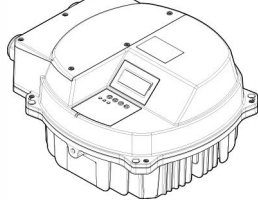


# HYDRONAR®



## H/L 2.015 - 4.220

**Avvertimento:** la presenteguidanon 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 dannare o 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 Garantiefähigkeit führen.

**AVVERTENCIA:** 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 invalidar 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 garantiedoeien vervallen.

**ADVARSSEL:** Denne vejledning erstatter ikke instruktionerne og bedieningsvejledningen. Læs håndbogen omhyggeligt, før du installerer og bruger produktet. Forkert brug af produktet kan forårsage personskade og tingsskade samt ugyldiggøre garantien.

**ADVARSEL:** Denne veiledningen erstatter ikke bruksanvisningen. Les bruksanvisningen nøye før du installerer og bruker produktet. Urtiktig bruk av produktet kan forårsake personskade og skader på eiendom, og kan oppheve garantien.

**WARNING:** Ben här guiden ersätter inte instruktions- och driftshandledoken. Läs handboken noggrant innan du installerar och börja använda produkten. Felaktig användning av produkten kan orsaka personskador och skador samt upphäva garantin.

**Varoitus:** Tämä opas ei korvaa asennus- ja käyttöohjeita. Lue ohjeet huolellisesti ennen tuotteen asennamista ja käyttämistä. Tuotteen virheellinen käyttö voi aiheuttaa tuurinvammansekä vahinkoja ja voi johtaa takuun mitätöymiseen.

**VIÐVARNING:** Þessi leiðarvísir kemur ekki í staðinn fyrir kennslu- og vinnuhandbókina. Lesu handbókina vandlega áður en varan er sett upp og hún notuð. Röng notkun vörunnar getur valdið líkamstjórni og skemmdum og getu gildið ábyrgðina.

**HOIATUS:** See juhend ei asenda juhiseid ega kasutusjuhendit. Enne toote paigaldamist ja kasutamist lugege see kasutusjuhendit hoolikalt läbi. Toote vale kasutamine võib põhjustada kehavigastusi, tekitada varalist kahju ning lõpetada garanti kohustus.

**BRÛÐNÁÐJUMS:** Þis notastjórnirgúðingurinn er leiðsáðan rokasgrámu. Þins isrárdógrúma útséðissáðanun smártoðanus uznangit úrísæt 08 rokasgrámu. Neparatsáir- stráðgrúma smártoðanus var bíð þar öðlun ífóku veivanginu gúðana va boðgrúmu, ká áfr gartúnas anúsáana.

**SPÛJIMAS:** šis vadovas nepakeičia instrukcijų, ir naudojamo vadovo. Prieš montuojami ir naudodami gamini, atidžiai perskaitykite vadova. Netinkamai naudojant gamini, kyla traumų ir sugadinimo pavojus, taip pat gali būti anuliuota garantija.

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

**POZOR:** Tato příručka nemaházuje provozní příručku, ani návod k obsluze. Před instalací použítm výrobku musí příručku pozorně přečíst. Nesprávné použití výrobku může vést k úrazu a poškození a mohlo bymizita následok zrušení 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 használataszemélyi sérülést vagy károsodást okozhat, valamintsemmisé teheti a jótállást.

**AVERTISMENT:** acest ghid nu înlocuiește instrucțiunile și manualul de funcționare. Înainte de a instala și utiliza produsul, citiți cu atenție manualul. Utilizarea necorespunzătoare a produsului poate cauza zăvătămări sau poștărele și deteriorări și poate anula garanția.

**ПРЕДУПРЕЖДЕНИЕ:** Този наръчник не заменя ръководството за инстtуция и работа. Прочетете ръководството внимателно, преди да монтирате и. Неправилната употреба на продукта може допривести на ранявания и пощадити, и може да не направи гарантията му новата две.

