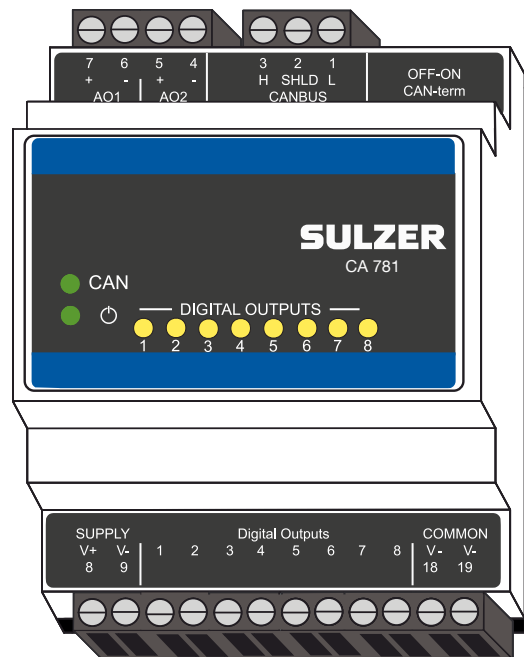

Output Expansion Module Type ABS CA 781



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1 FUNCTION AND USAGE

CA 781 is an IO expansion unit to PC 441 for additional digital and analog output signals. CA 781 expands the PC 441 system with 8 digital outputs and 2 analog output signals.

In order to run more than 2 VFD pumps in a PC 441 system with separate control signals the CA 781 is required. The expansion of 8 digital outputs gives the opportunity to control other equipment in the installation.

2 INSTALLATION

2.1 Mount the controller

Mount the unit on a 35 mm DIN rail. The physical dimensions of the device is: 86 x 70 x 58 mm (3.39 x 2.76 x 2.28 inch) (H x W x D). If it does not easily snap onto the rail, you can pull the small tab at the bottom side of the unit, using a small screwdriver.

2.2 Power supply to CA 781

CA 781 has to be powered from the same source as PC 441 or a separate power supply with common V- with PC 441 in order to secure the functionality. The CAN bus from PC 441 supply is insufficient.

WARNING Ensure that all power is off, and that all output devices to be connected to the controller also are turned off before you connect anything!

The power must be DC between 9 and 34 volts. Figure 1 shows how to connect power and how to connect a battery pack for uninterrupted operation.

For cables longer than 30 m extra surge protection should be mounted where needed.

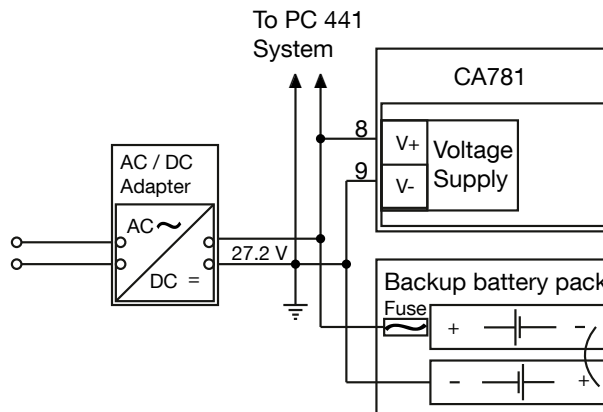


Figure 1 Power Connection

2.3 Connections

There are a total of 19 terminals that may be connected to power, relays and analog inputs in corresponding devices. These terminals are numbered from 1 to 19 according to the following chart:

Table 1. Connection chart of CA 781

#			Description
1	⊗	↔	CAN L
2	⊗	V-	CAN Shield
3	⊗	↔	CAN H
4	⊗	→	Analog Output 2 -
5	⊗	←	Analog Output 2 +
6	⊗	→	Analog Output 1 -
7	⊗	←	Analog Output 1 +

8	⊗	V+	Power Supply V+ (+9 – 34 VDC)
9	⊗	V-	Power Supply V-
10	⊗	→	Digital Output 1 +
11	⊗	→	Digital Output 2 +
12	⊗	→	Digital Output 3 +
13	⊗	→	Digital Output 4 +
14	⊗	→	Digital Output 5 +
15	⊗	→	Digital Output 6 +
16	⊗	→	Digital Output 7 +
17	⊗	→	Digital Output 8 +
18	⊗	V-	Common V –
19	⊗	V-	Common V –

2.4 Common for CA 781

CA 781 is in need of extra current because it also supplies the analog and the digital outputs. Therefore it is important that the unit is supplied by a separate power supply or powered direct from the source of PC 441 supply if it is sufficient. See section 3 Technical data table for power consumption.

