



MILK METER INTERFACE

Version - March 2010
For Software Version V1.03



Part Number - 39-0390



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About the Milk Meter Interface

The ATL Milk Meter Interface allows competitors milk meters' to link to the MicroMarque3S feeder and parlour control to bring milk yield information to the farmers fingertips.

As the cows are fed, the milk yield and stall number are transferred to the Milk Meter Interface. Since the interface is always monitoring each milk meter, the unit will automatically store the milk yield against each stall. The Milk Meter Interface is continuously communicating to the MicroMarque3S, enabling the MicroMarque3S to update the milk yield records stored against each cow.

If you want to view just the cows with a variation between the previous day's yield and the current yield - you select the percentage variation between the yields that you want and then the control will display the current yield in the Yield / Flags window and the previous days yield in the Cumulative Totals window.

The new daily yield is then added automatically to the cumulative yield for each cow, giving a total yield for each cow for the lactation so far. This can then be compared to the total feed for each cow for the lactation so far, providing a quick method of calculating the amount of feed per litre of milk.

If a PC with ATL Cowculator Feed-To-Yield or Uniform full farm management software installed in connected to the MicroMarque3S control, then all the cow records can be viewed and updated via the computer.

Features:

Current and previous day yield for cow and herd;

To date and cumulative yield for cow;

Display cows percentage variation;

Average yield for herd;

32/32 or 32/64 maximum parlour size;

Swingover parlours accommodated using ATL Swingover Switch.

Supported Milk Meters:

Fullwood / Afikim Mk1;

Gascoigne Mr2000 - Mk1 (twin display) or Mk2 (single display);

Insentec;

Nedap Memolac 2 / SureLine Milk Manager 2.

Control, Power and Data Cables and Conduit

- Cables must be kept as short as possible running directly from point to point. Cut out any excess cable rather than leaving it coiled.
- Where ever possible cables should be contained in a waterproof conduit using the correct csa cable specified in the diagrams.
- Entries must be made into the bottom of power supply or control casings but never into the top. This will invalidate the warranty.
- Strip existing cables back to bright copper before connection.
- Keep multicore cables away from other cables especially those carrying mains or heavy currents. Cross only at 90° where necessary and do not enclose in conduit with other cables.



MILK METER INTERFACE: 0

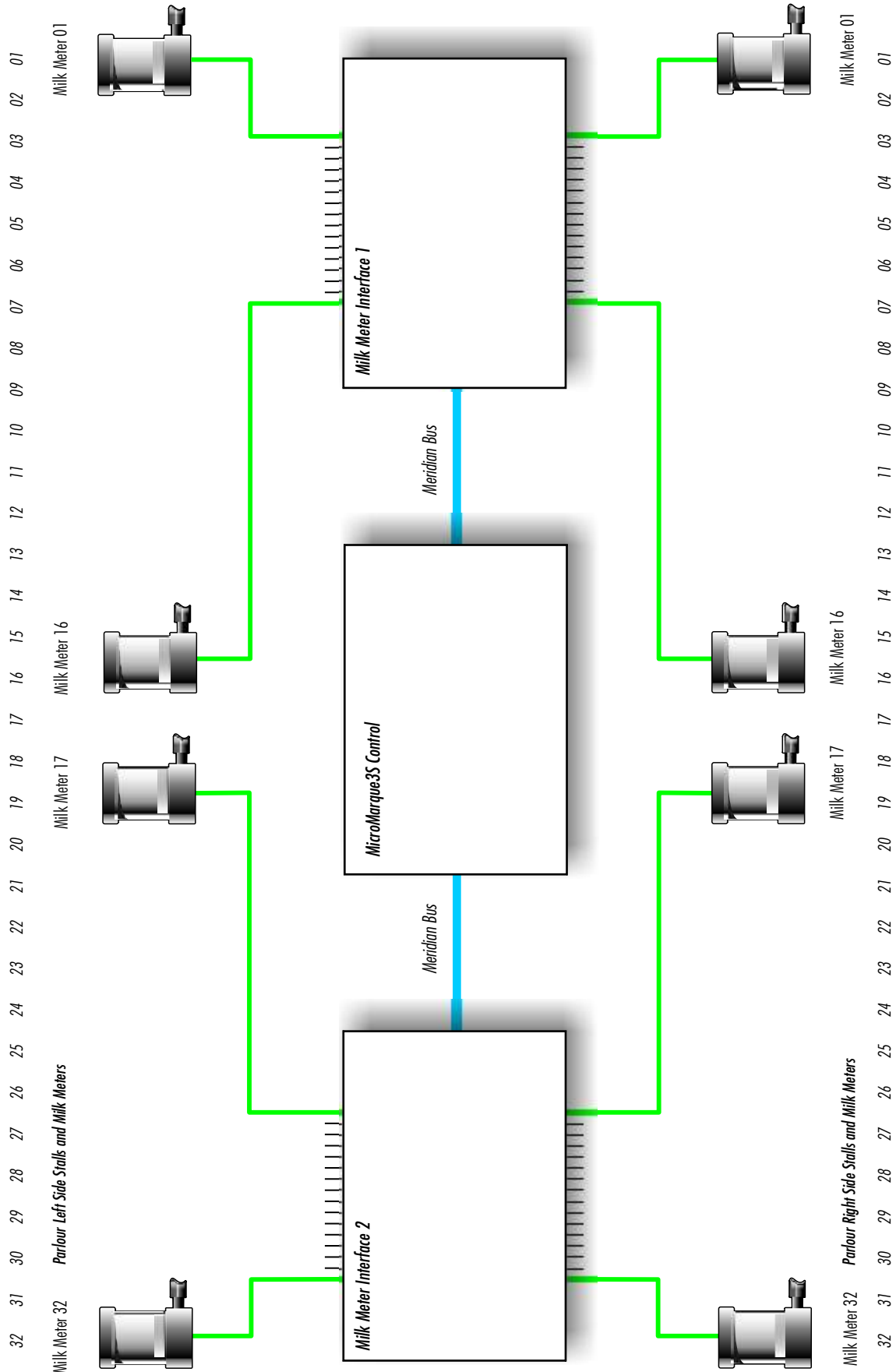
Good Installation Practice: Adopting good engineering practice during installation will avoid most problems with electronic control systems.