**OPZORLO:** Ta príručka ne nadomestí návody za uporabo in príručica za upravljanje. Pred namestitvijo in uporabo naprave natančno preberite príručnik. Nepravilna uporaba zmžni garancijo.

**UPOZORENJE:** Ova priručnik ne zamjenjuje priručnik s uputama i priručnik za uporabu. Pažljivo pročitate priručnik prije instalacije i korištenja proizvoda. Nepravilno korištenje proizvoda može uzrokovati ozljede i oštećenja te može poništiti jamstvo.

**UPOZORENJE:** Ova priručnik ne zamjenjuje uputstva i operativni priručnik. Pažljivo pročitate priručnik pre instalacije i korištenja proizvoda. Nepravilno korištenje proizvodamozže uzrokovati teške povrede i oštećenja i može poništiti garanciju.

**ΠΡΟΕΙΔΟΠΟΙΗΣΗ:** Αυτός ο οδηγός δεν αντικαθιστά την οδηγία και το εγχειρίδιο λειτουργίας. Διαβάστε προσεκτικά το εγχειρίδιο, πριν από την εγκατάσταση και τη χρήση του προϊόντος. Η μη εσβούνημένη χρήση του προϊόντος, μπορεί να προκαλέσει τραυματισμούς και ζημιές σε κτίρια, υφιστάμενες, και περιβάλλοντα που υπάρχουν.

**UVAR!** Bu kitavaz kullanim talimatı veya kullanım kılavuzunu yerine geçmez. Ürünü monte etmeden ve kullandandan önce bu el kitabını dikkatlice okuyun. Ürünü yanlış kullanış kullandığınız şekilde kullanılması ve yanlış hasarına ya da zıabınlığıdır garanti ve deperis kilabir.

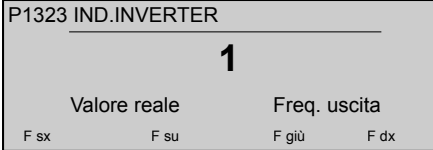
**ПРЕДУПРЕЖДЕНИЕ:** Данное руководство не заменяет инструкцию по эксплуатации. Перед установкой и эксплуатацией данного изделия необходимо внимательно ознакомиться с настоящим руководством. Ненадлежащее использование изделия может привести к производственным травмам и повреждению имущества, а также к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

**ПОПЕРЕЖДЕНИЯ:** Даной пособие не заменяет инструкцию по эксплуатации. Пот рiяно уважно прочитать это пособие перед использованием и та використання виробу. Ненадлежа використання виробу може привести до виробничих травм та пошкоджень, а також до втрати гарантії.

**ÞÝ:** Þessi leiðarvísir er ekki notað til að endurskipta leiðsúgnunarguide og notastjórnirgúðingum. Þins isrárdógrúma útséðissáðanun smártoðanus uznangit úrísæt 08 rokasgrámu. Neparatsáir- stráðgrúma smártoðanus var bíð þar öðlun ífóku veivanginu gúðana va boðgrúmu, ká áfr gartúnas anúsáana.

**ÞÝ:** Þessi leiðarvísir er ekki notað til að endurskipta leiðsúgnunarguide og notastjórnirgúðingum. Þins isrárdógrúma útséðissáðanun smártoðanus uznangit úrísæt 08 rokasgrámu. Neparatsáir- stráðgrúma smártoðanus var bíð þar öðlun ífóku veivanginu gúðana va boðgrúmu, ká áfr gartúnas anúsáana.





