

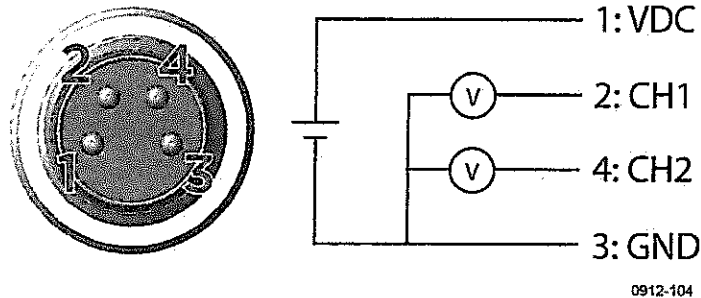
# Wiring

For a secure connection to the probe, connect to the 4-pin M8 connector using a threaded connector.

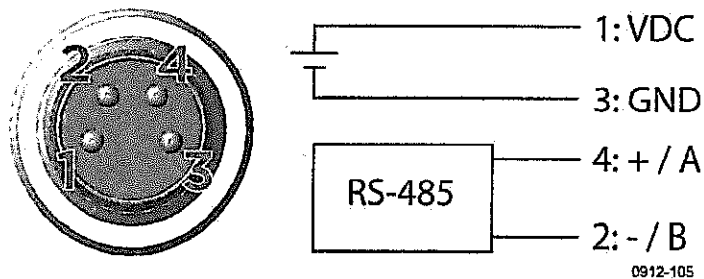
The grounding method depends on the probe and the installation type. See Table 5 below.

**Table 5 Grounding Methods**

Probe	Grounding method
HMP63 and HMP113	<p>It is recommended to use a shielded cable and connect the shield to ground.</p> <p>In the shielded cables supplied by Vaisala, the threaded connector connects the shield to the probe housing.</p>
HMP60, HMP110, HMP110T, HMP110REF	<p>There are two ways to ground the probe depending on installation type. Choose only one of these ways:</p> <ul style="list-style-type: none"> <li>- Grounding is provided by the metal cover of the probe. If using shielded cables, shield is NOT connected to ground.</li> <li>- A shielded cable is used, and the shield is connected to ground. In the shielded cables supplied by Vaisala, the threaded connector connects the shield to the probe housing.</li> </ul>



**Figure 20 Wiring of Analog Output**



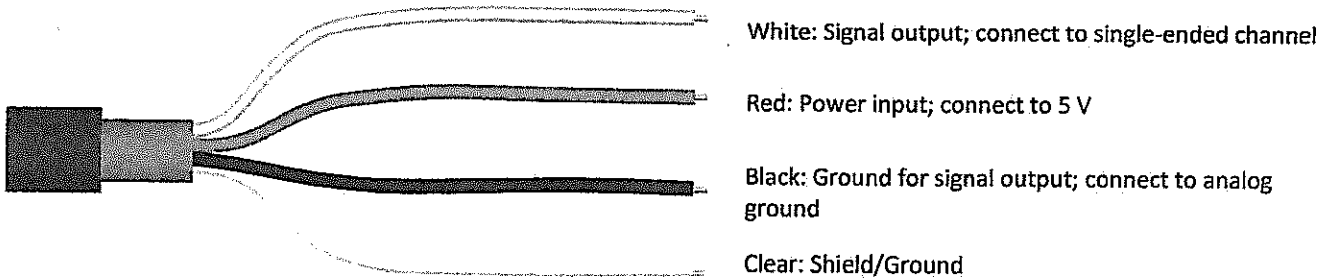
**Figure 21 Wiring of Digital Output**

## OPERATION AND MEASUREMENT

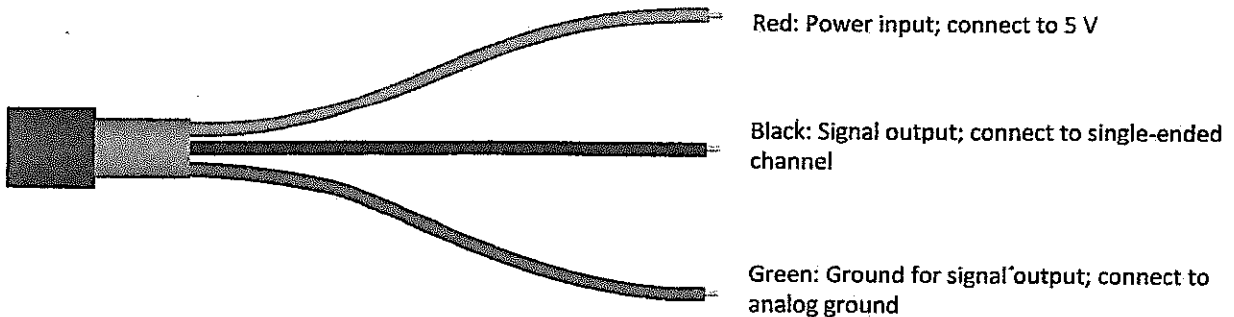
Connect the sensor to a measurement device (meter, datalogger, controller) capable of inputting 5 V DC, and measuring and displaying or recording a millivolt (mV) signal (an input measurement range of approximately 100-4800 mV is required to cover the entire pressure range of the sensor). In order to maximize measurement resolution and signal-to-noise ratio, the input range of the measurement device should closely match the output range of the barometric pressure sensor. **DO NOT connect the black wire to a power source; applying voltage may damage the sensor.**

