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RALSPEED

WOL 3K OVERLOAD SYSTEM

INSTALLATION AND TECHNICAL INSTRUCTIONS

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SOFT STARTS * VARIABLE SPEED DRIVES * D.C. BRAKING * CUSTOM PANELS *
HIRE * SERVICE * SITE VISITS * ENERGY SURVEYS

1.0 Safety

SAFETY CONSIDERATIONS

The WOL 3K range of electronic overloads have been designed for the protection, monitoring, and data logging of AC induction motors Any safety instructions relating to installation or use of this device are described so that they can be understood by persons trained in Electrical Engineering. Such Personnel should have at their disposal the appropriate tools and test equipment to enable safe installation.

Such Personnel must obtain any particular or general permits relating to local regulations and meet any requirements regarding; *safety of personnel

*environmental protection * product disposal * packaging disposal

NOTE

The safety measures outlined must remain in force at all times. Should questions or uncertainties arise please contact your supplier.

USERS RESPONSIBILITY

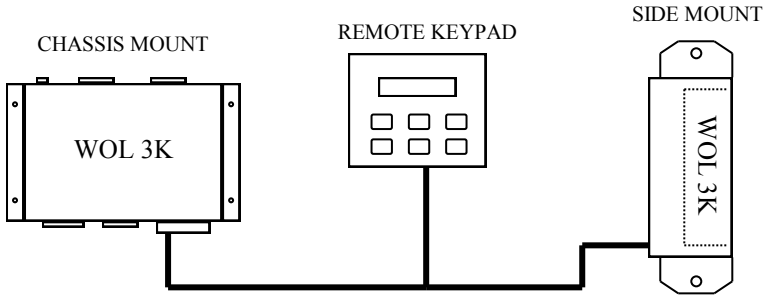
Dangerous voltages can exist within the unit always isolate the power before any service or maintenance work is carried out

- Do not MEGGER any part of the WOL unit
- Do not remove any terminal covers before isolating the power.
- Always refit any covers on the live side of the isolator

WOL 3K INSTALLATION

The WOL3K electronic overload and data logger is normally supplied in a switchgear cabinet along with other equipment to form a complete AC motor starter/ controller. The connections to the WOL unit will have already been made and the user will only have to supply mains, motor & control wiring to have a fully working motor starter.

The WOL3K unit will be installed in a switchgear cabinet in two forms either chassis mount or side/bookcase mount. The full load current of the motor can be adjusted through the remote keypad, a12 position switch or a potentiometer.



WOL-3K ENGINEERING & USB MENUS

The list below shows the structure for the **ENGINEERING MENU.** The user can access this menu from the **READY TO START** screen by entering Pin 19 or if already in another menu press the **STOP/RESET** key and scroll down and input the Pin No

SET PIN MAIN 17
SET PIN ENGR 19

DOWN KEY

CT TRANS 55

NEXT

DUTY CYCLE
STARTS PER HR 20

NEXT

LOW I IN START
CHECKING Y

NEXT

HOURS RUN
00000000 HRS

NEXT

TIME 15:02:07
DATE 11/12/2013

NEXT

SERVICE 8750 HRS

NEXT

TEMPERATURE
OFFSET -6

NEXT

I-LOG DELAY 1s
FOR I CHANGE 20%

Once the user is in this menu the first screen is showing the default Pin Nos 17 &19. The user can alter these but it is recommended that they are left at default values.

The **CT TRANS** value is set at the factory and should not be altered without consulting **Ralspeed**.

The maximum even starts per hour is 20. If this value is set to zero there will be no restrictions on the number of starts per hour.

In order to prevent a mismatch between the motor **FLC** and the setting in the **USER** menu the unit will detect any low current value and trip the unit.

To 'zero' the hours run counter press the UP & DOWN keys together for a few seconds.

The user can alter the time and date in this screen.

The user can set a service hour period for the machine being controlled so that the hours run and the service time appear in the information screens.

The temperature sensor is on the PCB and therefore gives a temperature in and around the **WOL-3K** unit, to give a reading outside a minus offset may need to be inputted.

This screen is allowing the user to set changes to the current read out in the data logger. These should not be altered without consulting your supplier

ENGINEER MENU N
USB MENU Y

NEXT

SAVE TO USB Y
LOAD FROM USB Y

To enter the **USB** menu scroll down through the menu headings and say 'yes' to **USB** and press **NEXT**.

The screen will show two options, either to save the menu settings or to load menu settings. The user must choose one of the options insert a memory stick and press the **NEXT** key.