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

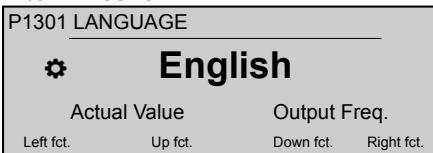


### 1.1 Startup checklist

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

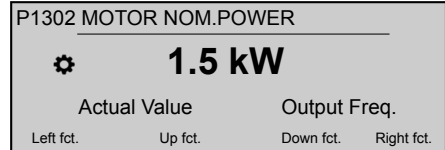
### 1.2 Submenu M1300

#### P1301 LANGUAGE



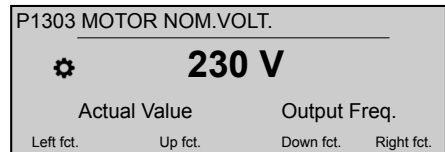
This parameter selects the display language.

#### P1302 MOTOR NOM.POWER



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

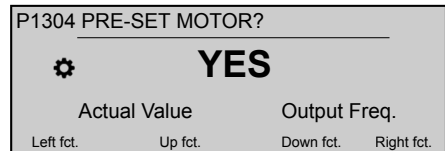
#### P1303 MOTOR NOM.VOLT.



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

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

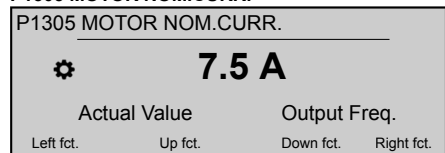
#### P1304 PRE-SET MOTOR ?



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.




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> |
|-------------------------|-------------------------|-----------------------------|
| P225 <b>RAMP 3</b>      | 70 sec                  | 90 sec                      |
| P230 <b>RAMP 4</b>      | 70 sec                  | 90 sec                      |
| P250 <b>MIN.FREQ.</b>   | 20 Hz                   | 25 Hz                       |
| P315 <b>HYSTERESIS</b>  | 80%                     | 90%                         |
| P410 <b>CONF.SENSOR</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      Output Freq.

Left fct.      Up fct.      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      Output Freq.

Left fct.      Up fct.      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 Serial** or **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      Output Freq.

Left fct.      Up fct.      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      Output Freq.

Left fct.      Up fct.      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      Output Freq.

Left fct.      Up fct.      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      Output Freq.

Left fct.      Up fct.      Down fct.      Right fct.

Using this parameter current date can be set.

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

Actual Value      Output Freq.

Left fct.      Up fct.      Down fct.      Right fct.

Using this parameter current time can be set.

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

Actual Value      Output Freq.

Left fct.      Up fct.      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      Output Freq.

Left fct.      Up fct.      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      Output Freq.

Left fct.      Up fct.      Down fct.      Right fct.

1.

|    |   |  |
|----|---|--|
| 26 | GX, electronic ground                     | } RS485 port 2 for external communication.<br>Modbus / Bacnet                |
| 25 | RS485 port 2: RS485-2P                    |  |
| 24 | RS485 port 2: RS485-2N                    |  |
| 23 | Ground for external fan control           | } ! External fan<br>(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              |  |

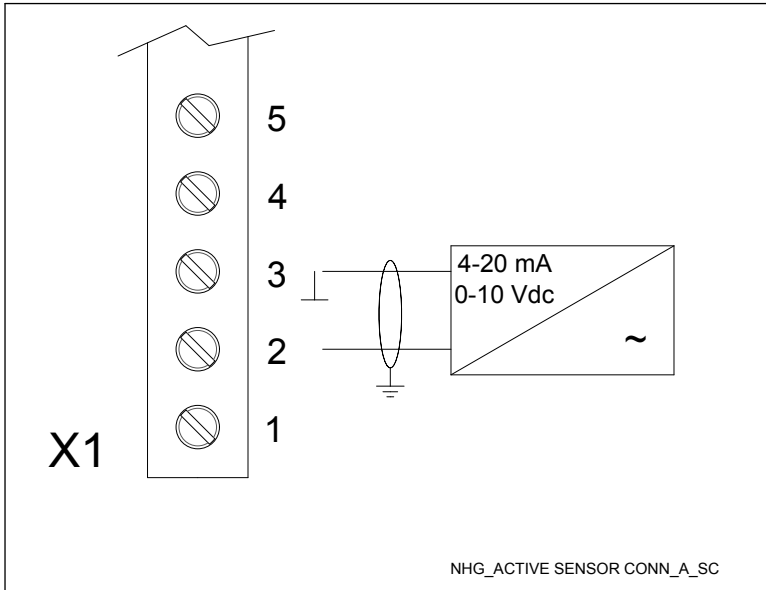
X1

|    |   |  |
|----|---|--|
| 13 | GX, electronic ground                         | } 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     |  |

