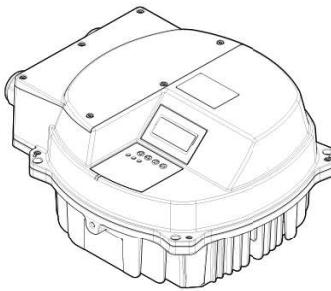




## Quick Startup Guide

**HYDROVAR®**



HVL 2.015 - 4.220

**Avvertimento:** la presente guida non sostituisce il manuale di istruzioni e operativo. Prima dell'installazione e dell'utilizzo del prodotto, leggere attentamente il manuale. L'uso improprio del prodotto può causare lesioni personali e danni e può invalidare la garanzia.

**WARNING:** This guide does not replace the instruction and operating manual. Read the manual carefully before installing and using the product. Improper use of the product can cause personal injury and damage and may void the warranty.

**AVERTISSEMENT :** Ce guide ne remplace pas le manuel d'instructions et d'utilisation. Lire attentivement le manuel avant d'installer et d'utiliser ce produit. Une utilisation incorrecte du produit peut causer des blessures, des dégâts et pourrait annuler la garantie.

**WARNUNG:** Diese Richtlinie ersetzt nicht die Betriebs- und Bedienungsanleitung. Lesen Sie das Handbuch aufmerksam, bevor Sie das Produkt installieren und verwenden. Ein nicht bestimmungsgemäßer Gebrauch des Produktes kann zu Verletzungen und Beschädigungen sowie zum Verlust der Garantie führen.

**ADVERTENCIA:** Esta guía no sustituye al manual de funcionamiento e instrucciones. Lea el manual atentamente antes de instalar y utilizar el producto. El uso incorrecto de este producto puede provocar lesiones personales y daños, y puede anular la garantía.

**AVISO:** Este manual não substitui o manual de utilização. Leia este manual com atenção antes de instalar e utilizar o produto. Uma utilização inadequada do produto pode causar lesões e danos, bem como invalidá-lo a garantia.

**WAARSCHUWING:** Deze handleiding is geen vervanging voor de instructie- en bedieningshandleiding. Lees vóór installatie en gebruik de handleiding zorgvuldig door. Verkeerd gebruik van het product kan leiden tot persoonlijk letsel en/of schade en kan de garantie doen vervallen.

**ADVARSEL:** Geen veilingdienst erstatter ikke instruktionen og

**ADVARSEL:** Denne vejledning erstatter ikke instruktionen og betjeningsvejledningen. Læs håndbogen omhyggeligt, før du installerer og bruger produktet. Forkert brug af produktet kan forårsage personskade og fingsskade samt ugyldiggøre garantien.

**ADVARSEL:** Denne veilederingen erstatter ikke bruksanvisningen. Les bruksanvisningen nøyde før du installerer og bruker produktet. Uriktig bruk av produktet kan forårsake personskader og skader på eiendom, og kan oppheve garantien.

**VARNING:** Den här guiden ersätter inte instruktions- och driftshandboken. Läs handboken noggrant innan du installerar och börjar använda produkten. Felaktig användning av produkten kan orsaka personskador och skador samt upphäva garantin.

**Varoitus:** Tämä opas ei korvaa asennus-, ja käyttöohjeikirjaa. Lue käyttöohjeet huolellisesti ennen laitteen asennusta ja käyttöä. Virheellinen käytös voi aiheuttaa henkilövahinkoja ja tuotteesta johtuvia vahinkoja sekä lopettaa takuu.

Jaa. Lue ohjeiksi huolellisesti ennen tuotteen asentamista ja käyttämistä. Tuotteen virheellinen käytöllä voi aiheuttaa ruumiinvamman sekä vahinkoja ja voi johtaa takuuun mitätöitymiseen.

**VIDVÖRUN:** Bessi leibärvisir kemuri ekki i staðnum fyrir kennslus og vinnumhæðbókuna. Þessi handbókina vandlega áður en varar er sett upp og hún notúst. Róng notkun vörurnnar getur valdilíkamstörfi og skemmdumð og getur ógildað ábyrðinu.

**KOMASUUNI** ja **SEKUNDAARNU** ja **GETU** **OGIAD** **ABYRGAJU**.  
**HOIATUS**: see juhend ei asenda juhiseid ega kasutusjuhendit. Enne toote paigaldamist ja kasutamist luguge see kasutusjuhend hoolikalt läbi. Toote valge kasutamine võib põhjustada kehavigastusi, tekiklada varalist kahju ning lõpetada garantii kehtivuse.

**ISPĖJIMAS:** Šis vadovas nepakeičia instrukcijų ir naudojimo vadovo. Prieš montuodami ir naudodami gaminį, atidžiai perskaitykite vadovą. Netinkamai naudojant gaminių kyla traumų ir sugadintinavimų pavojus. Taip pat gal būti anuliuota garantija.

