

Installation Guide

Digital actuating modul PVED for PVG 32

157R9919

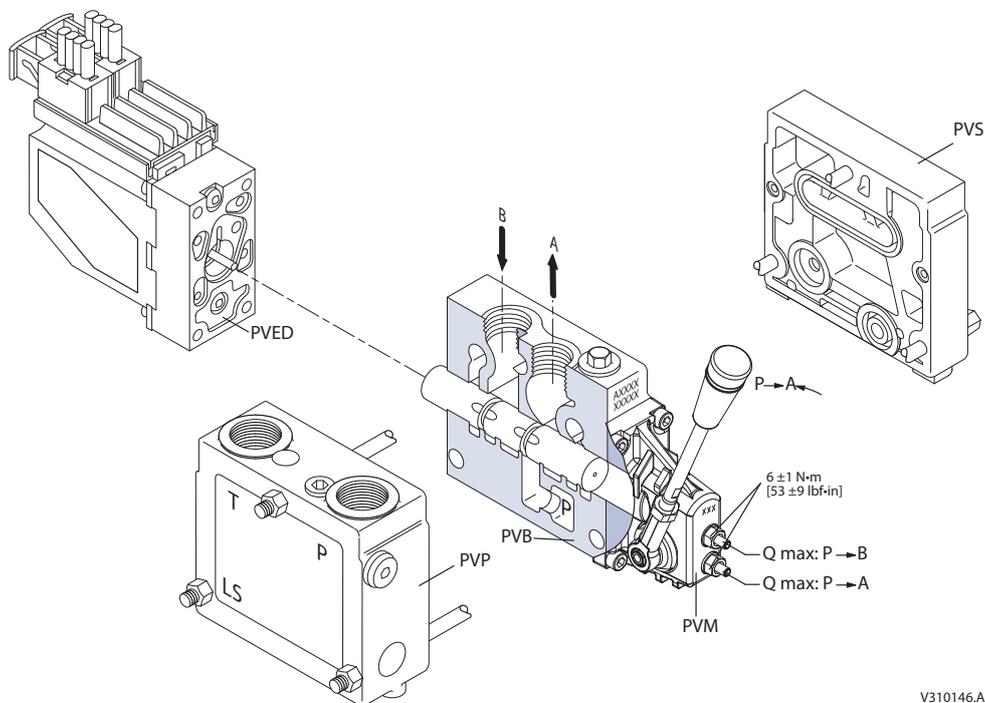
157R9919

Oliestrømmens retning for standard monterede grupper.

Oil flow direction for standard assembled groups.

Richtung des Ölstroms für Standard-Baugruppen.

Sens du débit pour ensembles standard.



V310146.A

Tekniske data

Technical data

Technische Daten

Caractéristiques Techniques

Forsyningsspænding

Nominal spænding (Vbat):	12 V
Spændingsområde (Vbat):	11 V - 15 V
Max ripple:	5%
Strømforgbrug (mode: aktiveret)	750 mA
Strømforgbrug (mode: power save)	75 mA
Effektforbrug (mode: aktiveret)	9 W
Effektforbrug (mode: power save)	0.9 W

NB: Max. strøm gennem busen:	7.5 A
Max. antal PVED i kæde (10 x 750 mA = 7.5A)	10

Versorgungsspannung

Nennspannung (Vbat):	12 V
Spannungsbereich (Vbat):	11 V - 15 V
Max. Klirrfaktor:	5%
Stromaufnahme (Betriebsart: aktiviert)	750 mA
Stromaufnahme (Betriebsart: leistungssparend)	75 mA
Leistungsaufnahme (Betriebsart: aktiviert)	9 W
Leistungsaufnahme (Betriebsart: leistungssparend)	0,9 W

NB: Max. Strom durch den Bus:	7,5 A
Max. Anzahl PVEDs in Kettenschaltung (10 x 750 mA = 7,5 A)	10

Supply voltage

Rated voltage (Vbat):	12 V
Voltage range (Vbat):	11 V - 15 V
Max. ripple:	5%
Current consumption (mode: activated)	750 mA
Current consumption (mode: power-save)	75 mA
Power consumption (mode: activated)	9 W
Power consumption (mode: power-save)	0.9 W

NB: Max. amperage through bus:	7.5 A
Max. no. of PVEDs in chain (10 x 750 mA = 7.5 A)	10

Tension d'alimentation

Tension nominale (Vbat) :	12 V
Plage de tension (Vbat) :	11 V - 15 V
Ondulation résiduelle maximale :	5%
Ampérage consommé (mode activé)	750 mA
Ampérage consommé (mode économie d'énergie)	75 mA
Puissance consommée (mode activé)	9 W
Puissance consommée (mode économie d'énergie)	0,9 W