- Check the existing wiring carefully. Do not assume that it will be up to the required standard. It may have been extended with thinner wire and be unable to carry the current without a volt drop.
- Termination of cables in enclosures. Do not coil excess cable in enclosures. Loops are good transmitters of interference.
- Do not use a single aperture gland for several cables. Moisture can migrate through the gaps between the cables and cause damage to internal electronic components. Moisture damage caused in this way is not covered under warranty.
- Never run cables which are connected to ATL control units alongside mains cables. Even if they have been disconnected, they can still be carrying and transmitting interference.
- Do not place data or coaxial cables connected to ATL control units within existing conduits with other cables connected to other systems; especially unsmoothed power cables. This is a prime source of interference especially if connected to pulsators or feeder motors without diodes installed. NB - When a solenoid coil is switched off the reverse voltage is generally 10 times the peak supply voltage, with a 24vDC supply, this can be in excess of 300 volts.
- Interference is most likely on mains systems which exhibit volt drops when the parlour load is switched on.
- Variable speed drives are becoming very common. Make sure that they are installed to the manufacturers instructions. Screened cable must be used between the drive and any motors, if not electronic systems can be affected.
- RFID antennas are looking for signals around 130Khz. Variable speed drives often operate at frequencies around this value. Good installation of the variable speed drive circuit is essential to prevent interference.
- Mains earth supplies can be a source of interference. Check the voltage between the mains earth and the neutral. If there is a voltage above 3-4volts, there is a possibility that interference will be present. Earth problems of this nature can usually be avoided by fitting earth trips and separate earth electrode, which is isolated from the mains earth system.