**VERY IMPORTANT:** Apogee changed all wiring colors of our bare-lead sensors in March 2018. To ensure proper connection to your data device, please note your serial number and then use the appropriate wiring configuration below.

### Wiring for SB-100 Serial Numbers 2405 and above



### Old Wiring for SB-100 Serial Numbers range 0-2404



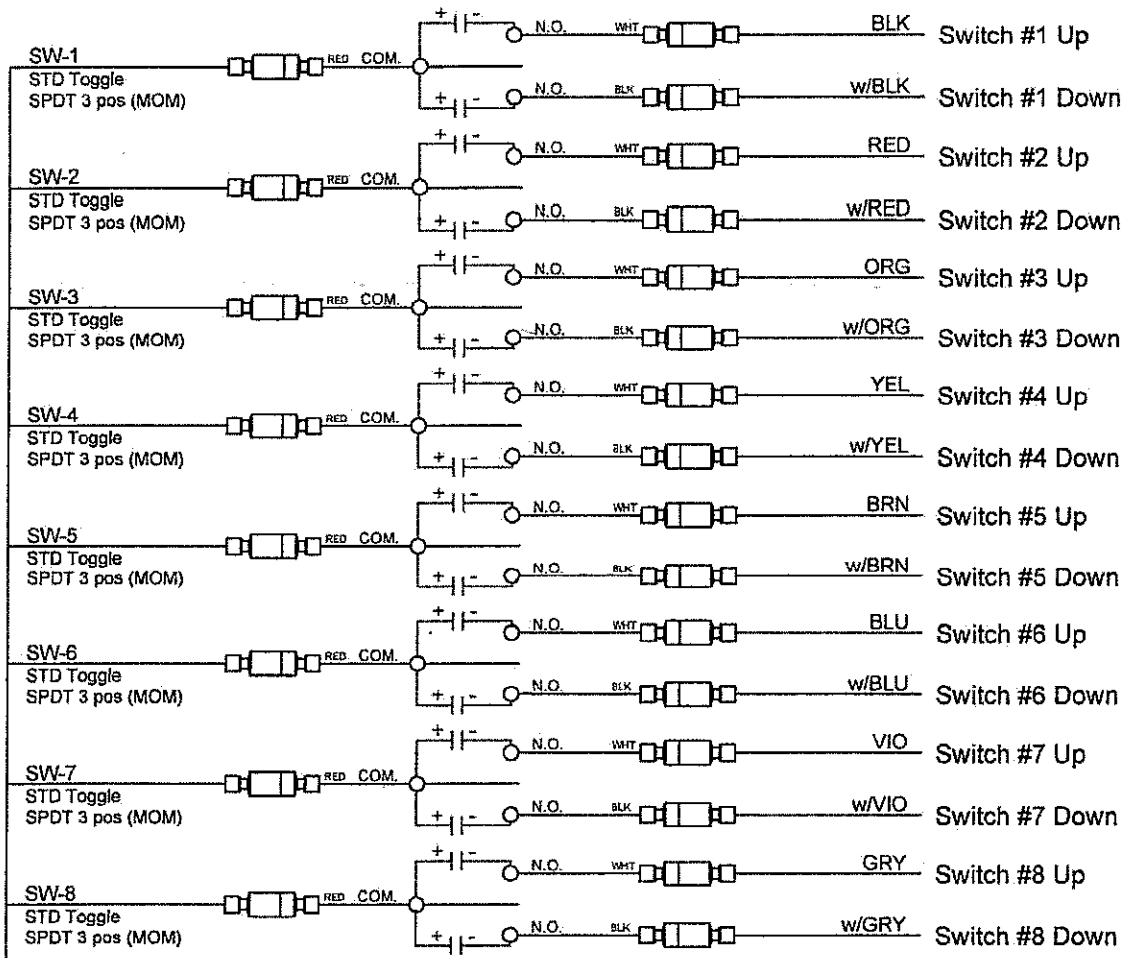
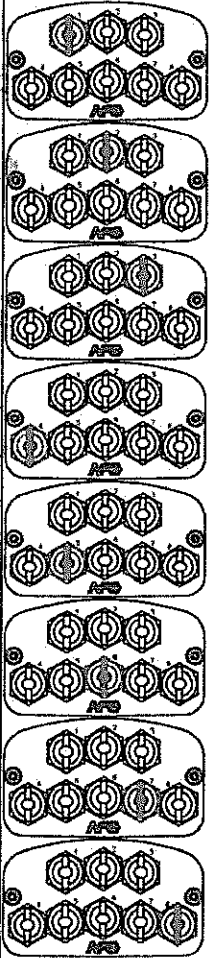
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
------	-----	-------------	------	----------

Note:

1-Cyber-Tech, Inc. Proposed Handy-Grip® wiring to be APPROVED by the customer prior to manufacture and installation for operator use.