**OSTRZEŻENIE:** Niniejszy przewodnik nie zastępuje po- dręcznika obsługi i użytkowania. Przed zamontowaniem i rozpoczęciem użytkowania produktu należy uważnie przeczytać podręcznik. Niezgodne z przeznaczeniem użycie produktu może spowodować obrażenia ciała i uszkodzenia oraz skutkować utratą gwarancji.

**PPOZOR:** Tato příručka nenahrazuje provozní příručku, ani návod k obsluze. Před instalací a použitím výrobku si příručku pozorně přečtěte. Nesprávné použití výrobku může vést k úrazu a poškození a mohlo by mít za následek zneplatnění záruky.

**FIGYELMEZTETÉS:** ez az útmutató nem helyettesíti a használati utasítást vagy a felhasználói kézikönyvet. A termék beszerelése és használata előtt olvassa el figyelmesen a kézikönyvet. A termék nem megfelelő használata személyi sérülést vagy károsodást okozhat, valamint semmilyen teheti a jóllábat.

**AVERTISMENT:** acest ghid nu înlocuiește instrucțiunile și manualul de funcționare. Înainte de a instala și utiliza produsul, citiți cu atenție manualele. Utilizarea necorespunzătoare a produsului poate cauza vătămări corporale și deterioran și poate anula

**ПРЕДУПРЕЖДЕНИЕ:** Този наръчник не заменя ръководството за инструкции и работа. Прочетете ръководството внимателно, преди да монтирате и Неправилната употреба на продукта може да причини наранявания и повреди, и може да направи гаранцията недействителна.

**OPOZORILO:** Ta priročnik ne nadomešča navodil za uporabo in priročnika za upravljanje. Pred namestitvijo in uporabo naprave natančno preberite priročnik. Nepravilna uporaba iznica garancijo.

**UPOZORENJE:** Ovaj priuručnik ne zamjenjuje priručnik s uputama i priručnik za uporabu. Pažljivo pročitajte priručnik pre instalacije i korištenja proizvoda. Nepravilno korištenje proizvoda može uzroci tjelesne ozljede i oštećenja te može ponistiti jamstvo.

**UPOZORENJE:** Ovaj priručnik ne zamjenjuje uputstva i operativni priručnik. Pažljivo pročitajte priručnik pre instalacije

operativni prihinc. Pažljivo pročitate prihinc neke i konšerviranje proizvoda. Nepravilno konšerviranje proizvoda može uzrokovati telesne povrede i oštećenja i može ponisti garantiju.

**UYARI:** Bu kilavuz kullanım talimatı veya kullanım kilavuzu yerine geçmez. Ürünü monte etmeden ve kullanmadan önce bu el kitabını dikkatlice okuyun. Ürünün uygunsuz kullanımı kişisel yaralanmalara ve maddi hasarlara yol açabileceği gibi garantiye de gecersiz kılarabilir.

**ПРЕДУПРЕЖДЕНИЕ:** Данное руководство не заменяет инструкцию и руководство по эксплуатации. Перед установкой и эксплуатацией данного изделия необходимо внимательно ознакомиться с настоящим руководством. Ненадлежащее использование изделия может привести к производственным травмам и повреждению имущества, а также к прекращению действия гарантии.

**ПОПЕРЕДЖЕННЯ:** Даний посібник не замінє інструкцію та керівництво по експлуатації. Потрібно уважно прочитати цей посібник перед встановленням та використанням виробу. Неналежне використання виробу може привести до виробничих травм та пошкоджень, а також до втрати гарантії.

مق. لی عینتالو اتاماری عبتلله لیوله لیم لیلدلد اده لیچی لای ری-ذخت  
یوجوئی ن-نکهی، یعنی مدا-ماخت-س و بی-غفرت-لیق فیان-لیع لیلدلد اهار-ق  
فلت-و-کیص-خی هبا-ص ای-شود-ع دلایا ج-ستن-بلل حی صرلی ریغ اد-عنت-س!!.



**P1323 IND.INVERTER****1**

Valore reale

Freq. uscita

F sx

F su

F giù

F dx

Imposta l'indirizzo desiderato (l'impostazione possibile è compresa tra 1 e 247) per l'interfaccia utente.

L'utente può configurare nuovamente l'indirizzo, nel caso in cui questo sia stato sovrascritto in un sistema a pompa multipla.

## 1 Operation



### 1.1 Startup checklist

1. Install the unit on the motor fan cover, keeping motor cable as short as possible.
2. Fasten the unit using the mounting clamps and relative screws
3. Connect the drive to the power supply ; connect, if necessary, all the needed auxiliary input/output signals of the drive. See *Figure 1* (page 30).
4. Take care of some particular connection examples, related to sensors:
  - a) using an active sensor, see *Figure 2* (page 31).
  - b) using a passive sensor, see *Figure 3* (page 31).
  - c) using 2 passive sensors, see *Figure 4* (page 32).
5. In case a serial communication is required, take care of some particular connection examples:
  - a) for a serial connection to an external device, see *Figure 5* (page 32).
  - b) for a serial connection for multi-pump application, see *Figure 6* (page 33).
6. If the application requires to use the status relay contacts, follow the connection example in *Figure 7* (page 33).
7. When the Premium Card is available, connect, if necessary, all the needed auxiliary input/output signals of the card. See *Figure 8* (page 34).
8. If HYDROVAR is fitted with the additional Premium Card, take care of the connection example to connect 3 fixed speed pumps to the Premium Card: see *Figure 9* (page 35).
9. Power the drive, wait for Xylem logo to disappear and then proceed with configuring the Startup Submenu M1300.