Power LED When unit is powered up and running the green power LED will be lit.

CAN LED See chapter about CAN.

Digital outputs Every output has its own LED which lights then it's active.

2.5 CAN

A CAN network is of multi drop type which means that all units are connected in parallel on the same cable. In a CAN network every unit must have a unique address or ID-number.

On the CA 781 the CAN ID is fixed. If the device has contact with the network master, the CAN LED is fixed green. If the CAN LED is blinking, then the connection to the master is lost. For error codes of the CAN LED see system manual.

2.6 CAN Cable Termination

The CAN bus must be terminated at both cable ends.

If used, PC 441 is bus master and has a built-in termination that is always active and should therefore always be placed at one of the endpoints of the cable. For other devices you can activate the selectable termination with a switch, marked "CAN term". Activate termination for the device placed on the other endpoint of the cable. All other devices between should have their termination switch in "OFF" position.

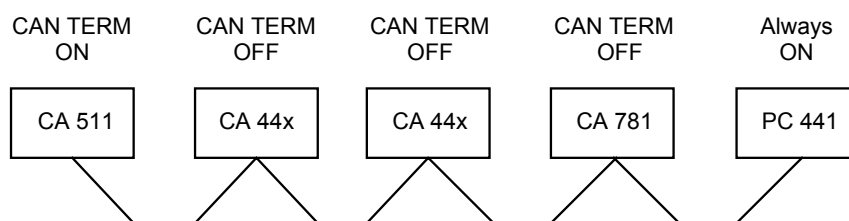


Figure 2 CAN network with connections

2.7 CAN Connections

The CAN cable uses 3 wires. Two wires are used for communication CAN_L and CAN_H and one wire is shield CAN_SHLD.

NOTE! Bus power is not allowed on CA 781.

The connections are prepared to be done by screw plug in connectors.

Table 2. CAN connection at Top Side

#			Usage
1	⊗	← →	CAN L
2	⊗	V-	CAN Shield
3	⊗	← →	CAN H

2.8 Digital Output

There are 8 digital outputs which are working as positive logic. That means that when the digital output is active the LED for corresponding output lights up and the voltage of the output is equivalent to the power supply voltage.

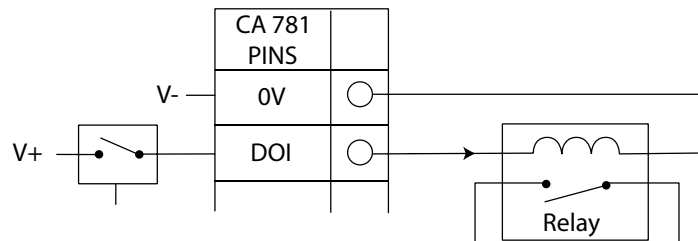


Figure 3 Digital output connection (external relay)

NOTE! 8 Digital Output as positive logic, sourcing from power supply 1A/output. Max total current for all 8 outputs together is 4 Ampere.

2.9 Analog Output

There are two analog output signals which support 4 – 20 mA output.