MILK METER INTERFACE: 1

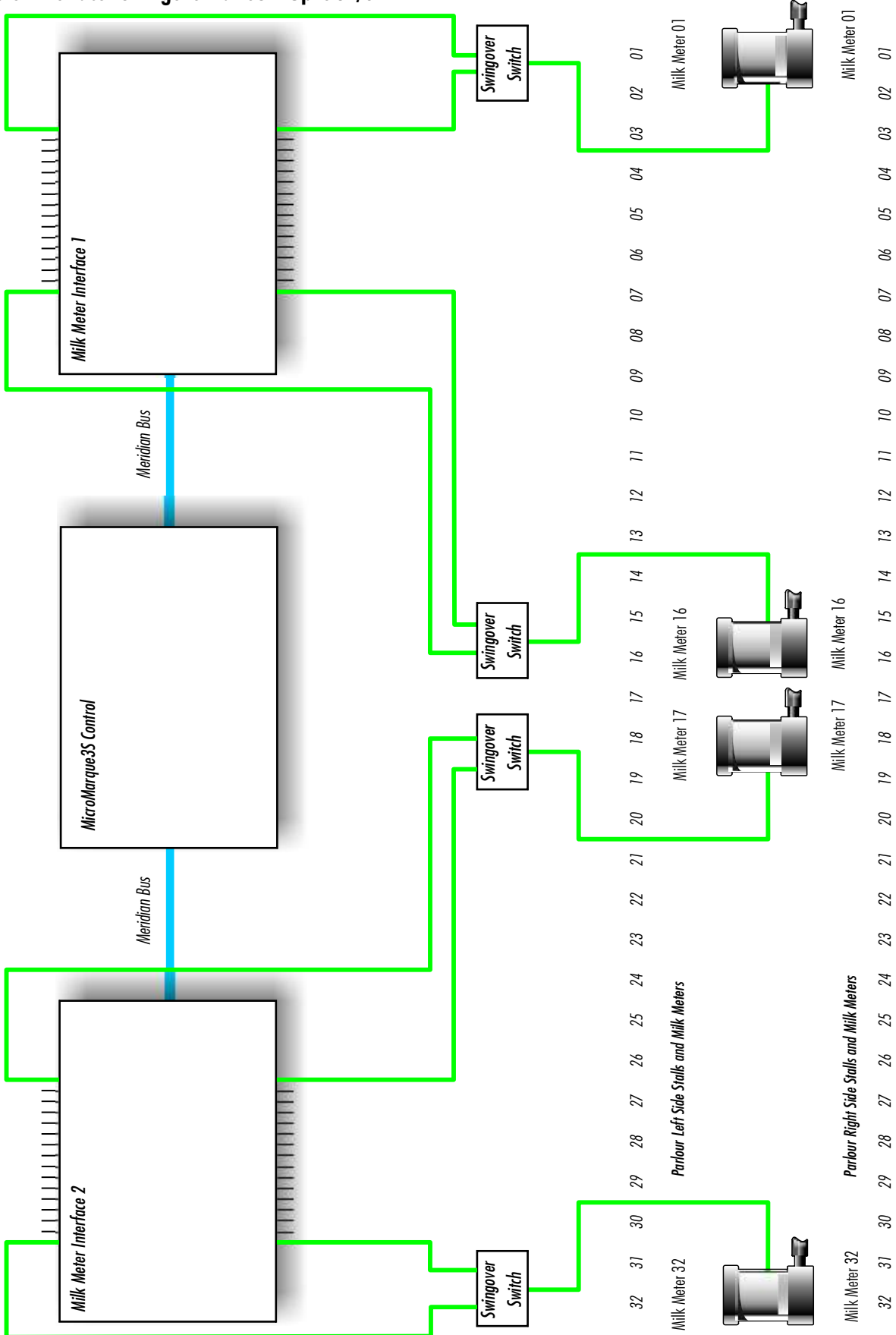
Milk Meter Interface - Standard Parlour - Up to 64/64