### 1.2 Submenu M1300

**P1301 LANGUAGE****English**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

This parameter selects the display language.

**P1302 MOTOR NOM.POWER****P1302 MOTOR NOM.POWER****1.5 kW**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

This parameter sets the nominal power of the motor coupled with HYDROVAR, as reported on the motor nameplate.

**P1303 MOTOR NOM.VOLT.****P1303 MOTOR NOM.VOLT.****230 V**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

Sets the motor nominal voltage, as reported in the motor nameplate, according to

- the chosen motor connection
- the output voltage of the HYDROVAR

**P1304 PRE-SET MOTOR ?****P1304 PRE-SET MOTOR?****YES**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

By selecting "YES", the user is declaring the use of a Lowara IE3 surface 2-poles motor 50Hz (without Motor Filter): in this case, the motor's electrical parameters are already available to HYDROVAR, so the start-up procedure skips to P1308 STC MOTOR PROT..

By selecting "NO", the user is declaring the use of any other motor: in this case the motor's electrical parameters need to be set into HYDROVAR, so the start-up procedure goes to the next step (P1305 MOTOR NOM.CURR.)

**P1305 MOTOR NOM.CURR.****P1305 MOTOR NOM.CURR.****7.5 A**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

Sets the motor nominal current, as reported in the motor nameplate, according to

- the chosen motor connection
- the output voltage of the HYDROVAR

**P1306 MOTOR NOM.SPEED****P1306 MOTOR NOM.SPEED****3000 rpm**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

Sets the motor nominal speed, as reported in the motor nameplate.

**P1307 AMPI****P1307 AMPI****Full**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

This parameter activates the Automatic Motor Parameter Identification; possible settings are "Off" (AMPI not active), "Full" or "Reduced" (procedure to be performed only in case LC filters are applied on the motor cable).

For this parameter please note that, once entered into edit mode (by pressing the provided push button), the user can confirm the new value by pressing for 3 sec the right (►) push button.

**P1308 STC MOTOR PROT.****P1308 STC MOTOR PROT.****STC Trip**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

This parameter sets the protection technique against motor overheating; possible the settings are "Thermistor trip" or "STC trip" (default).

**P1309 MODE****P1309 MODE****Controller**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

This parameter selects which operating mode to set the unit to.

**P1310 PUMP ADDR.****P1310 PUMP ADDR.****1**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

This parameter selects an address (1-8) for each HYDROVAR. If several inverters are connected via the internal RS-485 connection (maximum eight in Cascade serial mode), then the following must apply:

- Each HYDROVAR needs an individual pump-address (1-8)
- Each address can only be used once.

**P1311 CONTROL MODE****P1311 CONTROL MODE****Constant**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

For this parameter please note that, once entered into edit mode (by pressing the provided push button), the user can confirm the new value by pressing for 3 sec the right (►) push button.

This parameter sets the pressure control mode for the pump system (single and multi pump): depending on the setting ("Constant" or "Differential") a set of further parameters are automatically configured.

Whenever P1311 CONTROL MODE is set to a new value, each parameter in the below table is overwritten to its own specified value, regardless of previous different settings.

	<b>P1311 = Constant</b>	<b>P1311 = Differential</b>
<b>P225 RAMP 3</b>	70 sec	90 sec
<b>P230 RAMP 4</b>	70 sec	90 sec
<b>P250 MIN.FREQ.</b>	20 Hz	25 Hz
<b>P315 HYSTERESIS</b>	80%	90%
<b>P410 CONFSENSOR</b>	<b>Sensor 1</b>	<b>Sens.1 - Sens.2</b>

**P1312 DIMENSION UNIT****P1312 DIMENSION UNIT****bar**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

Selects the unit of measure for the system.

**P1313 START-UP COMPLETED?****P1313 START-UP COMPLETED?****No**

Actual Value

Output Freq.

Left fct.

Up fct.

Down fct.

Right fct.

If the application is a multi-pump, then the startup procedure for the first [N-1] pumps is stopped here when selecting Yes.

If the application is a single-pump or the last pump of a Multi-pump, then select No .

**P1314 SENSOR RANGE**

**P1314 SENSOR RANGE****20mA - 10.00bar**

Actual Value

Left fct.

Up fct.

Output Freq.

Down fct. Right fct.

Sets the end range value (20 mA or 10 V) of the connected sensor. In particular, the end range value (20 mA or 10 V) must be always equal to the 100% of the sensor range (that is, for a 0.4 bar differential pressure sensor, is 20 mA=0.4 bar).

**P1315 REQUIRED VAL.****P1315 REQUIRED VAL.****XXXXX bar**

Actual Value

Left fct.

