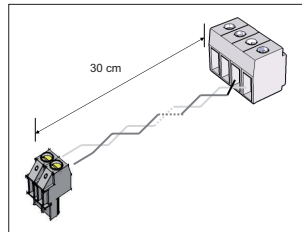
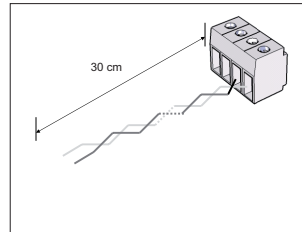
	<p><b>Προειδοποίηση:</b> Επισκεφθείτε πρώτα τις οδηγίες λειτουργίας. Αποσυνδέστε και απομονώστε την παροχή ισχύος προτού έλθει κινηθείτε τις εργασίες σε αυτήν τη συσκευή. Προσοχή! Η εγκατάσταση πρέπει να γίνεται μόνο από άτομο που έχει επαρκή εκπαίδευση.</p>	<p><b>Upozorenie:</b> Opasnost napojni! Pogledajte upute za uporabu. Odspojite i izolirajte struju prije rada na ovom uređaju. Pažnja! Ugradnja je dopuštena samo osobama stručnim u području elektrotehnike.</p>	<p><b>Advarsel:</b> Farlig spenning! Se i bruksanvisningen. Koble fra og steng av strømmen før du arbeider på denne enheten. Forsiktig! Monteringen skal kun utføres av kvalifiserte personer med elektrokompetanse.</p>	<p><b>Opozorilo:</b> Nevarna napetost! Glejte navodila za uporabo. Pred delom na tej napravi izklopite in zaklenite električno napajanje. Pozor! Namestitve sme izvesti samo elektrotehnični strokovnjak.</p>
<p>الحذر: جهد كهربائي خطير. راجع تعليمات التشغيل. التحذير: الكهارة وهم بالمشغل قبل العمل في هذا الجهاز. التحذير: يجب عدم التركيب إلا من خلال شخص على دراية بمجال التقنية الكهربائية.</p>	<p><b>Warning:</b> Hazardous voltage! Refer to operating instructions. Disconnect and lock out power before working on this device. Attention! Installation should only be performed by electrically trained personnel.</p>	<p><b>Figyelmeztetés:</b> Veszélyes feszültség! Lásd a használati utasítást. Válassza le az árárlást, mielőtt a berendezésen dolgozni kezd. Figyelem! Az üzembé helyezést csak elektrotechnikai szakértelmű rendelkező személy végezheti el.</p>	<p><b>Uwaga:</b> Niebezpieczne napięcie! Sprawdź instrukcję obsługi. Przed rozpoczęciem wykonywania pracy z tym urządzeniem należy odłączyć je od zasilania i zabezpieczyć przed przypadkowym załączeniem. Uwaga! Montaż może wykonywać wyłącznie osoba posiadająca odpowiednie kwalifikacje i uprawnienia.</p>	<p><b>Varning:</b> Livsfarlig spänning! Se i bruksanvisningen. Frånkoppla och blockera anläggningen eller en anläggningssledd innan arbete utförs. Obs! Får endast installeras av behörig elektriker.</p>
<p>Предупреждение: Опасно напряжение! Внимательно изучите инструкцию по работе. Отключите и блокируйте запитывающего прибора, прежде чем работать с устройством. Внимание! Да се монтира само от експерт електротехника.</p>	<p><b>Advertencia:</b> [Tensión peligrosa] Consulte las instrucciones de funcionamiento. Antes de trabajar con este dispositivo, desconecte y bloquee la corriente. ¡Atención! La instalación debe ser realizada únicamente por un técnico electricista.</p>	<p><b>Attenzione:</b> Tensione pericolosa! Fare riferimento alle istruzioni per l'uso. Prima di intervenire su questo dispositivo, scollegare e isolare tutte le fonti di alimentazione. Attenzione! L'installazione deve essere eseguita esclusivamente da un installatore qualificato.</p>	<p><b>Aviso:</b> Tensão perigosa! Consulte as instruções de operação. Desconecte e desligue a energia elétrica antes de trabalhar nesse dispositivo. Atenção! A instalação deve ser feita apenas por uma pessoa com especialidade em eletrônica.</p>	<p><b>Uyarı:</b> Tehlikeli gerilim! Çalışma talimatlarına bakın. Bu cihaz üzerinde çalışmadan önce elektrikli kesici ve kilitleyin. Dikkat! Yalnızca elektroteknik uzmanlığı sahip kişiler tarafından kurulabilir.</p>