N.B. : Courant max. traversant le bus :	7,5 A
Nombre maximum de PVED dans la chaîne (10 x 750 mA = 7,5 A)	10

Olieviskositet Oil viscosity Ölviskositet Viscosité de l'huile	Range: 12 - 75 mm ² /s [66 - 350 SUS] Min.: 4 mm ² /s [40 SUS] Max.: 460 mm ² /s [2130 SUS]
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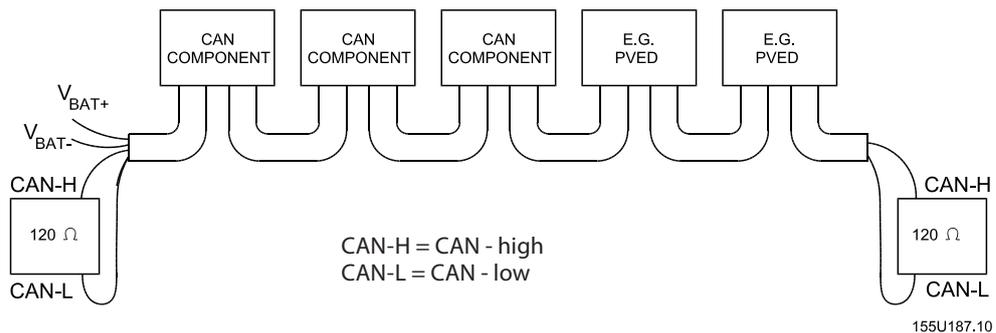
Pilottryk (over tanktryk) Pilot pressure (over tank) Pilotdruck (über Tank) Pression pilote (réservoir)	Nom: 13.5 bar [196 psi] Min.: 10 bar [145 psi] Max.: 15 bar [217 psi]
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Filtrering Filtering Filtrierung Filtage	Max. forureningsgrad (ISO 4406): 19/16 Max. degree of contamination (ISO 4406): 19/16 Max. Verschmutzungsgrad (ISO 4406): 19/16 Degré maximum de pollution (ISO 4406) : 19/16
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Olietemperatur Oil temperature Öltemperatur Température de l'huile	Range: 30 - 60°C Min: -30°C Max: 90°C
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Omgivelsestemperatur Omgivelsestemperatur Umgebungstemperatur Température ambiante	Min.: -30°C Max.: +60°C
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Tilslutninger
Connections
Anschlüsse
Raccords

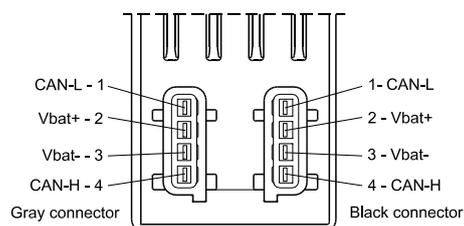
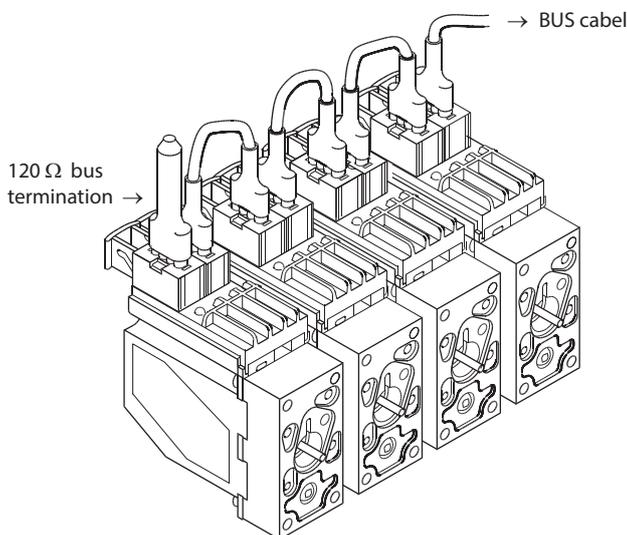


CAN-bussen skal termineres før den første komponent og efter den sidste komponent.
Termineringen foretages ved at forbinde en 120 Ω modstand mellem CAN-L og CAN-H. Er PVED den sidste komponent på bussen, kan termineringen foretages med et stik indeholdende en 120 Ω modstand som vist på tegningen.
Se iøvrigt afsnittet Stik og kabler

The CAN bus must be terminated before the first component and after the last.
Terminate by connecting a 120 Ω resistor between CAN-L and CAN-H. If the PVED is the last component in the bus, termination can be accomplished with a connector containing a 120 Ω resistor as shown on the drawing.
See also Connectors and cables.