WOL-3K MENUS PROGRAMMABLE INPUTS

This is a list of the programmable inputs available with a standard unit. The functions become active by using the on board 24v+ supply to make the input 'high' (make) or 'low' (break)

USER MENU N
OPTIONS MENU Y

DOWN KEY

PROG INPUTS Y

NEXT

PROG INPUT 1
NEXT TO VIEW

NEXT

PROG INPUT 1
EXT TRIP 1

NEXT

EXT TRIP 1 Y
TRIP DELAY 4s

NEXT

PROG INPUT 1
EXT TRIP 2

NEXT

EXT TRIP 2 Y
TRIP DELAY 4s

NEXT

PROG INPUT 1
START DELAY Y

NEXT

START DELAY
DELAY 00s

NEXT

PROG INPUT 1
LOCAL REMOTE Y

NEXT

PROG INPUT 1
EMERGENCY STOP Y

NEXT

PROG INPUT 1
RESET Y

NEXT

PROG INPUT 1
INHIBIT RUN Y

Pressing the **STOP/RESET** key takes the user back to the the screen shown opposite pressing the **DOWN** key will take the user to the programmable inputs menu. There are 5 inputs and once an input has been assigned to a function then it will not be available for any remaining inputs.
Programmable input 1 has been shown here but after setting a function pressing the **NEXT** key will take the user to Prog inputs 2 and so on.
External trip 1 relies on the input being held 'high' (24v+) for the motor to run. The user can input a trip delay which can be used to avoid nuisance tripping or to allow pressures to rise etc.

External trip 2 works opposite to Ext trip 1 in other words the input has to be maintained 'low' for the motor to run. If the input goes 'high' for longer than the delay time set the unit will trip.

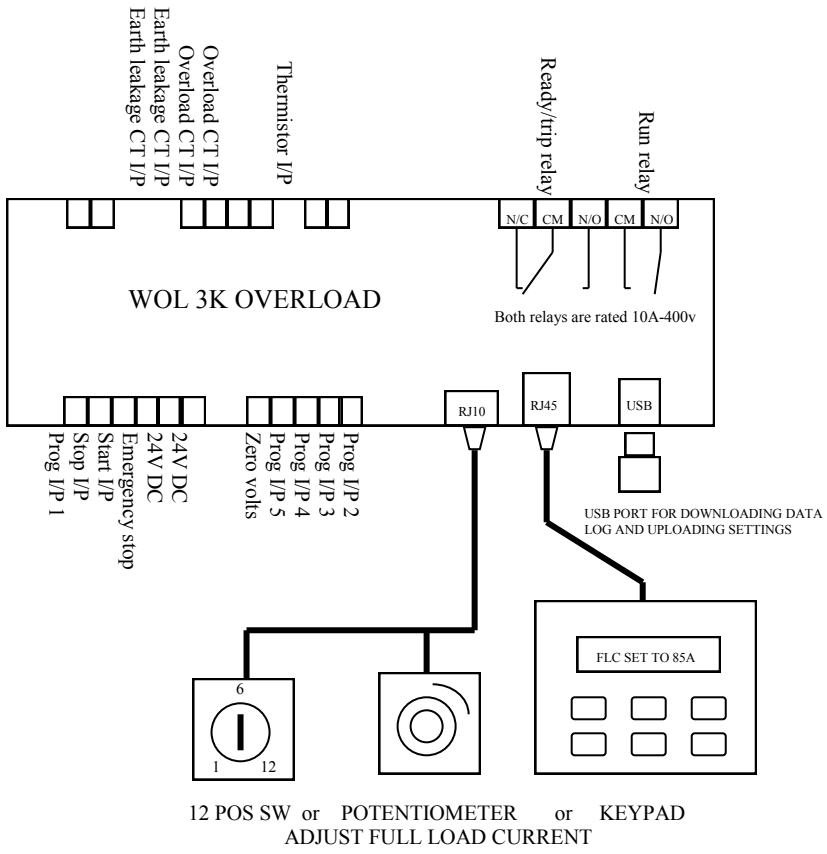
The start delay input allows the user to set a start delay time after a start command is given. When used the screen will show a count down to start. The user needs to say 'yes' to the delay and then set the delay time
The local/remote input allows the user to switch between the door mounted keypad and remote terminals for the purpose of stop/starting.
The emergency stop input should be a N/C contact using the internal 24v+ to keep the input 'high' if this input goes 'low' the screen will show EMERGENCY STOP and the unit will not allow any further starting. There is also a 'hard wired' input that needs to be linked if not used.
The user can reset any fault externally with a N/O push button or other momentary contact.
The inhibit run input allows the user to disable the starter from running whilst this input is made