<p>Varovni! Nebezpečné napätie! Víz návod k obsluze. Pred zahájením prác na tomto zariadení odpojte a uzamknite napájanie. Pozor! Toto zariadenie smie nstalovať pouze osoba s elektrotechnickou odbornosťou.</p>	<p><b>Holatus:</b> Elektrikölüğü öht! Lisateave vaadake kasutusjuhendist. Enne selle sadmega töötamist ühendage lahti ja lukustage toide. Tähelepanu! Seadet tohib paigaldada ainult elektrotehnise kogemusega isik.</p>	<p><b>İspahimas:</b> Pavojniga [tampal] Zr. naidojimo instrukcijas. Atjunkite ir laikini izbijuokite mašinos mašinos pries dirbamą su šiuo įrenginiu. Dėmesio! Įrenginį gali tik asmuo, turintis elektrotechninio patirties.</p>	<p><b>Alertment:</b> Tensione elettrica pericolosa! Consultati l'istruzionelle di utilizzare. Deconnetti e Ischiudei l'alimentazione elettrica prima di lavorare con il dispositivo. Attenzione! L'installazione deve essere realizzata da parte di personale con esperienza in elettronica.</p>	<p><b>Предупреждение:</b> Опасное электрическое напряжение! Обратитесь к инструкции по эксплуатации. Отключите электропитание и обеспечьте безопасность перед началом работ. Внимание! Монтаж должен выполняться только специалистом по электротехническим работам.</p>
<p>Advarsel: Farlig elektrisk spenning! Se betjeningsvejledningen. Frakobl enheden, og lås afbryd strømforsyningen, før du arbejder med denne enhed. Div agt! Installation kun foretages af personer med elektroteknisk ekspertise.</p>	<p><b>Varoitus:</b> Vaarallinen jännite! Katso käyttöohje. Katkaise virta ja estä virran kytkeyminen takaisin ennen töiden aloittamista. Huomio! Asennuksen saa suorittaa vain henkilö, jolla on kokemusta sähkötekniikasta.</p>	<p><b>Bridinjumus:</b> Bistams spręgnus! Skatiet darba norādījumus. Pirms sākat darbu ar šo ierīci, atvienojiet un bloķējiet strāvas padevi. Uzmanību! Uzstādāšanu drīkst veikt tikai persona ar zināšanām par elektrotehniku.</p>	<p><b>Výstraha:</b> Nebezpečné napätie! Pozrite si návod na použitie. Pred začatím prác na tomto zariadení odpojte a zablokujte napájanie. Pozor! Inštaláciu smie vykonávať len osoba s odbornými znalosťami v oblasti elektrotechniky.</p>	<p><b>Advertencia:</b> Tensione pericolosa! Consultez les consignes d'utilisation. Débranchez et verrouillez l'alimentation électrique avant d'entreprendre des travaux sur cet appareil. Attention! L'installation doit être effectuée uniquement par une personne ayant une expertise en électrotechnique.</p>
<p>Warnung: Gefährliche Spannung! Siehe Bedienungsanleitung. Vor dem Arbeiten Gerät ausschalten und von der Stromversorgung trennen. Achtung! Installation nur durch elektrotechnische Fachkraft.</p>	<p><b>Avertissement:</b> Tension dangereuse! Consultez les consignes d'utilisation. Débranchez et verrouillez l'alimentation électrique avant d'entreprendre des travaux sur cet appareil. Attention! L'installation doit être effectuée uniquement par une personne ayant une expertise en électrotechnique.</p>	<p><b>Waarschuwing:</b> Gevaarlijke spanning! Raadpleeg de bedieningsinstructies. Koppel dit apparaat los van de stroomvoorziening voordat u werkzaamheden uitvoert. Let op! Installatie mag alleen worden uitgevoerd door een monteur met elektrotechnische expertise.</p>	<p><b>Výstraha:</b> Nebezpečné napätie! Pozrite si návod na použitie. Pred začatím prác na tomto zariadení odpojte a zablokujte napájanie. Pozor! Inštaláciu smie vykonávať len osoba s odbornými znalosťami v oblasti elektrotechniky.</p>	<p><b>Advertencia:</b> Tensione pericolosa! Consultez les consignes d'utilisation. Débranchez et verrouillez l'alimentation électrique avant d'entreprendre des travaux sur cet appareil. Attention! L'installation doit être effectuée uniquement par une personne ayant une expertise en électrotechnique.</p>