From Box  
to Blk  
to Blk  
MAST Side  
MAST W/W  
S/W  
1/4  
etc

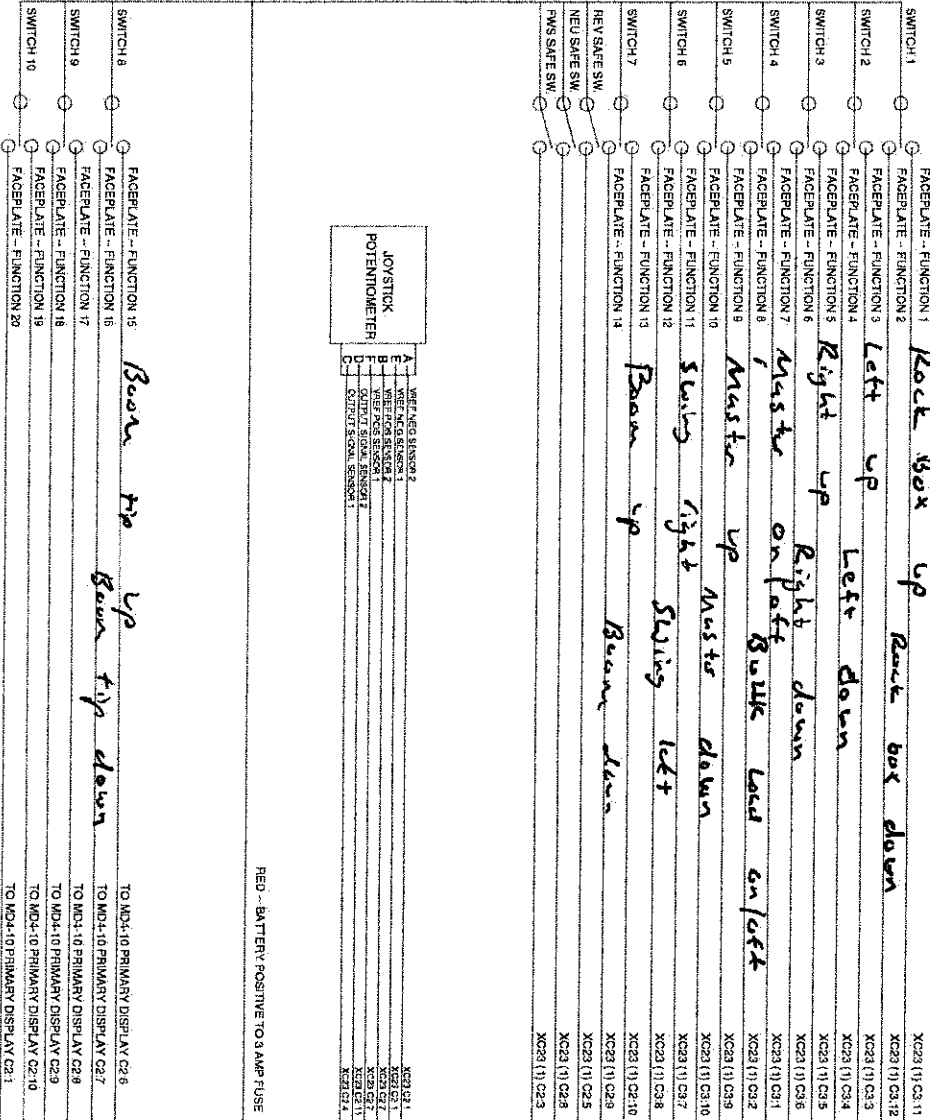


**CAUTION:** Metal Handle MUST Be Grounded For Safe Operation!

GRN Ground -  
WHT Common +  
(30 vDC 5amp Max)

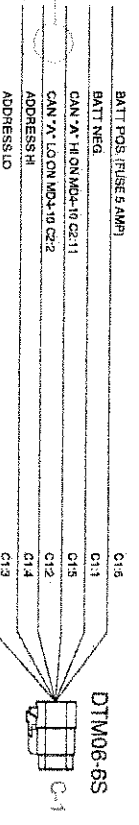
<b>Cyber-Tech, Inc.</b> P.O Box 23801 Portland, Or 97281-3801  <b>1.800.621.8754</b>  <b>www.cyber-tech.net</b>	<b>8601-RB Handy-Grip</b> (8Tog w/Boots)			
	<b>SCHEMATIC DIAGRAM</b>			
	SIZE	FSCM NO.	DWG NO.	REV
		503-620-8580	CTI-2022291	
	SCALE	1:1	D DOWERS	SHEET 1 OF 1

