



Description

The Electronic Timed-delay Unit (ETU) is used in applications that require an elapsed time to occur before allowing access to a hazardous area. The ETU uses an CU1 control unit timer to execute the timing sequence. Turning a nonremovable key initiates the timer. When the CU1 times out, its output energizes an internal solenoid, which then allows the removal of either one or two trapped keys.

The Single-key Timed delay Unit (STU) has one trapped key. After the CU1 preset time has expired, the single trapped key can be removed and used to continue the next sequence in allowing access to the hazard. The single key must be returned to the STU and trapped to allow the nonremovable key to re-initiate the hazard.

The Dual-key Timed delay Unit (DTU) has two trapped keys. After the CU1 preset time has expired, both keys can be removed and used to continue the next sequences in allowing access to the hazard. Both keys must be returned to the DTU and trapped to allow the nonremovable key re-initiate the hazard.

Features

- Timed-delay output up to 40 minutes
- Single key or dual key
- 316L stainless steel keys
- Category 1 Stop
- Replaceable code barrel assembly

Specifications

Safety Ratings

Standards	IEC/EN60204-1, EN1088, IEC/EN60947-5-1, ISO13849-1, ISO12100-1&2, ISO14119, GS-ET-19, AS4024.1
Category	Cat. 1 per EN 954-1 (ISO 13849-1)
Certifications	CE Marked for all applicable directives and BG

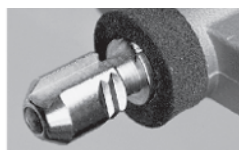
Operating Characteristics

Electrical Life	100,000 operations
Mechanical Life	100,000 operations
Solenoid Voltage	24V DC, 110V AC, and 230V AC
Time Delay	0.1 s...30 min

Environmental & Physical Characteristics

Operating Temperature [C (F)]	0...40 ° (32...104 °)
Relative Humidity	95%
Shear Force to Key	15.1 k•N (3398 lbs), max.
Torque to Key	14 N•m (124 lb•in), max.
Material	Trapped key components: 316L stainless steel Face plate: 316L stainless steel Optional box: ABS plastic or stainless steel

The Prosafe Advantage



Stainless steel construction.

Safety Switches

Electronic Timed-Delay Units

Product Selection

Type	Solenoid Voltage	Contact Set 1	Contact Set 2	Cat. No.
Single key out Panel mounted	24V DC	3 N.O. 40 A	1 N.O. 20 A	440T-MSTUE10*
		2 N.O. 20 A	1 N.C. 20 A	440T-MSTUE11*
	110V AC	3 N.O. 40 A	1 N.O. 20 A	440T-MSTUE20*
		2 N.O. 20 A	1 N.C. 20 A	440T-MSTUE22*
	230V AC	3 N.O. 40 A	1 N.O. 20 A	440T-MSTUE30*
		2 N.O. 20 A	1 N.C. 20 A	440T-MSTUE33*
Dual key out Panel mounted	24V DC	3 N.O. 40 A	1 N.O. 20 A	440T-MDTUE10**
		2 N.O. 20 A	1 N.C. 20 A	440T-MDTUE11**
	110V AC	3 N.O. 40 A	1 N.O. 20 A	440T-MDTUE20**
		2 N.O. 20 A	1 N.C. 20 A	440T-MDTUE22**
	230V AC	3 N.O. 40 A	1 N.O. 20 A	440T-MDTUE30**
		2 N.O. 20 A	1 N.C. 20 A	440T-MDTUE33**

* Substitute the desired primary code for this symbol (key not included). See 3-107 for code selection.