Up fct.

Output Freq.

Down fct. Right fct.

The information shown on the display depend on the selection done in parameter 1309: when parameter P1309 **MODE** is set to **Controller, Cascade Relay, Cascade Serialor Cascade Synchron**, display shows **REQUIRED VAL.** as the parameter description. When parameter P1309 **MODE** is set to **Actuator**, display shows **ACTUAT.FRQ.1** as the parameter description.

**P1316 START VALUE****P1316 START VALUE****100 %**

Actual Value

Left fct.

Up fct.

Output Freq.

Down fct. Right fct.

Sets the end range value (20 mA or 10 V) of the connected sensor. In particular, the end range. This parameter defines, in percentage (0-100%) of the required value (P1315 **REQUIRED VAL.**), the start value after pump stops.

If P1315 **REQUIRED VAL.** is met and there is no more consumption, then the pump stops. The pump starts again when the pressure drops below P04 **START VALUE**. Value 100% makes this parameter not effective (100%=off)!

**P1317 MIN.THRESH.****P1317 MIN.THRESH.****Disabled**

Actual Value

Left fct.

Up fct.

Output Freq.

Down fct. Right fct.

Selects the minimum threshold limit: if an adjusted value > 0.00 is not reached within the P1318 **DELAY-TIME**, then the unit stops (failure message: MIN.THRESH.ERROR).

**P1318 DELAY-TIME****P1318 DELAY-TIME****2 sec**

Actual Value

Left fct.

Up fct.

Output Freq.

Down fct. Right fct.

Selects the delay time of the minimum threshold limit: it shuts off the HYDROVAR if the actual value drops below P1317 **MIN.THRESH.** or if a low-water protection (at terminals X1/16–17) becomes open.

**P1319 DATE****P1319 DATE****XX.XX.20XX**

Actual Value

Left fct.

Up fct.

Output Freq.

Down fct. Right fct.

Using this parameter current date can be set.

**P1320 TIME****P1320 TIME****HH.MM**

Actual Value

Left fct.

Up fct.

Output Freq.

Down fct. Right fct.

Using this parameter current time can be set.

**P1321 AUTO-START****P1321 AUTO-START****ON**

Actual Value

Left fct.

Up fct.

Output Freq.

Down fct. Right fct.

If **AUTO-START** = ON, then the HYDROVAR starts automatically (in case of demand) after reconnection of power following disconnection.

**P1322 START-UP COMPLETED?****P1322 STARTUP COMPLETED?****No**

Actual Value

Left fct.

Up fct.

Output Freq.

Down fct. Right fct.

If the user configured the whole application by selecting "YES" then the HYDROVAR will not make available the Start-up menu at every power-on.

By selecting "NO" at next power-on, the HYDROVAR will offer to the user the start-up procedure.

**P1323 ADDRESS****P1323 ADDRESS****1**

Actual Value

Left fct.

Up fct.

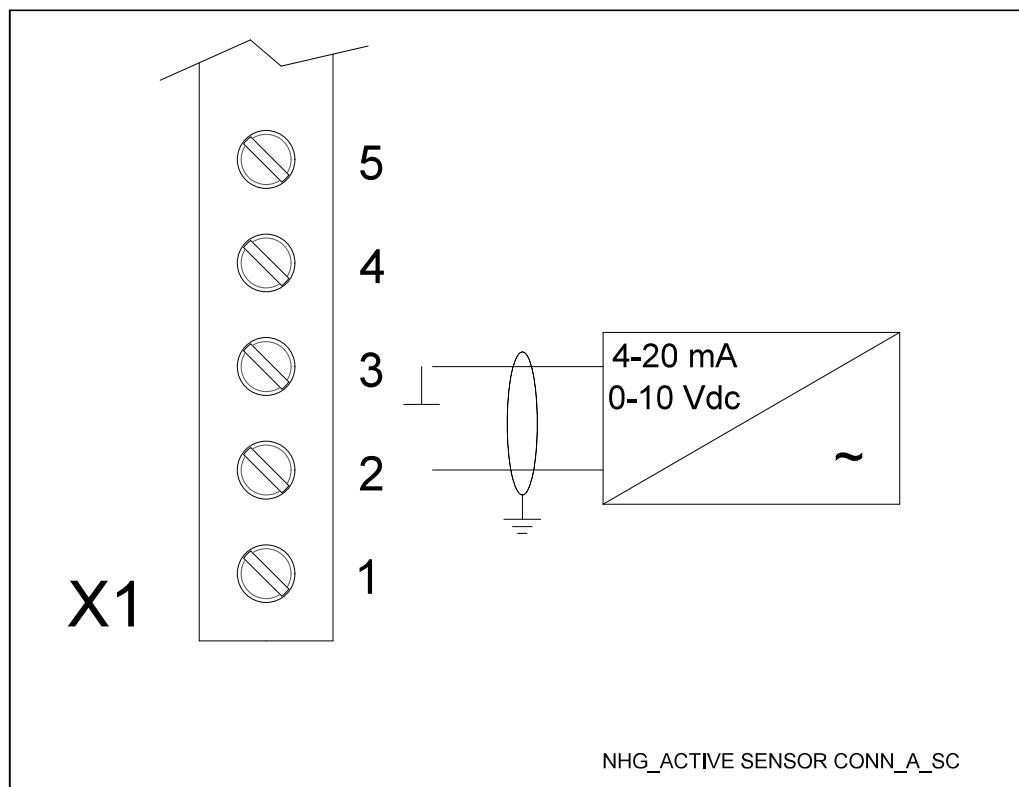
Output Freq.