MILK METER INTERFACE: 2

Milk Meter Interface - Swingover Parlour - Up to 32/64

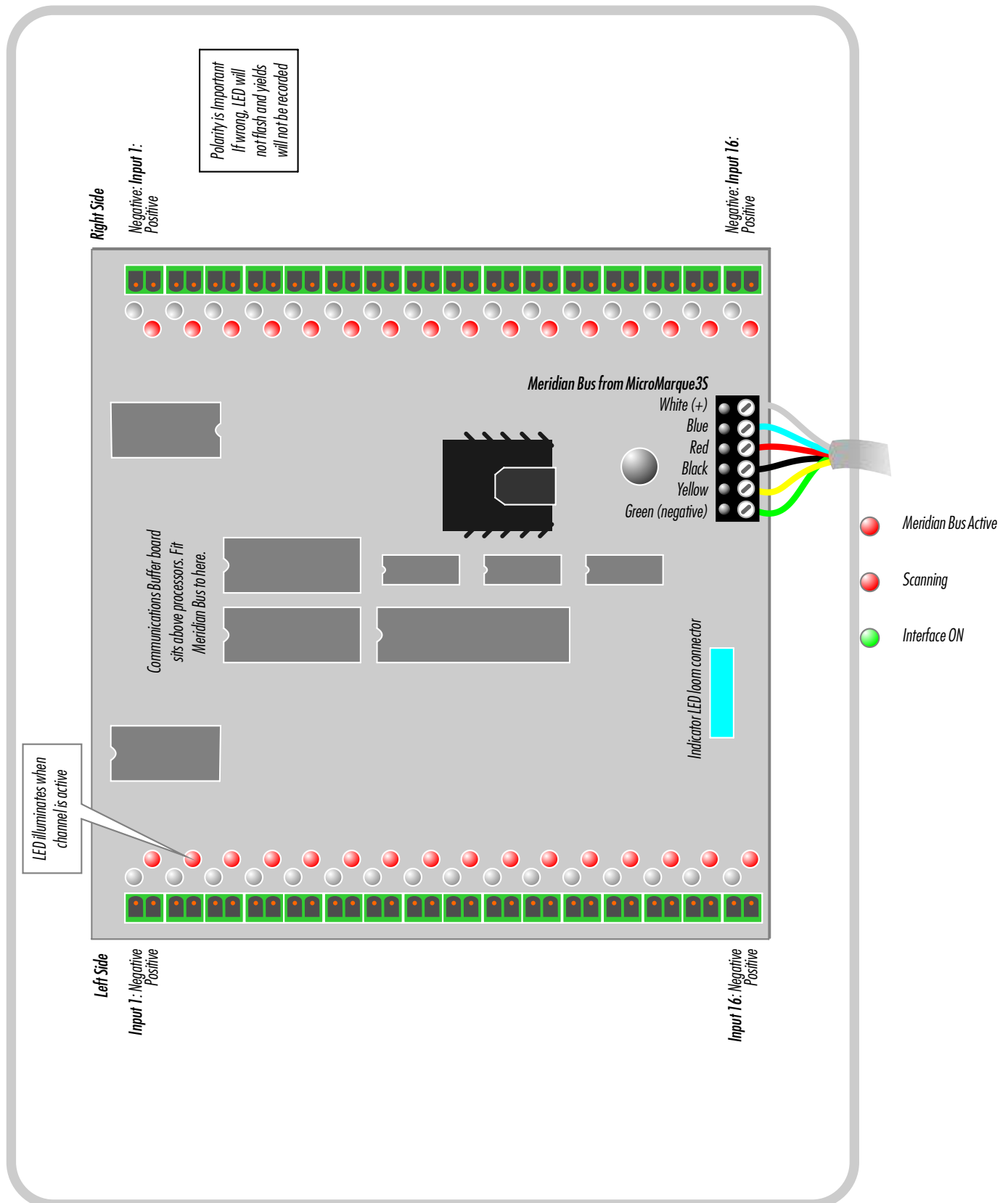






MILK METER INTERFACE: 3B

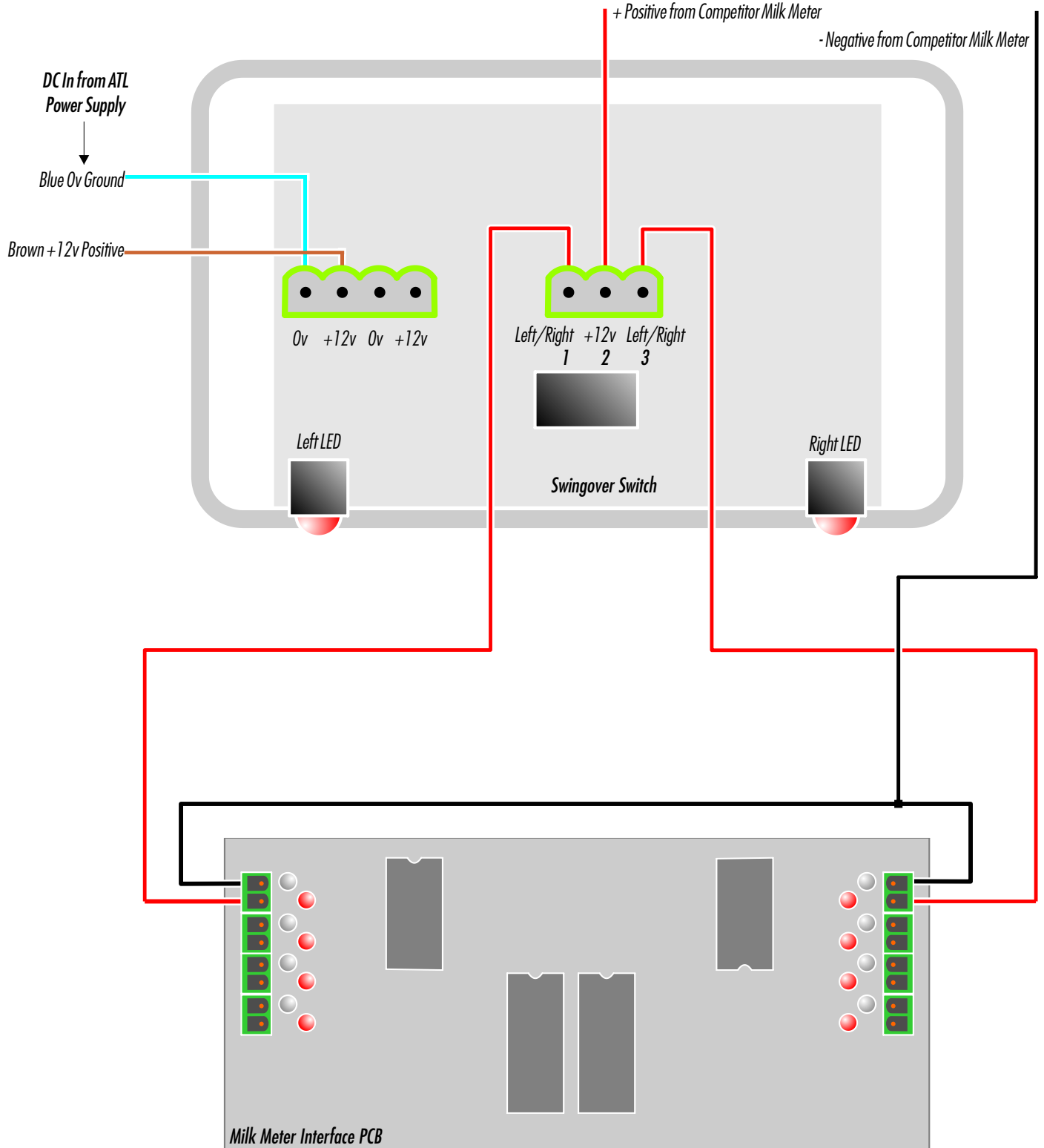
Milk Meter Interface Wiring - PCB 88/5 - Post-August 2005