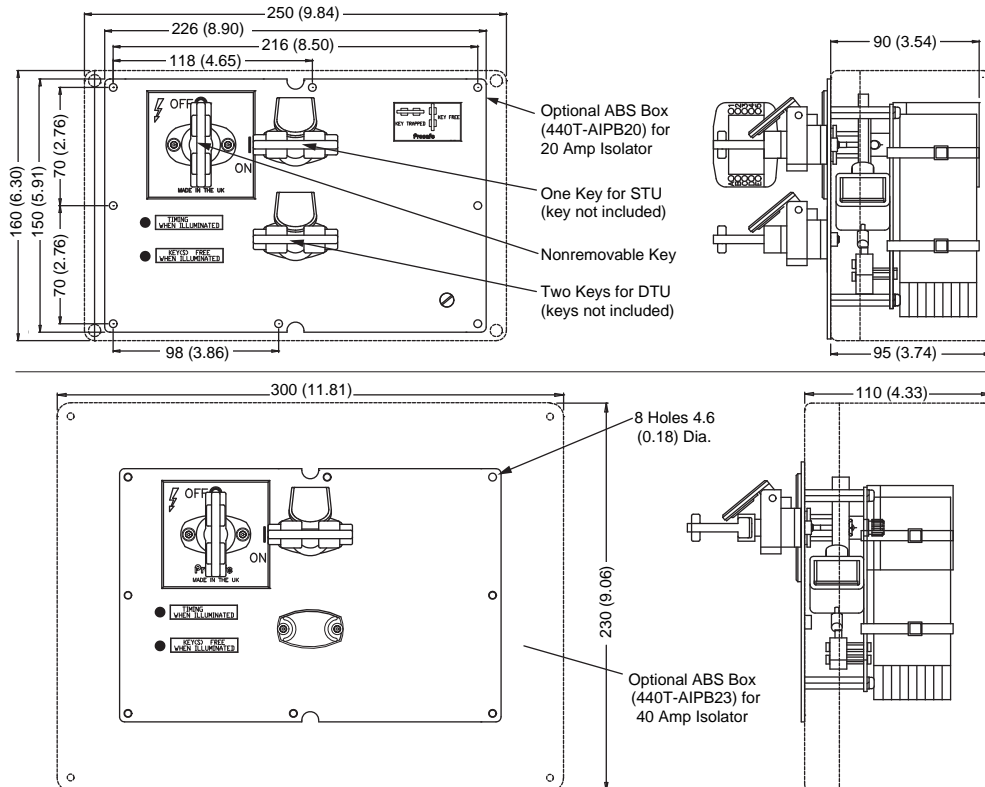
Accessories

Description	Additional Information	Cat. No.
Stainless steel key	3-140	440T-AKEYE10*
Stainless steel replacement code barrel with dust cap		440T-ASCBE14*
Stainless steel weatherproof replacement dust cap		440T-ASFC10*
Optional plastic enclosure	For use with 20 A units	440T-AIPB20
	For use with 40 A units	440T-AIPB23
Optional stainless steel enclosure	For use with all units	440T-AIPB46

* Substitute the desired primary code for this symbol (key not included). See 3-107 for code selection.

Approximate Dimensions [mm (in.)]

Dimensions are not intended to be used for installation purposes.



3-Trapped Key
Switches



Description

The Stopped Motion Unit (SMU) is used in applications that require the detection of stopped motion of mechanical parts of a machine. The SMU uses inductive proximity sensors to detect motion and the CU2 control unit to monitor the sensors.

The CU2 requires a PNP and an NPN output type proximity sensors. When the proximity sensors stop detecting movement, the CU2 activates its output, powering an internal solenoid. With the solenoid energized, one or two trapped keys can be removed from the SMU.

The removable trapped keys (one or two) can be used to continue the next sequence in allowing access to the hazardous area.

See the CU2 control unit for details on setting the delay time.

Additional proximity sensors can be found in the Sensors catalog.

Features

- Stopped motion detection
- NPN and PNP proximity sensors
- Timed-delay output up to 40 minutes
- Category 1 Stop
- Replaceable code barrel assembly

Specifications

Safety Ratings

Standards	EN1954-1, IEC/EN60204-1, EN1088, IEC/EN60947-5-1, ISO13849-1, ISO12100-1&2, ISO14119, GS-ET-19, AS4024.1
Category	Cat. 3 per EN 954-1 (ISO 13849-1)
Certifications	CE Marked for all applicable directives and BG

Operating Characteristics

Electrical Life	100,000 operations
Mechanical Life	100,000 operations
Solenoid Voltage	24V DC, 110V AC, and 230V AC
Time Delay	0.1 s...40 min
Zero Speed Sensors	2x inductive sensors

Environmental & Physical Characteristics

Operating Temperature [C (F)]	0...40° (32...104°)
Relative Humidity	95%
Shear Force to Key	15.1 k•N (3398 lbs)
Torque to Key	14 N•m (124 lb•in)
Material	Trapped key components: 316L stainless steel Face plate: 316L stainless steel Optional box: ABS plastic or stainless steel Inductive sensors: stainless steel barrel, plastic face
Mounting	Tamper resistant screws
Weight	2.0 kg (4.4 lbs)

The Prosafe Advantage



Stainless steel construction.

