LED 2 <div style="display: flex; gap: 5px;"> </div>	Reset Not reset
Alarm LED 2 <div style="display: flex; gap: 5px;"> </div>	Dirt indicator reset sensor
<div style="display: flex; gap: 5px;"> </div>	Reset Not reset



Knox

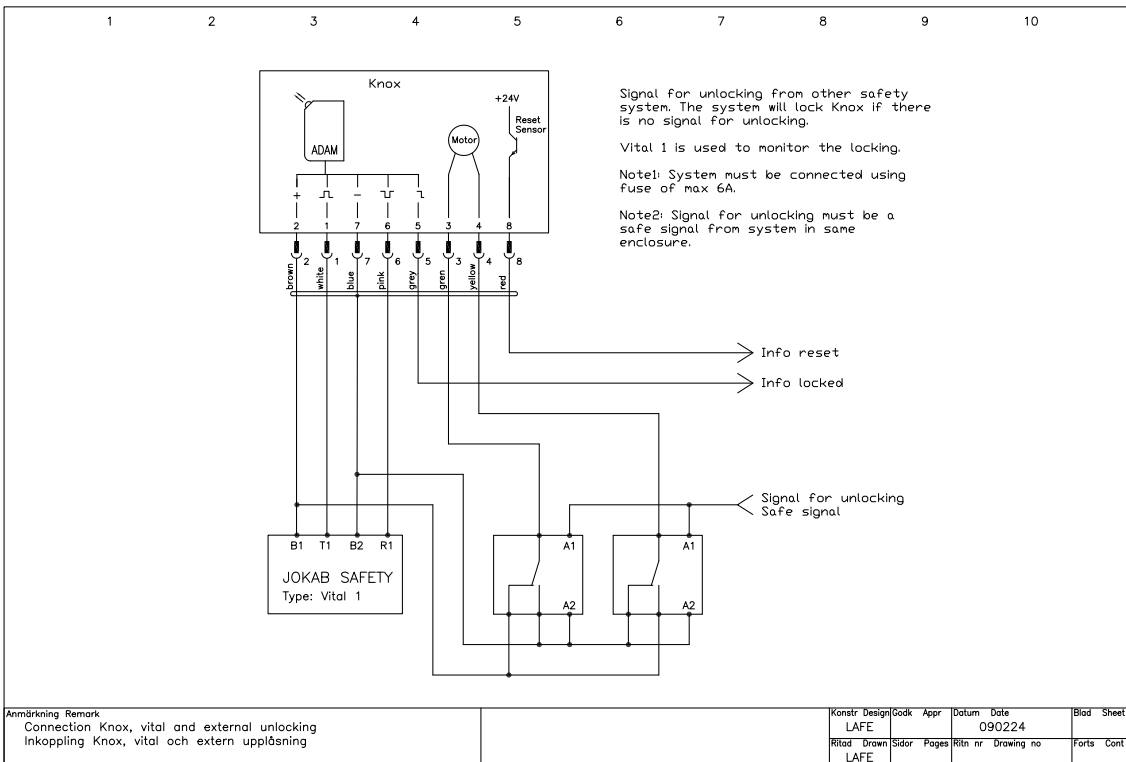
Connection examples

Connection example - Knox



9

Connection example - Knox with other unlocking



Knox

Connection examples

Connection example - Knox with downtime monitor