JOYSTICK HEAD



RED - BATTERY POSITIVE TO 3 AMP FUSE

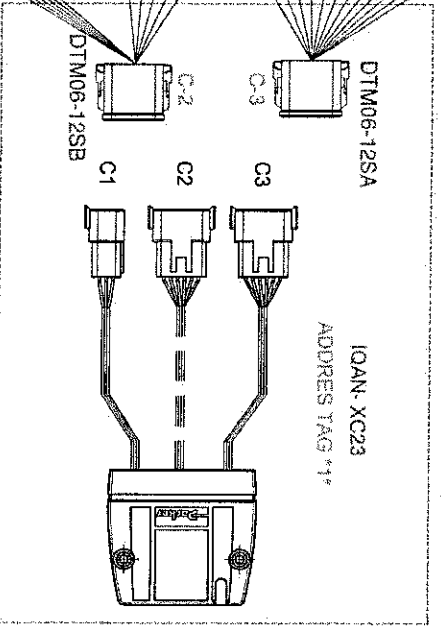
CAN POWER CABLE FOR XC23



1 TWIST PER INCH ON CAN WIRES

ZONE	REV	DESCRIPTION	DATE	APPROVED
A		PREL DWG - XC23 WIRING FOR AFE HARVESTER	19 JAN 2023	

ENCLOSURE FOR (2) XC23 MODULES



**AM-DYN-IC**  
FLUID POWER

CUSTOMER: **ADVANCED FARM EQUIPMENT**

PROJECT: **XC23 JOYSTICK WIRING ASSY**

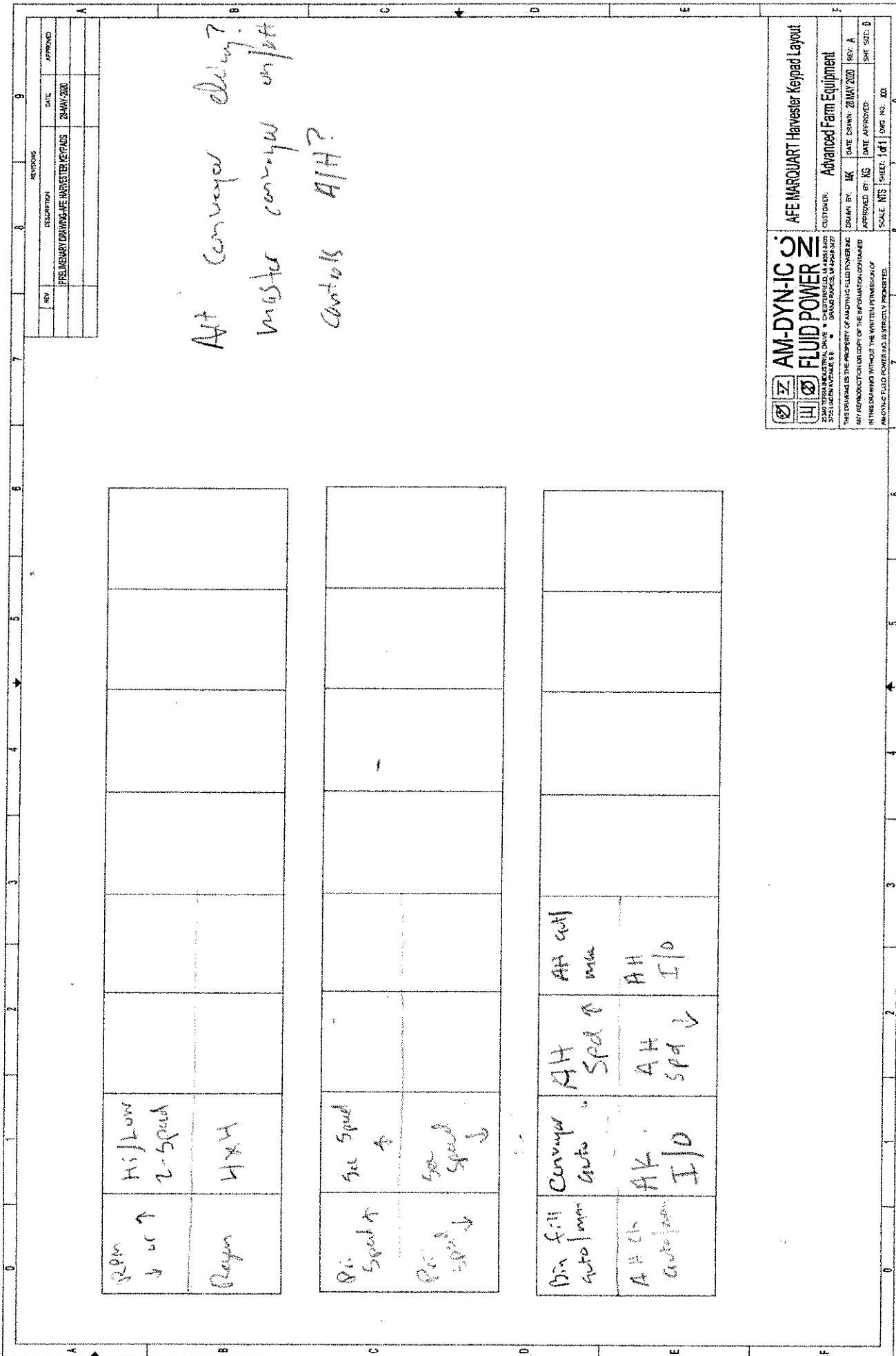
DATE DESIGNED: 19 JAN 2023

DATE APPROVED: 19 JAN 2023

SCALE: 1:1

SHEET: 1 of 1

DWG NO: 00



REV	DESCRIPTION	DATE	APPROVED
	PRELIMINARY DRAWING OF AFE HARVESTER KEYPAD	28 MAY 2020	

Alt conveyor delay?  
 Master conveyor on/off  
 Controls A/H?

AM-DYN-IC  
 FLUID POWER

2500 TRINACRISTAL DRIVE • CHICAGO, ILL. 60641  
 3751 LARKIN AVENUE S.E. • DRUMMONDVILLE, LA 70047

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 AM-DYN-IC FLUID POWER IS STRICTLY PROHIBITED.

AFE HARQUART Harvester Keypad Layout

CUSTOMER:	Advanced Farm Equipment
DRAWN BY:	AK
DATE DRAWN:	28 MAY 2020
REV:	A
APPROVED BY:	KG
DATE APPROVED:	
SCALE:	N/S
SHEET:	1 of 1
DWG. NO.:	00

Case 100

CASE DRAIN

REVERSE

FORWARD

CASE FLUSH

PLANT

BB-6 (FRONT G.D.)