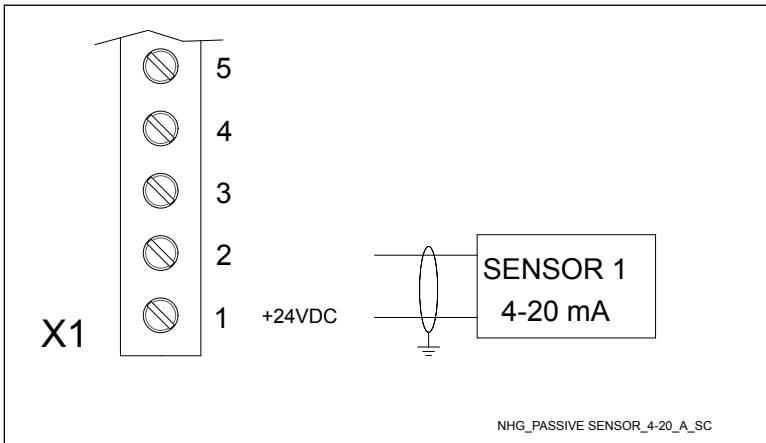
X1

NHG\_DIGIT\_ANALOG\_INPUT\_X1\_A\_SC

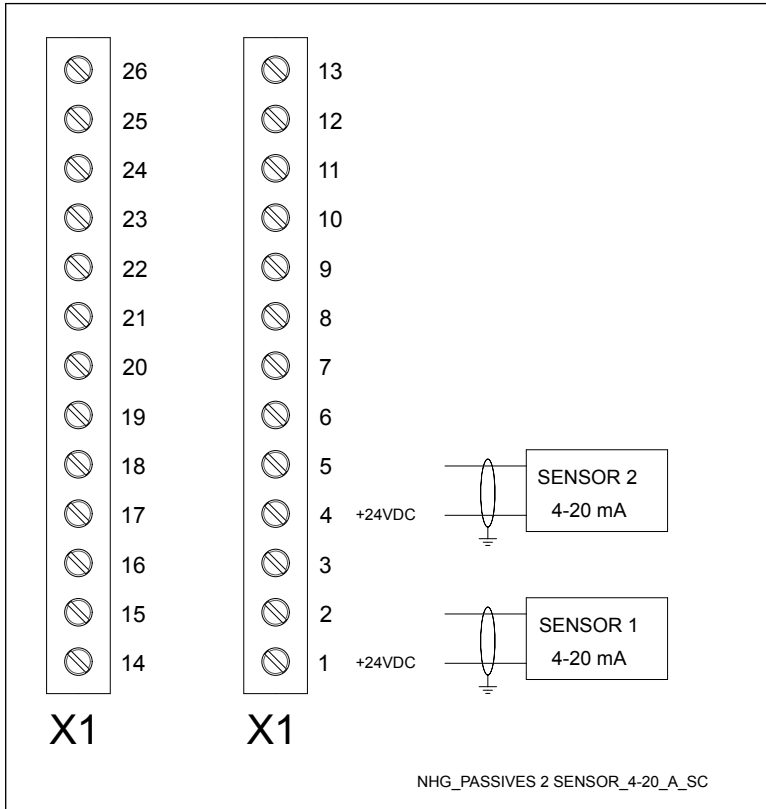
2.