Der CAN-Bus ist vor der ersten Komponente und nach der letzten Komponente zu terminieren.
Die Terminierung ist durch Anschluss eines 120 Ω Widerstands zwischen CAN-L und CAN-H vorzunehmen. Ist PVED die letzte Komponente am Bus, kann die Terminierung, wie in der Skizze dargestellt, mit einem einen 120 Ω Widerstand enthaltenden Stecker erfolgen.
Siehe auch Abschnitt Stecker und Kabel.

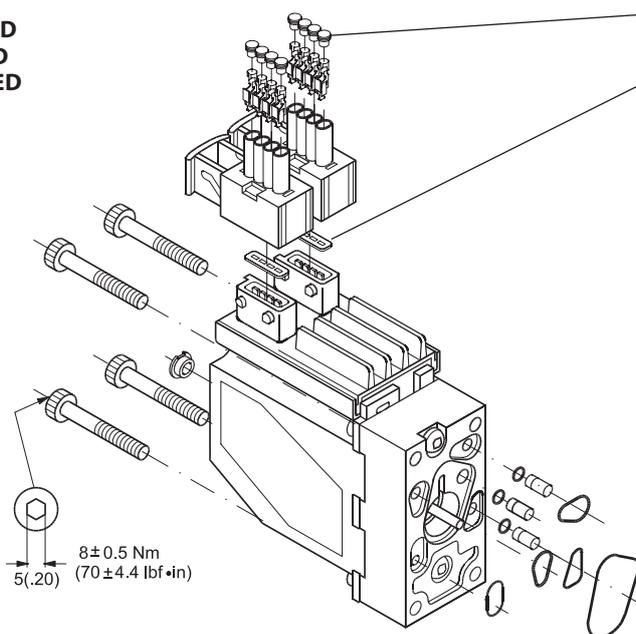
Les terminaisons du bus CAN doivent être situées avant le premier composant et après le dernier composant ; elles doivent être réalisées en plaçant une résistance de 120 Ω entre le CAN-L et le CAN-H. Il est possible, dans le cas où le PVED est le dernier composant du bus, de réaliser la terminaison avec une prise comprenant une résistance de 120 Ω (voir schéma).
Se reporter par ailleurs au chapitre Prise et câbles



157-442.11

157-444.10

Montage af PVED
Installation of PVED
Montage von PVED
Installation de PVED



157-441.11

NB:
 Pakningen i PVE stikket samt pakningerne til de enkelte ledninger, er afgørende for at korrekt tæthed af stikket opnås.

NB:
 The seal in the PVE connector and the seals for individual conductors are crucial for correctly sealing the connector.

NB:
 Die Dichtung im PVE-Stecker sowie die Dichtungen für die einzelnen Drähte sind für die Dichtheit des Steckers von entscheidendem Einfluss.

N.B. :
 Le joint de la prise PVE ainsi que les joints de chaque conducteur, jouent un rôle essentiel dans la qualité de l'étanchéité de la prise.

Udluftning

Hvis gruppen er monteret vertikalt, anbefales det at udlufte ved justerskruer Pos.A

Bleeding

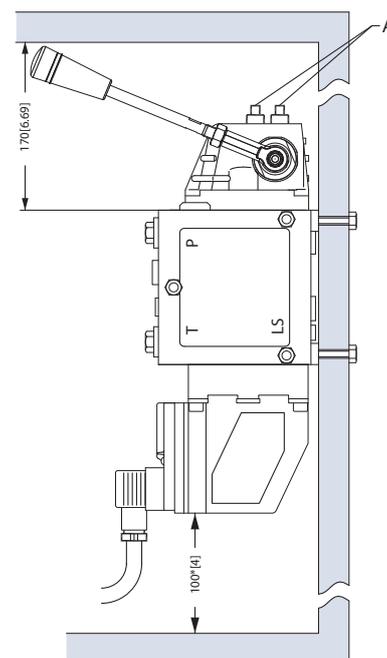
If the group is mounted in a vertical position, venting with adjusting screws (Pos. A) is recommended.

Entlüftung

Wird die Gruppe vertikal montiert, empfiehlt es sich, mittels Einstellschraube Pos. A zu entlüften.

Purge

Si le groupe est monté en position verticale, il est conseillé de purger à l'aide de la vis de réglage Rep. A



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Beskyttelse

Alle PVE-moduler overholder tæthedegrad IP65 i henhold til IEC 529.

Det anbefales dog, at PVE'en på særligt udsatte steder beskyttes i form af en afskærmning eller lignende.