REAR SIDE

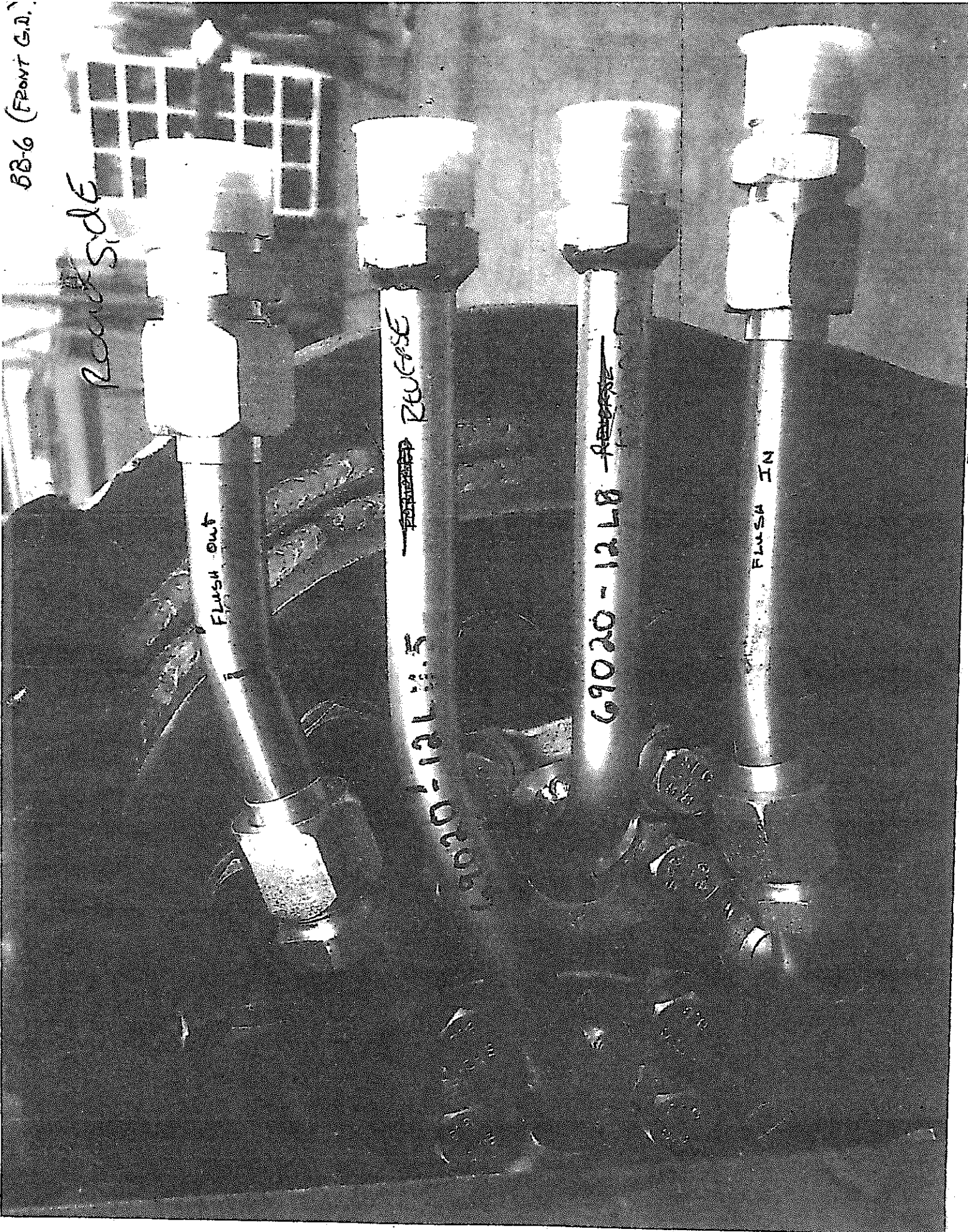
FLUSH OUT

~~REAR SIDE~~

69020-12L8

69020-12L8

FLUSH IN



## 6.2 2-Position Control

This 2-position hydraulic control solenoid valve will allow two blade pitch positions, providing airflow in the full "PUSH" and full "PULL" directions, and is suitable for applications that require Reversing only. An Auto Reverse Timer kit option is available, which will give automatic purges at variable timed intervals.

### NOTE:

**This kit does not come with hydraulic lines or fittings as these vary from machine to machine. Determine the additional materials required before starting installation.**

### 6.2.1 Electrical Installation

Please refer to Figure 1 below.

### 6.2.2 Auto Reverse Timer

1. The "T1" knob on the timer controls the length of the reversing cycle; it is adjustable from 5-100 seconds. Please note that the amount of time that the fan pitch reverses is not the same as the length of the reversing cycle.

2. The "T2" knob on the timer controls the interval time between reverse cycles and adjusts from 5-100 minutes.

3. The timer is pre-set at the Flexaire factory to be "On" for fifteen (15) seconds and "Off" for twenty (20) minutes. These are the recommended initial cycle times. Adjustment of cycle times may be necessary depending on environmental conditions or cooling requirements.

### 6.2.3 Hydraulic Valve Installation

1. Mount the solenoid valve in a suitable location on the application. If a spacer plate is included with the control kit, mount the plate between the valve and the mounting surface as required. Ensure the orifice is in Port 3. Refer to Figure 1.
2. Install a "T" fitting and attach a hydraulic line from the pressure line to Port 3 on the valve manifold.
3. Install a "T" fitting and attach a hydraulic line from the return line to tank to Port 1.
4. Attach the hydraulic line from the fan to Port 4 of the valve manifold.