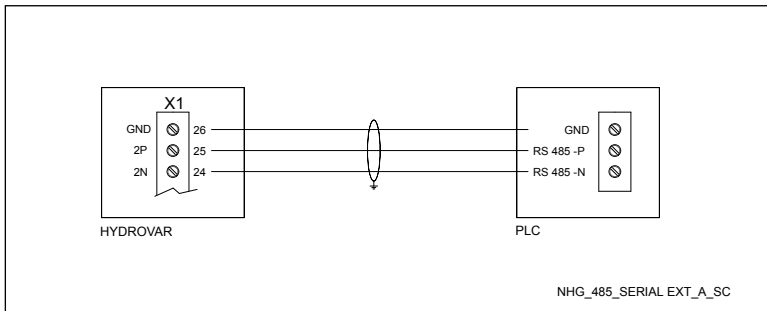
3.



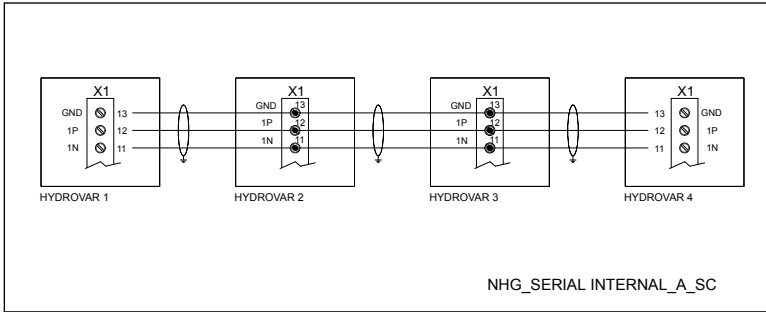
4.



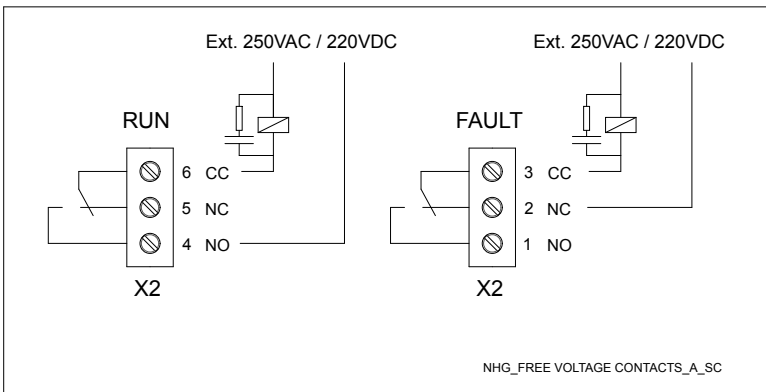
5.



6.



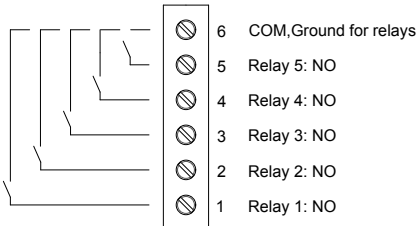
7.



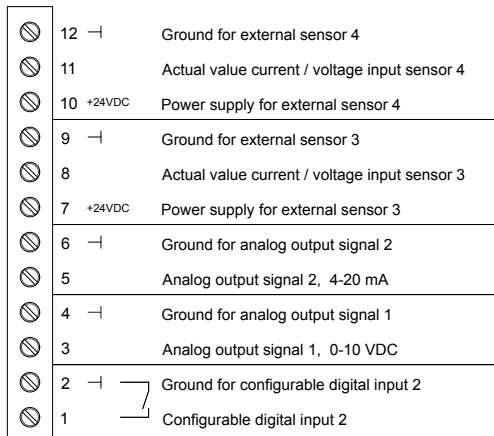


8.