Protection

All PVE modules comply with protection class IP65 in accordance with IEC 529.

However, in particularly exposed applications protection in the form of screening is recommended.

Schutzart

Alle PVE-Module erfüllen die Schutzart IP65 gemäß IEC 529.

Es ist jedoch empfehlenswert, der PVE in besonders ausgesetzten Einsatzbereichen mit einer Abschirmung oder dergleichen zu schützen.

Protection

Tous les modules PVE possèdent le degré de protection IP65 conformément à la IEC 529.

Dans les zones particulièrement exposées, il est cependant conseillé de protéger le PVE à l'aide d'un écran ou d'un dispositif similaire.

Communication

CAN interface

This is a very basic introduction to communicating with the PVED and will only be written in english. For a complete reference please read the ISO11783 standard section on auxiliary valves.

Abbreviations

AVC Auxiliary Valve Command
PFC Port Flow Command
AVEF Aux. Valve Estimated Flow
PD Process Data

Flow control

The PVED-CC is controlled by sending AVC messages to it. The messages are build like this:

Message ID: CFExxyy xx = Destination address yy = Origin address (By default the valve listens on destination 80)

Port Flow Command

MSB		Byte 1						LSB	
8	7	6	5	4	3	2	1		
PFC									

Resolution: 0.4%/bit,
Offset: 0%
Data Range: 0 to 100%

Port Flow Command

MSB		Byte 2						LSB	
8	7	6	5	4	3	2	1		
PFC									

Operating Mode

MSB		Byte 3						LSB	
8	7	6	5	4	3	2	1		
Fail Safe mode		Reserved			Valve State				

Valve State | **Fail Safe mode**

0_h Blocked* | 0_h Retract

1_h Extend | 3_h Floating

2_h Retract

Reserved

MSB		Byte 4 - 8						LSB	
8	7	6	5	4	3	2	1		

Table 1 Overview of Data bytes in the Aux. Valve Command Message.

The valve checks messages for coherency and if a message is not correct, the valve will go to blocked mode (Neutral) and an error message will be issued.

Estimated flow

When in operational mode, the valve will send out every 100 ms (configurable) an estimated flow message based on the average spool position during the last 80 ms.

The message looks like this: Message ID: CFExxyy xx=Destination address yy=Origin address

Extended port estimated flow

MSB		Byte 1						LSB	
8	7	6	5	4	3	2	1		
PFC									

Resolution: 1%/bit,
Offset: 125% offset
Data Range: -125 to 125%

Retract port estimated flow

MSB		Byte 2						LSB	
8	7	6	5	4	3	2	1		
PFC									

Resolution: 1%/bit,
Offset: 125% offset
Data Range: -125 to 125%

Operating module

MSB		Byte 3						LSB	
8	7	6	5	4	3	2	1		
Fail Safe mode		Reserved			Valve State				

Valve State | **Fail Safe mode**

0_h Blocked* | 0_h Blocked*

Reserved

MSB		Byte 4 - 8						LSB	
8	7	6	5	4	3	2	1		

Table 2 Overview of Data bytes in the Aux. Valve Estimated Flow messages.

1_h Extend
2_h Retract
3_h Floating

*Neutral

Parameter/Setting	ISO 11783-7 Operation data	ISO 11783-1. Process Data	WebGPI
Aux. Valve Port Flow Command	√ WO		√ RW
Aux. Valve Estimated Flow	√ RO		√ RO
Scaling		√ RW	√ RW
Slope		√ RW	√ RW
Ramps		√ RW	√ RW
Float Threshold		√ RW	√ RW
Invert ports		√ RW	√ RW
Save Default Settings (Only Process Data accessible parameters)		√ RW	√ RW
Restore to Default Settings (Only Process Data accessible parameters)		√WO	√WO
Error communication (Diagnostics J1939/73)			√RO
Error Log			√RO
Delete Error Log			√ WO
Aux. Valve Estimated Flow: Repetition rate	√ RW		√ RW
Aux. Valve Port Flow Command: Time-out value			√ RW
CAN Node ID			√ RW
Mechanical Spool Compensation data			√ RW

Table 3: Overview of access ways to parameters & settings. WO = write only WR = write and read RO = read only

To set process parameters such as ramps or scaling send a process data message formatted like this to the valve: Message ID: CCBxxyy xx=Destination address yy=Origin address (By default the valve listens on destination 10) Data length: 8. Data content according to table 1.