Install Diagram for 2-Position Control with Auto Reverse Timer

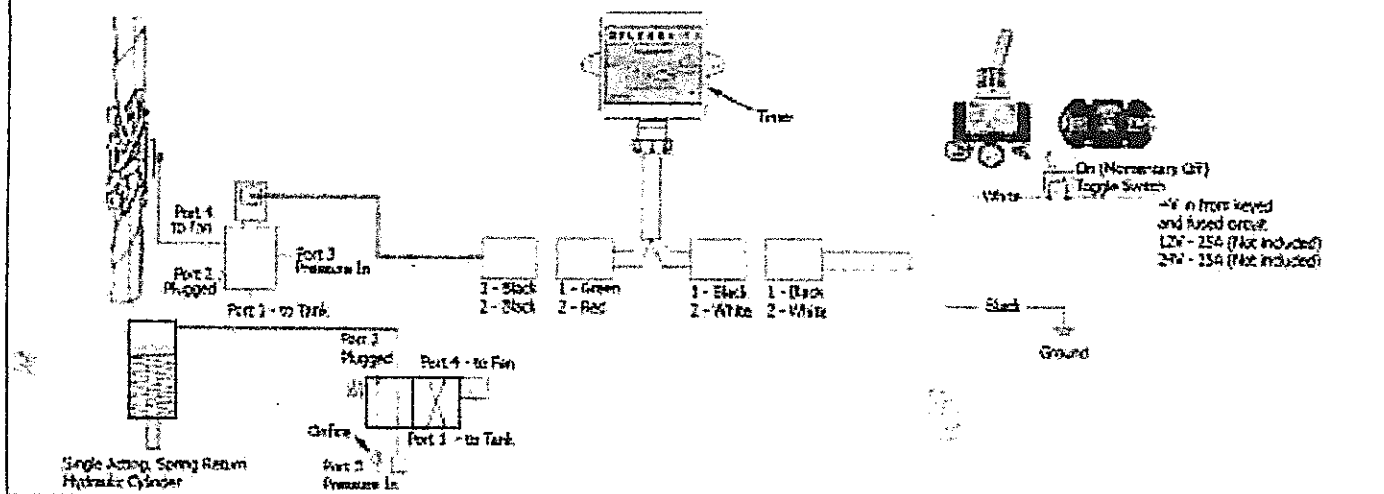


Figure 1



WK

**INSTALLATION AND REMOVAL INSTRUCTIONS FOR B-LOC® WK RIGID COUPLING**

Please follow these **INSTALLATION AND REMOVAL INSTRUCTIONS** carefully to ensure proper performance of this B-LOC® unit.

**Ⓢ WARNING Ⓢ**

When installing or removing B-LOC® products, always adhere to the following safety standards:

1. Be sure that the system is de-energized using proper lockout/tagout procedures.
2. Wear proper personal protective equipment.

**INSTALLATION**  
(Refer to Figure 1)

B-LOC® WK Rigid Couplings are supplied ready for installation. For increased torque transmission, see *Special Considerations*.

**Important:** Never tighten locking screws before shaft installation, as the WK Rigid Coupling inner ring (3) can be permanently deformed even at relatively low tightening torques.

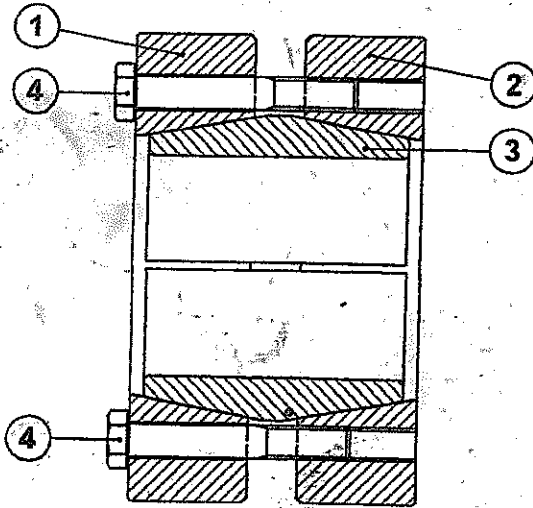


Figure 1

1. Using a non-petroleum based solvent, carefully clean shafts of any lubricants prior to mounting coupling on shafts. *This step is critical, as any contaminants on the shafts may alter the performance of a B-LOC® WK Rigid Coupling connection.*
2. Center coupling over shaft ends. Hand-tighten three or four equally spaced locking screws (4) assuring outer collars (1, 2) of WK Rigid Coupling are parallel. Hand-tighten remaining locking screws.
3. Use a torque wrench set to the overtorque valued listed in the chart. This value is ~5% higher than specified install torque, (M<sub>a</sub>). Tighten locking screws in either a clockwise or counterclockwise sequence, using approximately 1/4 (i.e., 90°) turns (even if initially some locking screws require a very low tightening torque to achieve 1/4 turns) for several passes until 1/4 turns can no longer be achieved.
4. Continue to apply overtorque for one to two more passes. This is required to compensate for a system-related relaxation of locking screws since tightening of a given screw will always relax adjacent screws. Without overtorquing, an infinite number of passes would be needed to reach specified install torque.
5. Reset torque wrench to specified install torque (M<sub>a</sub>) and check all locking screws. No screw should turn at this point, otherwise repeat Steps 4 and 5.

**REMOVAL**  
(Refer to Figure 1)

**Ⓢ WARNING Ⓢ**

Prior to initiating the following removal procedure, check to ensure that no torque or thrust loads are acting on the WK Rigid Coupling, shaft or any mounted components.

Loosen all locking screws in several stages by using approximately 1/2 turns, following either a clockwise or counterclockwise sequence, until the WK Rigid Coupling can be moved on the shafts. The WK Rigid Coupling will return to its original clearance fit.

**Ⓢ WARNING Ⓢ**

**DO NOT** completely remove locking screws (4) before outer collars (1, 2) are disengaged from inner ring (3). A sudden release of the outer collars involves high separating forces and could result in permanent injury or death. Be certain that outer collars are disengaged from inner ring before completely removing locking screws. Refer to Figure 1.

**REINSTALLATION OF WK RIGID COUPLINGS**

In relatively clean operating conditions, WK Rigid Couplings can be reused without prior cleaning. WK Rigid Couplings used under severe conditions, however, require thorough cleaning. Relubricate screws and tapers with Dow Corning® Molykote® G-n Metal Assembly Paste or equivalent. Lightly coat the remainder of the unit with standard machining oil. Upon doing so, install following **INSTALLATION** portion of this document.