Safety Switches

Stopped Motion Units

Product Selection

Type	Solenoid Voltage	Contact Set 1	Contact Set 2	Cat. No.
Single key out Panel mounted	24V DC	3 N.O. 40 A	1 N.O. 20 A	440T-MSMSE10*
		2 N.O. 20 A	1 N.C. 20 A	440T-MSMSE11*
	110V AC	3 N.O. 40 A	1 N.O. 20 A	440T-MSMSE20*
		2 N.O. 20 A	1 N.C. 20 A	440T-MSMSE22*
	230V AC	3 N.O. 40 A	1 N.O. 20 A	440T-MSMSE30*
		2 N.O. 20 A	1 N.C. 20 A	440T-MSMSE33*
Dual key out Panel mounted	24V DC	3 N.O. 40 A	1 N.O. 20 A	440T-MDMSE10**
		2 N.O. 20 A	1 N.C. 20 A	440T-MDMSE11**
	110V AC	3 N.O. 40 A	1 N.O. 20 A	440T-MDMSE20**
		2 N.O. 20 A	1 N.C. 20 A	440T-MDMSE22**
	230V AC	3 N.O. 40 A	1 N.O. 20 A	440T-MDMSE30**
		2 N.O. 20 A	1 N.C. 20 A	440T-MDMSE33**

* Substitute the desired primary code for this symbol (key not included). See 3-107 for code selection.

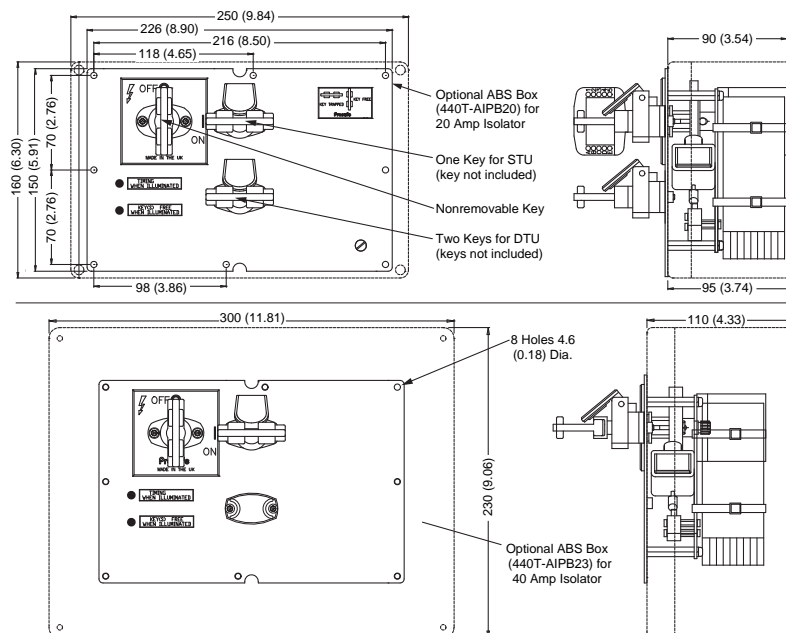
Accessories

Description	Size [mm]	Type	Additional Information	Cat. No.
Stainless steel key	—	—	3-140	440T-AKEYE10*
Stainless steel replacement code barrel with dust cap				440T-ASCBE14*
Stainless steel weatherproof replacement dust cap				440T-ASFC10*
500 mA fuse—Bussmann Cat. No. ETF-500 mA	—	500 mA @ 250V	NA	440R-A31562
Optional plastic enclosure	—	—	For use with 20 A units	440T-AIPB20
Optional stainless steel enclosure			For use with 40 A units	440T-AIPB23
			For use with all units	440T-AIPB46
Inductive Proximity Sensor, Three-wire, DC	12	NPN	page 5-57	872C-D3NN12-E2
		PNP		872C-D3NP12-E2
	18	NPN		872C-D5NN18-E2
		PNP		872C-D5NP18-E2
	30	NPN		872C-D10NN30-E2
		PNP	872C-D10NP30-E2	

* Substitute the desired primary code for this symbol (key not included). See 3-107 for code selection.

Approximate Dimensions [mm (in.)]

Dimensions are not intended to be used for installation purposes.





Description

The key exchange unit (KEX) is used in an interlocking sequence to link together other devices in the Prosafe range and caters to more complex operating sequences.

The operating principle is such that no secondary keys can be removed from the unit until all primary keys have been inserted, rotated, and trapped. The primary keys remain trapped until all secondary keys have been re-inserted, rotated, and trapped.

It is typically used in applications where there is more than one access way to the hazardous area, and each access way must be open at the same time. The key exchange unit accomplishes this by allowing one or more keys to be inserted which then releases multiple keys out.

A typical process may require a rotary key switch to turn a motor off. The key from the rotary switch is removed and inserted into a KEX. The KEX then releases three keys which would allow simultaneous access to the hazard area through three different gates. This KEX is described as 1 key in 3 keys out. The keys in are considered primary codes, so the keys are not included in the KEX. The keys out are considered secondary codes, so the keys are included.