Down fct. Right fct.

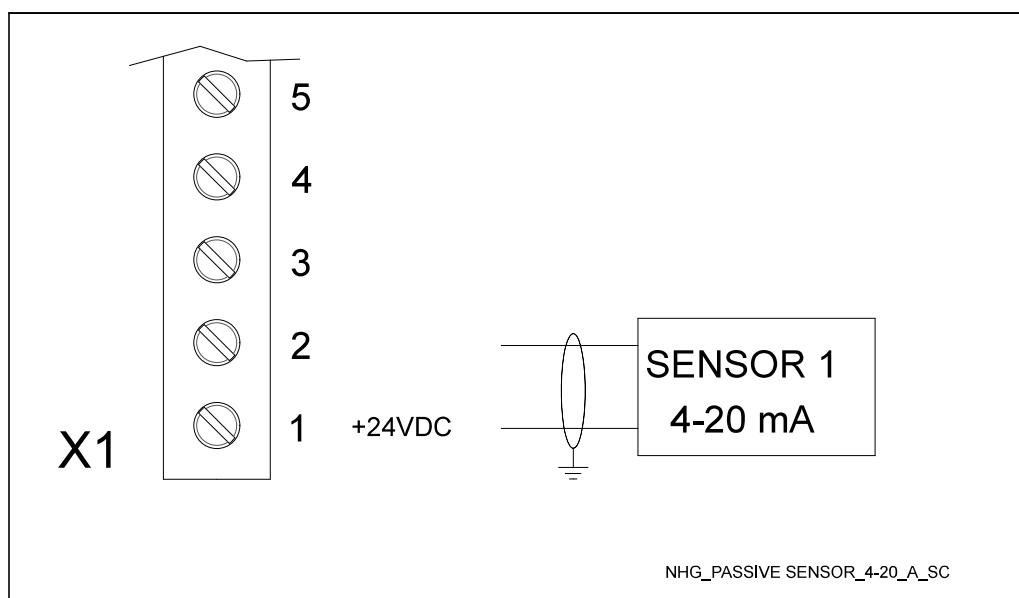
## 1.

	26	GX, electronic ground		RS485 port 2 for external communication. Modbus / Bacnet
	25	RS485 port 2: RS485-2P		
	24	RS485 port 2: RS485-2N		
	23	Ground for external fan control		External fan (Not to be used: only for Wall Mounting kit connection!)
	22	External fan control		
	21	External switch (SOLO RUN) input (Ground)		
	20	External switch (SOLO RUN) input		
	19	Ground for external ON/OFF input		
	18	External ON/OFF input		
	17	Ground for low water input		
	16	Low water input		
	15	Ground for configurable digital input 1		
	14	Configurable digital input 1		
<b>X1</b>				
	13	Ground for auxiliary voltage supply		Internal interface for multi-pump system
	12	RS485 port 1: RS485-1P		
	11	RS485 port 1: RS485-1N		
	10	Ground for auxiliary voltage supply		
	9	+10VDC Auxiliary voltage supply		
	8	PTC or thermal switch input (Ground)		
	7	PTC or thermal switch input		
	6	Ground for external sensor 2		
	5	Actual value current / voltage input sensor 2		
	4	+24VDC Power supply for external sensor 2		
	3	Ground for external sensor 1		
	2	Actual value current / voltage input sensor 1		
	1	+24VDC Power supply for external sensor 1		
<b>X1</b>				
NHG_DIGIT_ANALOG_INPUT_X1_A_SC				