## UMC100.3 - I/O Module



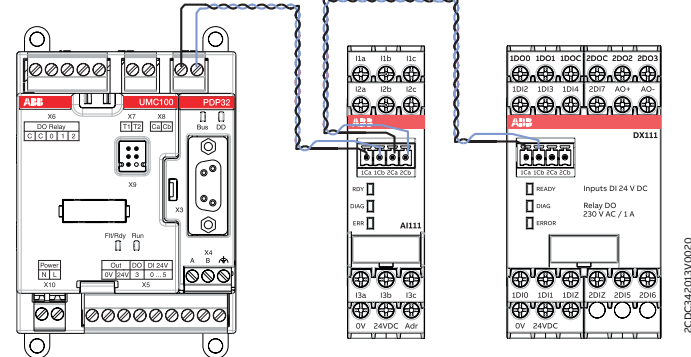
UMCIO-CAB.030, 1SAJ691000R0001

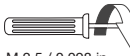
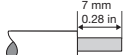
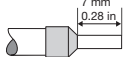



## I/O Module - I/O Module



IOIO-CAB.030, 1SAJ692000R0001

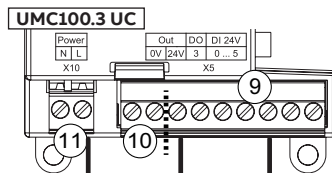
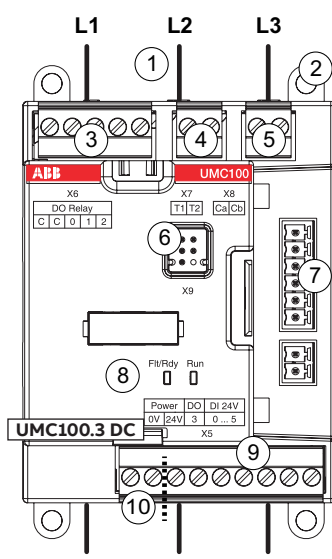
Total distance max. 3.0 m



	0.5 Nm / 4.5 lb.in
	M 2.5 / 0.098 in
	7 mm (0.28 in)
	0.2...2.5 mm <sup>2</sup> / 28...12 AWG
	7 mm (0.28 in)
	0.2...2.5 mm <sup>2</sup> / 28...12 AWG

## Technical data

Ta:	0...60 °C (32...140 °F)
Degree of protection:	IP20
Pollution degree:	3



## en Connection

- Current path for feeding through wires up to a diameter of 11 mm
  - Mounting by 4 screws M4. Eyelets can be broken off for DIN rail mounting
  - Output relay (relay contacts with common root contact)
- Important:** Screws of unused terminals have to be screwed in to achieve protection against accidental contact.
- Connection PTC (T1,T2)
  - Connection I/O module (Ca, Cb)
  - Connection control panel (X9)
  - Connection communication interface
  - 2 system LEDs
- Run:** Motor running **Trip/Rdy:** Trip/Ready
- 6 digital inputs (DI0, DI1, DI2, DI3, DI4, DI5)
  - UMC100.3 DC: 24 V DC, GND, supply voltage
  - UMC100.3 UC: 24 V DC, GND, for supply of I/O modules
  - UMC100.3 UC: 110-240 V AC/DC supply voltage