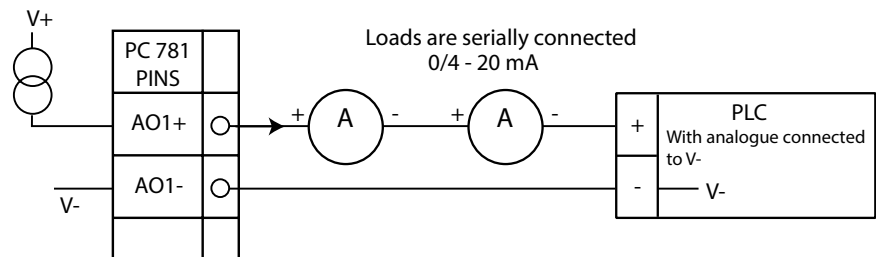



Figure 4 Analog output connection

3 TECHNICAL DATA

3.1 Technical data CA 781

Ambient operation temperature	-20 to +50 °C (-4 to +122 °F)
Ambient storage temperature	-30 to +80 °C (-22 to +176 °F)
Degree of protection	IP 20, NEMA: Type 1
Housing material	PPO and PC
Pollution degree	2
Installation category	CAT II
Flame rate	V0 (E45329)
Humidity	0-95 % RH non condensing
Mounting	DIN Rail 35 mm
Dimension (HxWxD)	86 x 70 x 58 mm (3.39 x 2.76 x 2.28 inch) Plug in connectors will add 2 x 9.5 mm (0.375 inch) to 'H'
Humidity	0-95 % RH non condensing
Power supply	9 – 34 VDC
Power current consumption	< 2.5 W Excluding external loads
Digital outputs Max load	8 DO. Positive logic. Sourcing from power supply Max load 1A/output. Max total current for all 8 outputs together is 4 A.
Analog outputs	2 AO. 4 – 20 mA Sourcing from power supply
Max load	500 ohm@12 V, 1100 ohm@24 V
Resolution	15 bits 0.4 uA
Current limit	~22 mA
Field Bus	1 CAN Port
Max altitude	Max 2000 MASL or 6562 ft. AMSL
Compliance	

Attention If the unit is used in a manner not described in this document the protection provided by the equipment may be impaired.

3.2 Cleaning

How to clean the unit

Power off the unit. Only outside/front shall be cleaned by using a dry, soft cloth. A good choice would be the microfiber type of cloth. Gently wipe the CA 781 front in order not to scratch the overlay. If the dry cloth did not completely remove the dirt, do not press harder in an attempt to scrub it off. If necessary, moisten the cloth by adding a small amount of water with thin solution of mild detergent and try again. Never use detergent with polish or solvent which can have an impact of the plastic surface.

Declaration of Conformity

As defined by:

EMC-Directives 2004/108/EC and 92/31/EEC, Low Voltage Directive 2006/95/EC, Directive for CE-Marking 93/68/EEC

(EN) EC Declaration of Conformity	(SV) EG-försäkran om överensstämmelse
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(FR) Déclaration de Conformité CE	(DA) EC-Overensstemmelseserklæring
(NL) EC-Overeenkomstigheidsverklaring	(FI) EU-Vaatimustenmukaisuusvakuutus
(ES) Declaración de conformidad CE	(ET) EÜ Vastavuse deklaratsioon
(PT) Declaração de conformidade CE	(PL) Deklaracja zgodności WE
(IT) Dichiarazione di conformità CE	(CS) Prohlášení o shodě ES
(EL) Δήλωση εναρμόνισης EK	(SK) EC Vyhlásenie o zhode
(TR) AT Uygunluk Beyanı	(HU) EK Megfelelőségi nyilatkozat

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ABS control panel CA 781

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Safety: EN 61010-1:2001

EMC: EN 61000-6-1:2001, EN 61000-6-2:2003, EN 61000-6-3:2001, EN 61000-6-4:2001



Brendan Sinnott, General Manager, Sulzer Pump Solutions Ireland Ltd. Wexford. 31.07.2023

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Address: Clonard Road, Wexford, Ireland

Declare under our sole responsibility that the product:

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To which this declaration relates is in conformity with the following standards or other normative documents as defined by:

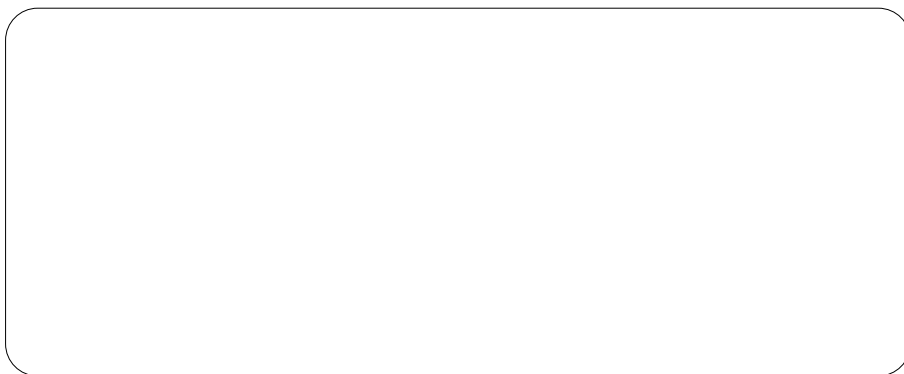
Electromagnetic Compatibility Regulations 2016, S.I. 2016 No 1091

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012, S.I. 2012 No 3133

BS EN 61010-1:2001, BS EN 61000-6-1:2001, BS EN 61000-6-2:2003, BS EN 61000-6-3:2001, BS EN 61000-6-4:2001



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07.04.2022



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