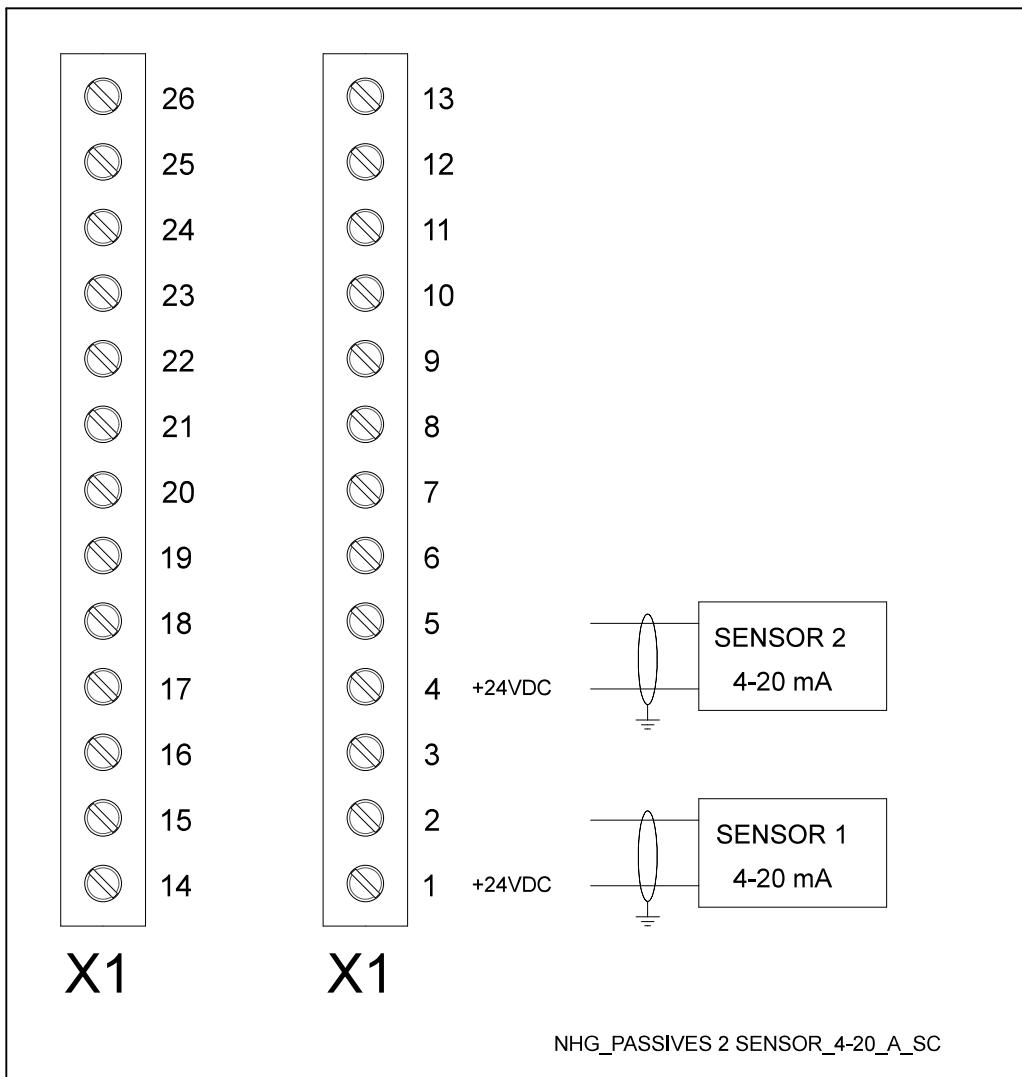
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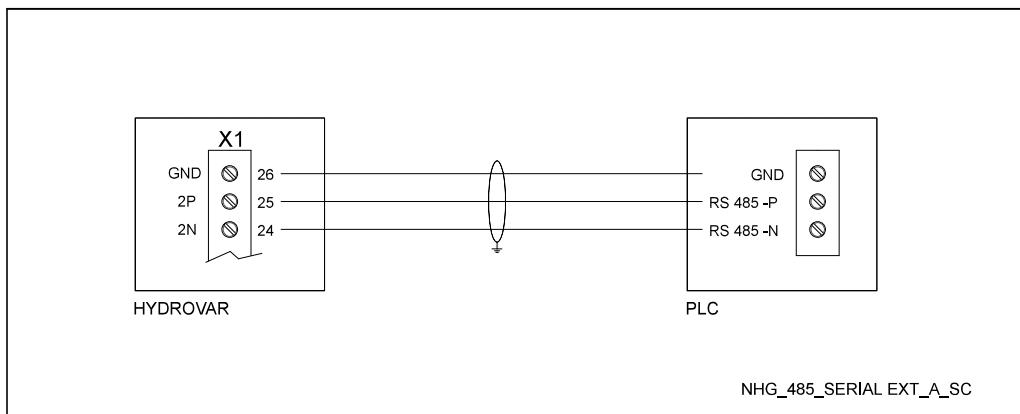
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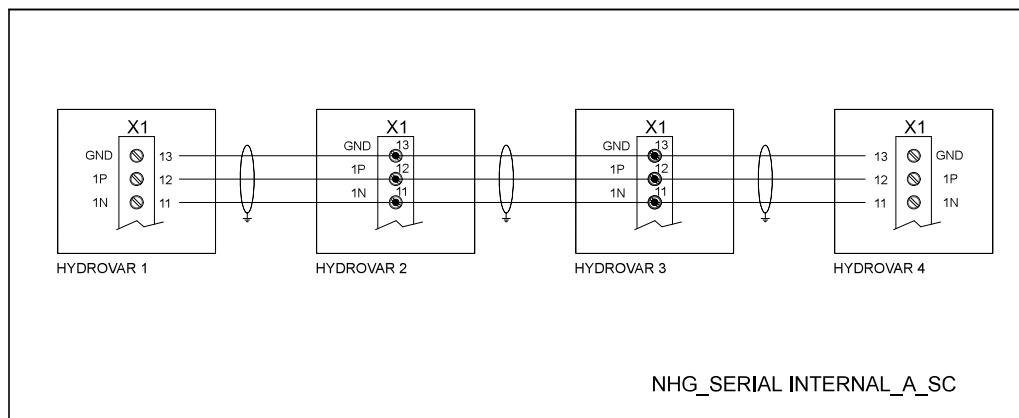