## es Conexión

- Circuito de corriente para paso de cables de hasta 11 mm de diámetro
  - Sujección con 4 tornillos M4. Para montaje en perfil DIN, romper las pestañas de sujeción con tornillos
  - Relé de salida (contactos de relé con contacto de raíz común)
- Importante:** Los tornillos de bornes no utilizados deberán apretarse para lograr la protección contra contactos accidentales.
- Conexión PTC (T1,T2)
  - Conexión módulo E/S (Ca, Cb)
  - Conexión panel de control (X9)
  - Conexión interfaz de comunicación
  - 2 LEDs de sistema
- Run:** Motor en marcha **Trip/Rdy:** Disparo/Lista
- 6 entradas digitales (DI0, DI1, DI2, DI3, DI4, DI5)
  - UMC100.3 DC: 24 V DC, GND, tensión de alimentación
  - UMC100.3 UC: 24 V DC, GND, para alimentación de módulos de E/S
  - UMC100.3 UC: 110-240 V AC/DC tensión de alimentación

## it Connessione

- Circuito di corrente per inserire fili di diametro fino a 11 mm
  - Fissaggio tramite 4 viti M4; per il montaggio su barra DIN, si possono rimuovere, rompendoli, gli occhietti
  - Relè d'uscita (contatti a relè con contatto comune)
- Importante:** Stringere anche le viti dei morsetti non utilizzati, per impedire un eventuale contatto accidentale
- Connessione PTC (T1,T2)
  - Connessione modulo I/O (Ca, Cb)
  - Connessione pannello di comando (X9)
  - Connessione interfaccia di comunicazione
  - 2 LED di sistema
- Run:** Motore in funzione **Trip/Rdy:** Intervento/Pronto
- 6 entrate digitali (DI0, DI1, DI2, DI3, DI4, DI5)
  - UMC100.3 DC: 24 V DC, GND, tensione di alimentazione
  - UMC100.3 UC: 24 V DC, GND, per l'alimentazione dei moduli I/O
  - UMC100.3 UC: 110-240 V AC/DC tensione di alimentazione

## zh 连接

- 电流接入通路，最大线径11 mm
  - 用4个M4螺钉固定。DIN导轨安装时将安装孔折断
  - 输出继电器（多个继电器触点基一脚并接公共端）
- 重要：**未接线的端子也需拧紧螺钉，以防意外短路
- 接PTC (T1,T2)
  - I/O模块接口 (Ca, Cb)
  - 接控制面板 (X9)
  - 接通讯接口
  - 2个系统LED指示灯
- Run:** 马达运行 **Trip/Rdy:** 脱扣/就绪
- 6个数字量输入 (DI0, DI1, DI2, DI3, DI4, DI5)
  - UMC100.3 DC: 24 V DC, GND, 供电
  - UMC100.3 UC: 24 V DC, GND, 用于I/O模块供电
  - UMC100.3 UC: 110-240 V AC/DC 供电

## de Anschluss

- Strompfad zum Durchstecken von Drähten bis 11 mm Durchmesser
  - Befestigung mit 4 M4 Schrauben, Ösen bei Hutprofil-Montage abbrechbar
  - Ausgangsrelais (Relaiskontakte mit gemeinsamem Wurzelkontakt)
- Wichtig:** Schrauben von nicht benutzten Klemmen müssen zum Berührungsschutz angezogen werden.
- Anschluss PTC (T1,T2)
  - Anschluss E/A-Modul (Ca, Cb)
  - Anschluss Bediengerät (X9)
  - Anschluss Kommunikationsinterface
  - 2 System-LEDs
- Run:** Motor läuft **Trip/Rdy:** Auslösung/Bereit
- 6 digitale Eingänge (DI0, DI1, DI2, DI3, DI4, DI5)
  - UMC100.3 DC: 24 V DC, GND, Versorgungsspannung
  - UMC100.3 UC: 24 V DC, GND, zur Versorgung der E/A-Module
  - UMC100.3 UC: 110-240 V AC/DC Versorgungsspannung