Features

- A range of off-the-shelf units in various combinations
- 316L stainless steel construction
- Primary key(s) in release secondary keys simultaneously on units up to six ways
- Weatherproof stainless steel dust cap as standard
- Replaceable code barrel assembly

Specifications

Safety Ratings

Standards	EN1088, ISO12100-1&2, ISO14119, AS4024.1
Category	Cat. 3 per EN 954-1 (ISO 13849-1) cULus and TÜV
Certifications	CE Marked for all applicable directives and BG; C-Tick not required

Operating Characteristics

Operating Temperature [C (F)]	-40...+200 ° (-40...+392 °)
Mechanical Life	100,000 operations

Environmental & Physical Characteristics

Shear Force to Key	15.1 k•N (3398 lbs), max.
Torque to Key	14 N•m (124 lb•in), max.
Relative Humidity	95%
Material	316L stainless steel

Optional Key Exchange Cabinets

Number of Keys	Length [mm (in.)]	Width [mm (in.)]	Depth [mm (in.)]	Cat. No.
Painted Mild Steel				
7...11 way (max)	400 (15.7)	300 (11.8)	200 (7.87)	440T-AIPB30
12...15 way (max)	400 (15.7)	400 (15.7)	210 (8.26)	440T-AIPB33
16...25 way (max)	600 (23.6)	600 (23.6)	210 (8.26)	440T-AIPB34
Stainless Steel				
12...15 way (max)	400 (15.7)	400 (15.7)	210 (8.26)	440T-AIPB40
16...25 way (max)	600 (23.6)	600 (23.6)	210 (8.26)	440T-AIPB44

The Prosafe Advantage



Stainless steel construction.

Safety Switches

Exchange Units

Product Selection

Key Exchange Units		
Number of Keys	Keys In and Out	Cat. No.
2 way	1 key in 1 key out	440T-MKEXE10‡
3 way	1 key in 2 keys out	440T-MKEXE11‡
4 way	1 key in 3 keys out	440T-MKEXE12‡
5 way	1 key in 4 keys out	440T-MKEXE13‡
6 way	1 key in 5 keys out	440T-MKEXE14‡
4 way	2 key in 2 keys out	440T-MKEXE15‡
5 way	2 key in 3 keys out	440T-MKEXE16‡
6 way	2 key in 4 keys out	440T-MKEXE17‡
6 way	3 key in 3 keys out	440T-MKEXE18‡
7 way	1 key in 6 keys out	440T-MKEXE19‡
8 way	1 key in 7 keys out	440T-MKEXE20‡
9 way	1 key in 8 keys out	440T-MKEXE22‡
10 way	1 key in 9 keys out	440T-MKEXE23‡
11 way	1 key in 10 keys out	440T-MKEXE24‡
12 way	1 key in 11 keys out	440T-MKEXE25‡
13 way	1 key in 12 keys out	440T-MKEXE26‡
14 way	1 key in 13 keys out	440T-MKEXE27‡
15 way	1 key in 14 keys out	440T-MKEXE28‡
16 way	1 key in 15 keys out	440T-MKEXE29‡
17 way	1 key in 16 keys out	440T-MKEXE30‡
18 way	1 key in 17 keys out	440T-MKEXE33‡
19 way	1 key in 18 keys out	440T-MKEXE34‡
20 way	1 key in 19 keys out	440T-MKEXE35‡
21 way	1 key in 20 keys out	440T-MKEXE36‡
22 way	1 key in 21 keys out	440T-MKEXE37‡
23 way	1 key in 22 keys out	440T-MKEXE38‡
24 way	1 key in 23 keys out	440T-MKEXE39‡
25 way	1 key in 24 keys out	440T-MKEXE40‡

‡ Specify the codes individually for each primary key in (key not included) and for each secondary key (key included). See 3-107 for code selection.

Consult factory for other configurations of keys in and keys out.

Accessories

Description	Additional Information	Cat. No.
Stainless steel key		440T-AKEYE10*
Stainless steel replacement code barrel with dust cap	3-140	440T-ASCBE14*
Stainless steel weatherproof replacement dust cap		440T-ASF10*
Optional Key Exchange Cabinet	Mild steel cabinet for 7-...11-way units	440T-AIPB30
	Mild steel cabinet for 12-...15-way units	440T-AIPB33
	Mild steel cabinet for 16-...25-way units	440T-AIPB34
	Stainless steel cabinet for 12-...15-way units	440T-AIPB40
	Stainless steel cabinet for 16-...25-way units	440T-AIPB44

* Substitute the desired primary code for this symbol (key not included). See 3-107 for code selection.

Approximate Dimensions [mm (in.)]

Dimensions are not intended to be used for installation purposes.