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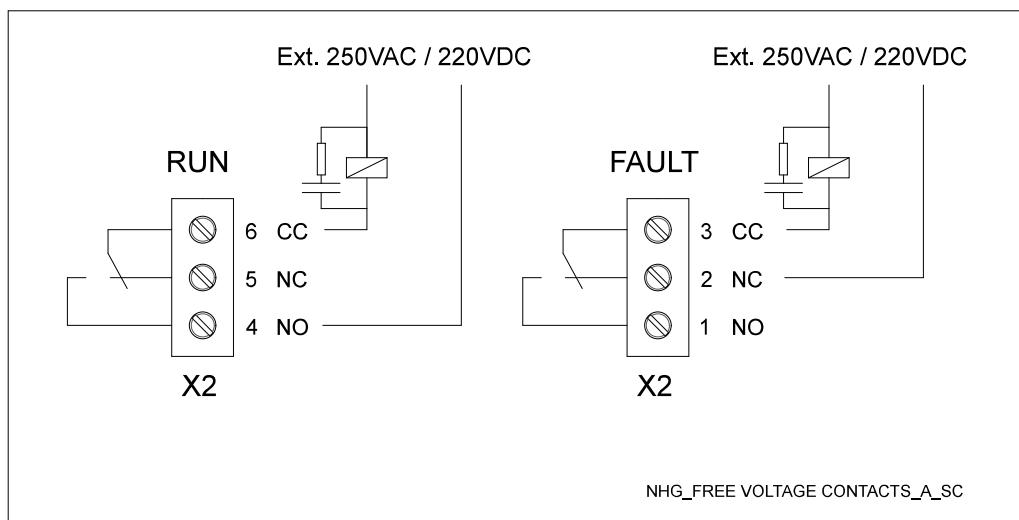
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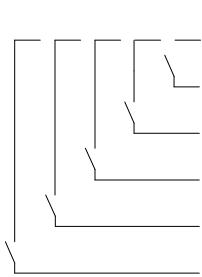
6.