Service tool

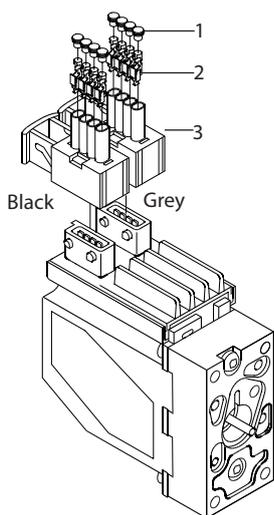
Danfoss provides a graphical service tool called WebGPI for use with the PVED. This service tool is able to access parameters according to the above table as well as monitor the valve state real-time. WebGPI uses an RS232 interface and a RS232/CAN gateway to communicate with the PVED.

Labeling

PVED is stamped in the end cover with sales and order number, serial number stating week of manufacturing (01-52), year of manufacturing (0-9), date of manufacturing (A-G), and unit serial number (0001-9999). These data are also placed in the EEPROM of the device, where they are available using our service tool WebGPI.

Moreover, a CE symbol is stamped into the unit.

**AMP-stik til PVED
AMP connector for PVED
AMP-Stecker für PVED
Kit AMP pour PVED**



AMP-connector grey

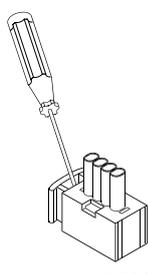
Pos.	Description	Qty.	AMP Code No.	Danfoss Code No.	Danfoss Code No. with 4 m cable
1	Wire sealing (blue)	4	828904-1	157B4992 min.100 pcs.	157B4994 min. 50 pcs.
2	JPT contact (loose piece)	4	929930-1		
3	JPT housing keying B (gray)	1	2-967059-1		

AMP-connector black

Pos.	Description	Qty.	AMP Code No.	Danfoss Code No.	Danfoss Code No. with 4 m cable
1	Wire sealing (blue)	4	828904-1	157B4993 min. 100 pcs.	157B4995 min 50 pcs.
2	JPT contact (loose piece)	4	929930-1		
3	JPT housing keying A (black)	1	1-967059-1		

AMP crimp tool incl. crimp insert for JPT-contact	157B4989
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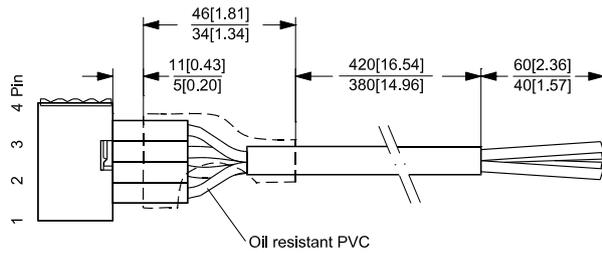
**Åbning af AMP-stik
Opening of AMP-connector
Öffnen des AMP-Steckers
Ouverture des kit AMP**



Kabel med stik
Cable with connector
Kabel mit Stecker
Câble avec connecteur

Gråt stik
 Grey connector
 Grauer Stecker
 Support gris

Code: 157B4994
 (min. 50 pcs.)

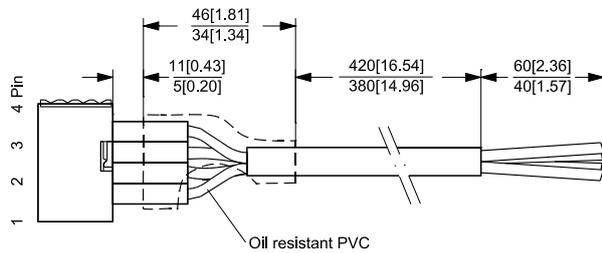


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Pin 1	Hvid, White, Weiß, Blanche
Pin 2	Blå, Blue, Blau, Bleu
Pin 3	Gul, Yellow, Gelb, Jaune
Pin 4	Rød, Red, Rot, Rouge

Sort stik
 Black connector
 Schwarzer Stecker
 Support noir

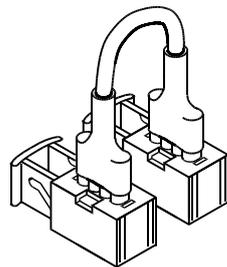
Code: 157B4995
 (min. 50 pcs.)



157-376.10

Kabelsløjfe
 Loop cable
 Kabelschleife
 Câble de boucle

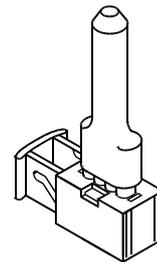
Code: 157B4987
 (min. 50 pcs.)



157-446.10

120Ω terminering
 120Ω termination
 120Ω Terminierung
 120Ω termination

Code: 157B4988
 (min. 20 pcs.)



157-445.10