TIME CLOCK & FLC ADJUST

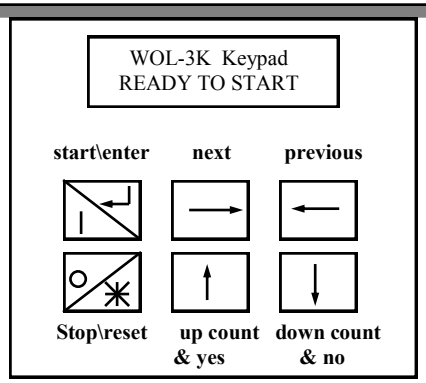
are 2 more programmable inputs but only appear when certain options are activated

2.0 Connections

The WOL 3K unit is normally supplied in a switchgear cabinet as part of a motor starter and all the connections are either pre-made or wired down to terminals for customer use. For the purposes of this manual all the connections are listed below.



LCD DISPLAY AND INFORMATION SCREENS



When power is applied and the **KEYPAD** is used to change the FLC of the motor the screen above will appear. If a 12 position switch is used to alter the FLC the screen will show –**WOL-3K Switch KW** If the FLC is being adjusted by a potentiometer then the screen will show **WOL-3K Pot KW** This shows that the unit has done a power-up check and is waiting for a start command.
At this point the user has a choice of accessing further information screens by pressing the **NEXT** key or giving the unit a start command.

TIME 10:54:50
DATE 22:11:13

NEXT

The first information screen will show the current time and date. This can be altered in the Engineering Menu if required.

FULL LOAD AMPS
SET TO 8.5A

NEXT

This screen tells the user what level the overload has been set to and is intended as a quick check that the setting matches the motor FLC

AMBIENT TEMP 18C
min max

NEXT

This screen shows the user digitally and in bar graph form the ambient temperature the starter is working in

SERVICE: EXPIRED
8750h : 450h

NEXT

The user can set a service period for his machine in the Engineering Menu and it will be displayed in this screen along with the hours run value (expired)

OPEN EVENT LOG
PRESS ENTER

ENTER

The user can open the event log from this screen and view up to 1000 events. The user has the option of viewing the events via the screen or downloading to a memory stick and viewed later.

VIEW EVENT LOG Y
STORE TO USB N

NEXT

The example shown tells the user that the unit was started at 12.06 and 54s on the 24th of September and it is event No 89.

089 STARTED
12:06:54 24/09

To exit the event log press the **STOP/RESET** key twice.

EXAMPLE

WOL-3K MENU SETTINGS USER AND OPTION MENUS

From the READY TO START screen hold down the **STOP\RESET** key for 4 seconds the display changes as shown below

ENTER PIN No 17
THEN PRESS NEXT

Use the **UP** arrow key to increment the display to **17** and then press **NEXT**

NEXT

USER MENU Y
OPTIONS MENU N

With the cursor as shown pressing **NEXT** will Show the settings in the **USER** menu

NEXT

SET O/LOAD CURVE
A B C D E

The overload curve is set at **C** as standard and unless the user is having trouble with overload trips during starting this settings should not be altered.

NEXT

START \ STOP
REMOTE /(LOCAL)

The user can choose to start and stop the motor from the door mounted keypad or from external push buttons or switches.

Pressing the **STOP/RESET** key takes the user back to the screen shown, press the **DOWN** key and **Y** will change to the **OPTIONS** menu.

USER MENU N
OPTIONS MENU Y

NEXT

THERMISTOR Y/N

In this screen the user is being asked if the Thermistor detection circuit should be activated. PTC beads should be used. N/C over temperature switches can also be used.

NEXT

U/LOAD 56% FLC
TRIP IN 2 MIN

The under load trip is designed so the user can set a level and a trip time so that it can avoid a pump running dry or used as floatless switch control. Once the current drops to the level set and the trip time is exceeded the motor will stop. The user can arrange to restart automatically using the underload reset time.

NEXT

UNDERLOAD RESET
IN 120 MINUTES

NEXT

SHEARPIN Y
LEVEL 550% FLC

Shearpin is used to detect rapid rises in current and disconnect the unit. The level can be adjusted to 800%

NEXT

AUTO RESET 1,2,3
RESET IN —S

The auto reset screen allows the user to choose to reset after a fault up to 3 times with a selectable number of seconds between each reset.

NEXT

O/L PRE-ALARM Y
LEVEL ——%

O/L pre-alarm is designed to allow the user to set a level of current to be detected and logged as an event.

NEXT

EARTH LEAKAGE Y
CT AMPS 55

The earth leakage detection system is using a commoning CT to determine any imbalance within the motor or motor cables and therefore causing ‘leakage’ to earth. The CT ratio is set on test and should not be changed. The values shown are standard factory settings but the user can alter these to suit site conditions.

NEXT

SET LEVEL 30mA
SET DELAY 5.0s