## fr Connexion

- Passage traversant pour câbles jusqu'à un diamètre de 11 mm
  - Fixation à l'aide de 4 vis M4. Pour un montage sur Rail DIN, sectionner les œillets
  - Relais de sortie (contacts de relays avec contact racine commun)
- Important:** Les vis des bornes de connexion non utilisées doivent être serrées pour assurer la protection contre les contacts accidentels.
- Connexion PTC (T1,T2)
  - Connexion module E/S (Ca, Cb)
  - Connexion unité de commande (X9)
  - Connexion interface de communication
  - 2 LED système
- Run:** Moteur tourne **Trip/Rdy:** Déclenchement/Prêt
- 6 entrées numériques (DI0, DI1, DI2, DI3, DI4, DI5)
  - UMC100.3 DC: 24 V DC, GND, tension d'alimentation
  - UMC100.3 UC: 24 V DC, GND, pour l'alimentation des modules E/S
  - UMC100.3 UC: 110-240 V AC/DC tension d'alimentation

## sv Anslutning

- Kabelgenomföring för kablar upp till 11 mm diameter
  - Infästning med 4 stycken M4 skruvar; fästörat kan brytas av vid DIN-skenmontage
  - Utgångsrelä (reläkontakter med gemensam punkt)
- Viktigt:** Skruvarna på oanvända klämmor måste dras åt för att ett skydd mot beröring skall uppnås
- Anslutning PTC (T1,T2)
  - Anslutning I/O-modul (Ca, Cb)
  - Anslutning kontrollpanelen (X9)
  - Anslutning kommunikationsgränssnitt
  - 2 system-LED
- Run:** Motor till **Trip/Rdy:** Utlösning/Redo
- 6 digitala ingångar (DI0, DI1, DI2, DI3, DI4, DI5)
  - UMC100.3 DC: 24 V DC, GND, manöverspänning
  - UMC100.3 UC: 24 V DC, GND, för strömförsörjning av I/O-moduler
  - UMC100.3 UC: 110-240 V AC/DC manöverspänning

## ru Подключение

- Канал трансформатора тока для проводов диаметром до 11 мм
  - Крепление 4 винтами M4. Проушины могут быть отломаны для монтажа на DIN-рейку.
  - Выходные реле (контакты реле с общим основным контактом)
- Внимание:** Винты неиспользуемых клемм должны быть закручены для обеспечения защиты от случайного прикосновения.
- Подключение PTC (T1,T2)
  - Подключение модуля B/B (Ca, Cb)
  - Разъем панели управления (X9)
  - Соединитель интерфейса связи
  - 2 системных СИД
- Run:** Двигатель работает **Trip/Rdy:** Расцепление/Готов
- 6 цифровых входов (DI0, DI1, DI2, DI3, DI4, DI5)
  - UMC100.3 DC: 24 В пост. т., GND (земля), напряжение питания
  - UMC100.3 UC: 24 В пост. т., GND (земля), для питания Bx, B/вых. модулей
  - UMC100.3 UC: 110-240 В перем. т./пост. т. напряжение питания

## en Safety and Commissioning Notes for Motors in Ex Areas

The UMC100 is a 1-channel device providing internal self-tests which guarantees reliable motor protection at a high level. A suitable housing for the UMC is required when using the UMC in Ex areas. The UMC100 must not be connected to frequency converters, softstarters or similar components in Ex applications. The UMC100 is approved for device group II, category 2 zones "G" or "D" (i.e., explosive atmospheres caused by gases, vapors, mists, or air, or by combustible dust). The UMC100 was developed and designed according to the standards IEC 61508 and ISO 13849. The increased risks in Ex areas require, amongst other things, careful observation of the following standards:

- IEC 60079-7: Electrical apparatus for explosive atmospheres: Equipment protection by increased safety "e"
- IEC 60079-14: Electrical apparatus for explosive atmospheres: Electrical installations design, selection and erection
- IEC 60079-17: Electrical apparatus for explosive atmospheres: Electrical installations inspection and maintenance

## Safe state

For the reverse starter control function, the safe state is present if both relays DO0 and DO1 are de-energized (open). For all other motor operation modes (e.g., DOL, Star-Delta Start), the safe state is present if only relay DO0 is de-energized (open).