## PREMIUM CARD HYDROVAR



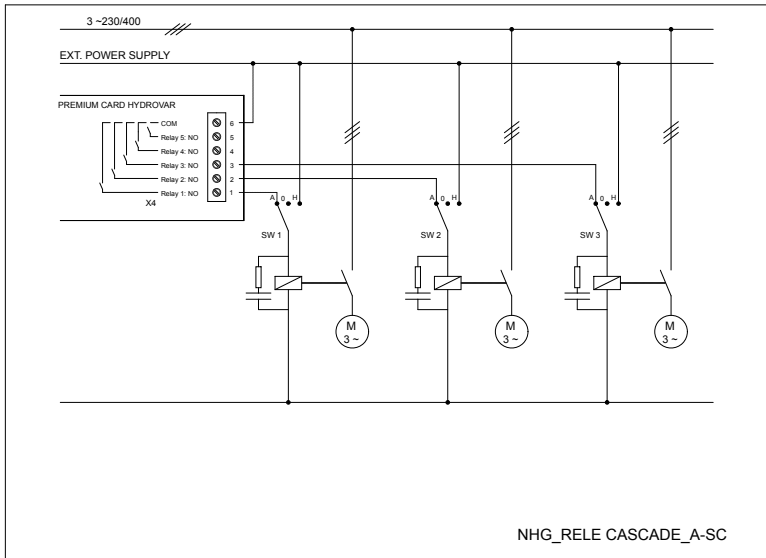
**X4**

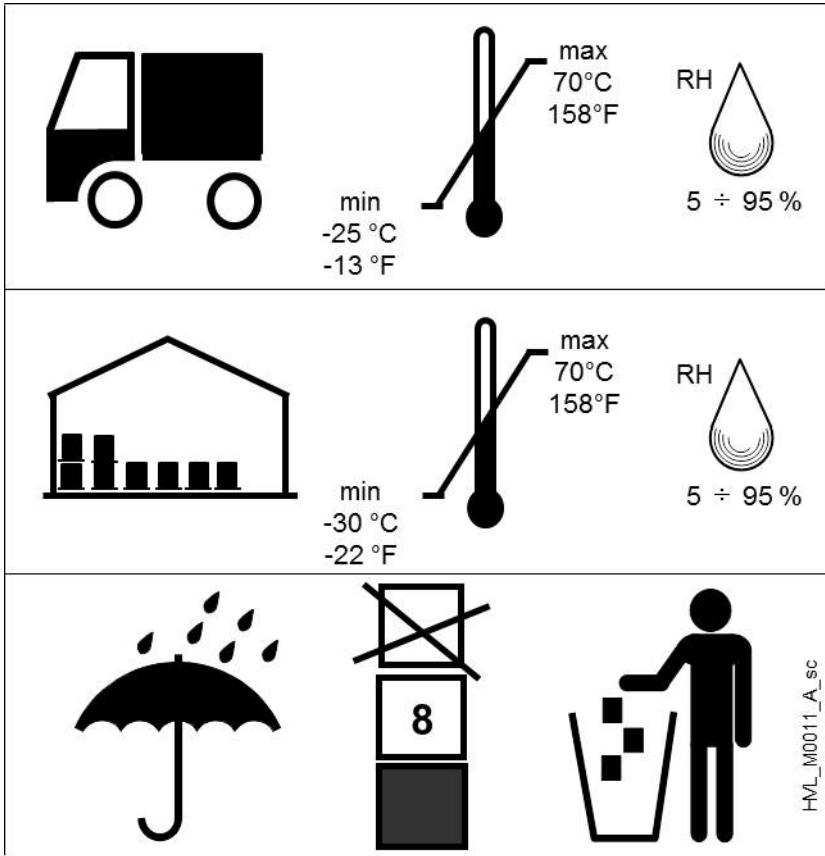


**X3**

NHG\_PREMIMUM CARD\_A\_SC

9.





HML\_M0011\_A\_sc

**xylem**  
Let's Solve Water

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