**SPECIAL CONSIDERATIONS**

If your application requires increased torque transmission and/or thrust, in addition to using a non-petroleum based solvent to clean the shafts (as stated in step 1), the bore of the WK Rigid Coupling needs to be cleaned with a non-petroleum based solvent to produce an oil free connection. This in turn will result in up to a 20% increase in M<sub>t</sub> and Th performance values.

**LOCKING SCREW SIZES & SPECIFIED INSTALL TORQUE M<sub>a</sub>**

Screw Type	M6	M8	M10	M12
Overtorque (ft lb)	9.1	23	46	78
Install Torque (ft lb)	8.7	22	44	74
Wrench Size Across Flats (mm)	10	13	16	18

These Screw Sizes Are Installed on the Following WK Series:

- M6 – WK 15, 20, 25, 30
- M8 – WK 40, 50, 60
- M10 – WK 70
- M12 – WK 80, 90, 100

Contact Fenner Drives Applications Engineering at [ae@fennerdrives.com](mailto:ae@fennerdrives.com) for additional details.

*Airhead Coupler*

**Fenner Drives**  
[www.fennerdrives.com](http://www.fennerdrives.com)

For technical assistance, please call +1-717-666-2421  
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# Serial Commands

Handbuchsbeleg / Commandes Serie / シリアルコマンド / 串口命令

S	SEND	??
Stop the outputting	Output readings once	Device information in POLL mode
Datenausgabe stoppen	Einmalige Datenausgabe	Geräteinformationen im Pollingbetrieb
Arrêter la sortie continue	Sortir une seule donnée	Informations sur l'instrument en mode POLL
連続出力の中止	測定値を出力	機器に関する情報を出力 ( POLLモード用 )
停止輸出	发送	POLL模式的设备信息

# Terminal Settings

Handbuchsbeleg / Einstellungen / ターミナルセッティング / 终端设置

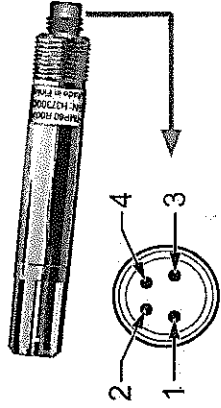
None	8	1	None
Parity	Data bits	Stop bits	Flow control
Parität	Datenbits	Stoppbits	Flusssteuerung
Parité	Bits de données	Bits d'arrêt	Contrôle de flux
パリティ	データビット	ストップビット	フロー制御
奇偶	数据位	停止位	流量控制

# VAISALA

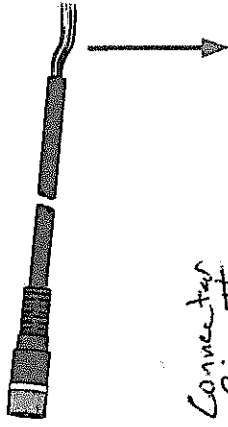
Vaisala Humidity and Temperature Probes  
HMP60 and HMP110 Series

## HMP60 / HMP110 / HMP110T

Wiring / Verdrahtung / Câblage / 配線 / 接线



4-pin M8 Male



Connector  
Pin #

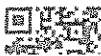
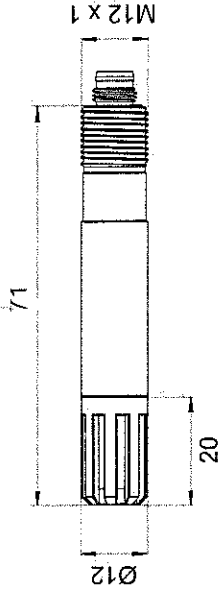
### HMP60 / HMP110 / HMP110T

1	5 ... 28 VDC (V <sub>out</sub> 0 ... 1 / 0 ... 2.5 V)	#1	Brown / Braun / Marron / 茶 / 褐
2	0 ... 28 VDC (V <sub>out</sub> 0 ... 5 / 1 ... 5 V)	#3	White / Weiß / Blanc / 白 / 白
3	Channel 1: RH / Td / T 0 ... 1 / 2.5 / 5 V, 1 ... 5 V	#2	Blue / Blau / Bleu / 青 / 藍
4	Channel 2: RH / Td / T 0 ... 1 / 2.5 / 5 V, 1 ... 5 V	#4	Black / Schwarz / Noir / 黒 / 黒



HMP110T: No output on channel 2.  
HMP110T: Keine Ausgabe über Kanal 2  
HMP110T: Aucune sortie sur le canal 2  
HMP110T: チャンネル2に出力がありません  
HMP110T: 通道2无输出

Dimensions / Abmessungen / Dimensions / 寸法 / 尺寸



www.vaisala.com/manuals



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