## Safety functions

The following functions of the UMC100 are safety-relevant:

- Thermal overload protection:** The thermal overload protection function induces the de-energization of the relay(s) if the device detects a thermal overload situation (calculated using the thermal model) or a phase loss.
- Thermistor motor protection:** This safety function brings the system to its safe state if the resistance measured at the PTC inputs (T1/T2) exceeds the limit specified in the corresponding standard. This safety function only needs to be activated if the motor provides a corresponding sensor.

## Configuring the safety functions

**A) Thermal overload protection**  
The following parameters must be set for proper function of the thermal overload protection.

**Nominal motor current  $I_{e1}$ ,  $I_{e2}$  (parameter 29/30):** Motors intended for use in Ex areas require the approval of the PTB or a comparable institution.

For motors it is furthermore necessary to observe the heating period  $t_h$ , as well as the ratio between the tripping current and the nominal current ( $I_{tr}/I_n$ ). This information can be found in the certificate or on the motor type plate. The tripping time must be shorter than the heating period  $t_h$ , i.e., the tripping characteristic curve for the cold motor must run below the coordinate given by  $I_{tr}/I_n$  and  $t_h$ .  $I_{tr}$  and  $t_h$  must be set only for the pole-changing starter control function.

**Test position (parameter 28):** The tripping time must be shorter than the heating period  $t_h$ .

**Current factor (parameter 31) – for external current transformer:** The transmission ratio of the used current transformer must be set correctly.

**Phase loss protection (parameter 42):** The phase loss protection function is activated by default. Deactivation of this function is only permitted for demonstration purposes.

**Resistive load must be set to "NO" (parameter 26).**  
**Set correct number of phases (parameter 47).**

## B) Thermistor motor protection

To activate the thermistor motor protection function it is necessary to change parameter 9 "PTC" to "Tripping". The input is then automatically monitored for short-circuit and wire break conditions. In case of a fault, a motor switch-off is initiated.

## C) Signaling

Malfunction of the relay output or the main contactor is signaled as check back fault according to ISO 13849. Signaling may be performed via the fieldbus or via a fault output (signaling relay or 24 V transistor output). By default, the fault output is configured as sum fault output. To activate the fault output, set parameter "Fault output" (27) according to the application's purpose.

## D) Other parameters

**Check back (parameter 22)** is set by default to "current" and must not be changed.

**Automatic reset of thermal overload faults (parameter 14):** Automatic reset is set by default to "off" and must not be changed. This has no effects to the configurable error acknowledgement of external errors (on the multifunctional inputs or the DX1xx I/O module).

**Test position (parameter 114/115/116):** The multifunctional inputs can be used to activate the test position. After commissioning, the test position must not be unintentionally activated during regular operation. This is usually avoided by the design of the switchgear (e.g., mechanical test position).

**Emergency start (parameter 15):** "emergency start" is set by default to "off" and must not be changed. According to IEC 60079-14/11.3 a phase imbalance detection function must be configured for the protection of delta-connected motors during underload operation.

## Checking the configuration

The correct parameter configuration can be checked as follows:

- On the LCD operating panel
- Using a configuration tool (Device Type Manager DTM or Field Information Manager FIM): The parameters can be read from the device via the configuration tool and then checked for correct configuration. This can be performed on site or via the bus.

## Protecting the parameters against unintentional changes

Once the parameter configuration is completed, it is necessary to enable the parameter locking function to avoid the unintentional changing of parameters. The state of the parameter locking function is indicated by the padlock symbol on the LCD operating panel.

## Maintenance and repair

The devices do not require any maintenance. Repair work may only be performed by the manufacturer.

## Tests

The device automatically performs periodic self-tests. Therefore, no retesting has to be performed by the user if the motor is switched at least once a year. Otherwise, a test start of the motor must be performed to test the correct function of the relays.

Characteristic values according to IEC 61508 and ISO 13849 - See UMC100 handbook.