7.



## PREMIUM CARD HYDROVAR



- |   |                       |
|---|-----------------------|
| 6 | COM,Ground for relays |
| 5 | Relay 5: NO           |
| 4 | Relay 4: NO           |
| 3 | Relay 3: NO           |
| 2 | Relay 2: NO           |
| 1 | Relay 1: NO           |

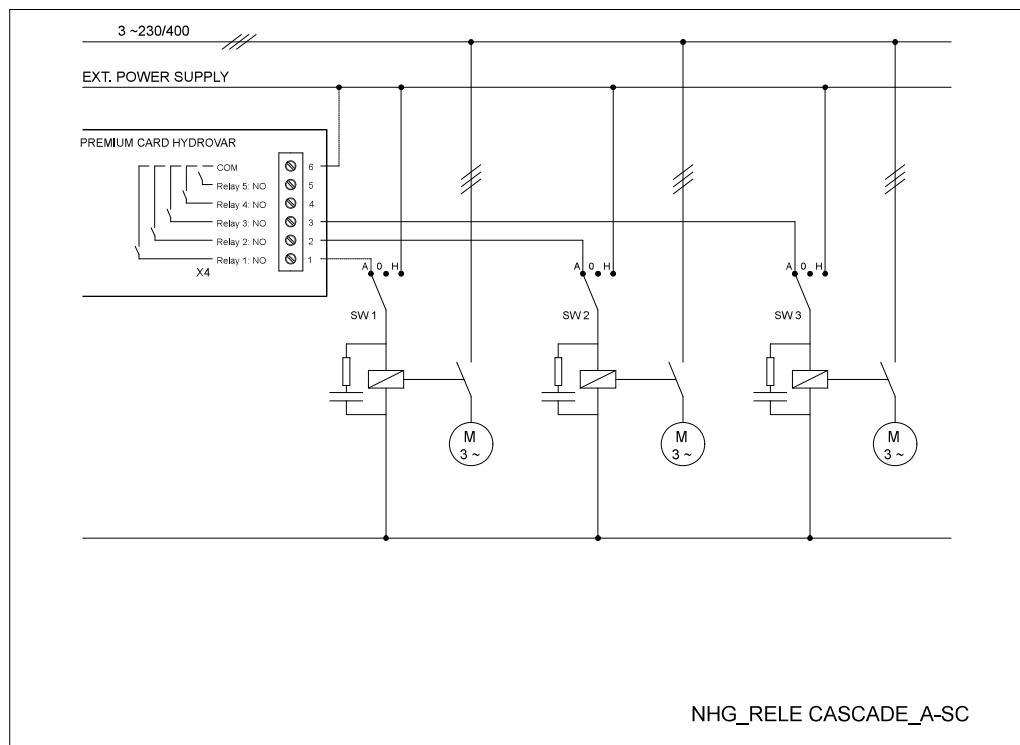
**X4**

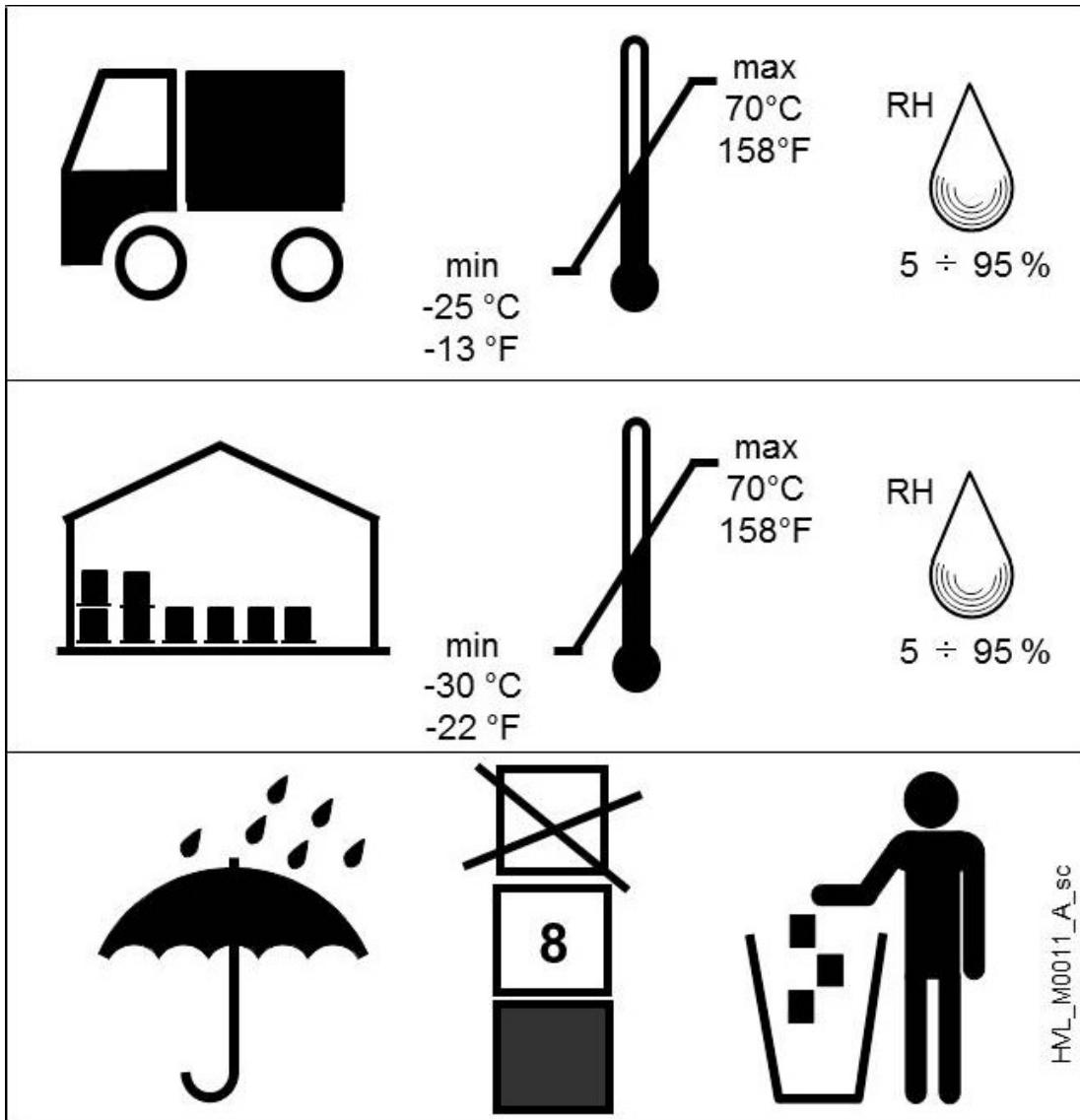
12	—	Ground for external sensor 4
11		Actual value current / voltage input sensor 4
10	+24VDC	Power supply for external sensor 4
9	—	Ground for external sensor 3
8		Actual value current / voltage input sensor 3
7	+24VDC	Power supply for external sensor 3
6	—	Ground for analog output signal 2
5		Analog output signal 2, 4-20 mA
4	—	Ground for analog output signal 1
3		Analog output signal 1, 0-10 VDC
2	—	Ground for configurable digital input 2
1		Configurable digital input 2

**X3**

NHG\_PREMIMUM CARD\_A\_SC

9.





**xylem**  
Let's Solve Water

Xylem Service Italia S.r.l.  
Via Vittorio Lombardi 14  
Montecchio Maggiore VI  
36075  
Italy  
Contact your supplier or local  
sales and service  
representative

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