MILK METER INTERFACE: 4

Milk Meter Interface and Swingover Switch Wiring - PCB 88/5 - Post-August 2005

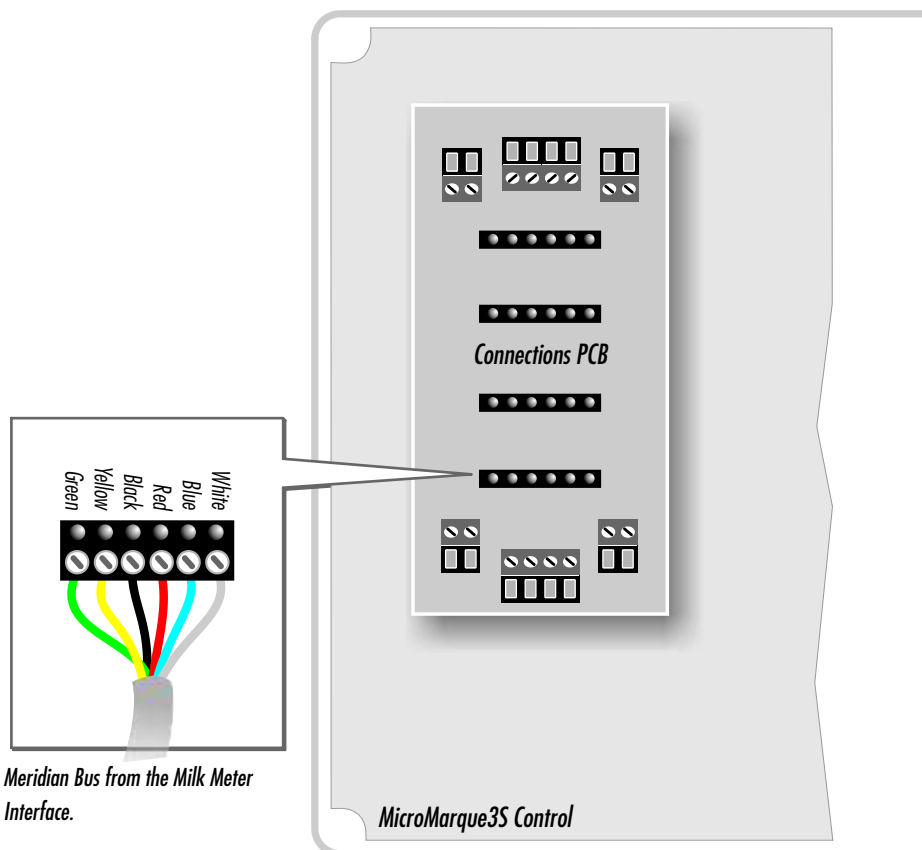




MILK METER INTERFACE: 5

Connecting the Milk Meter Interface into the MicroMarque3S

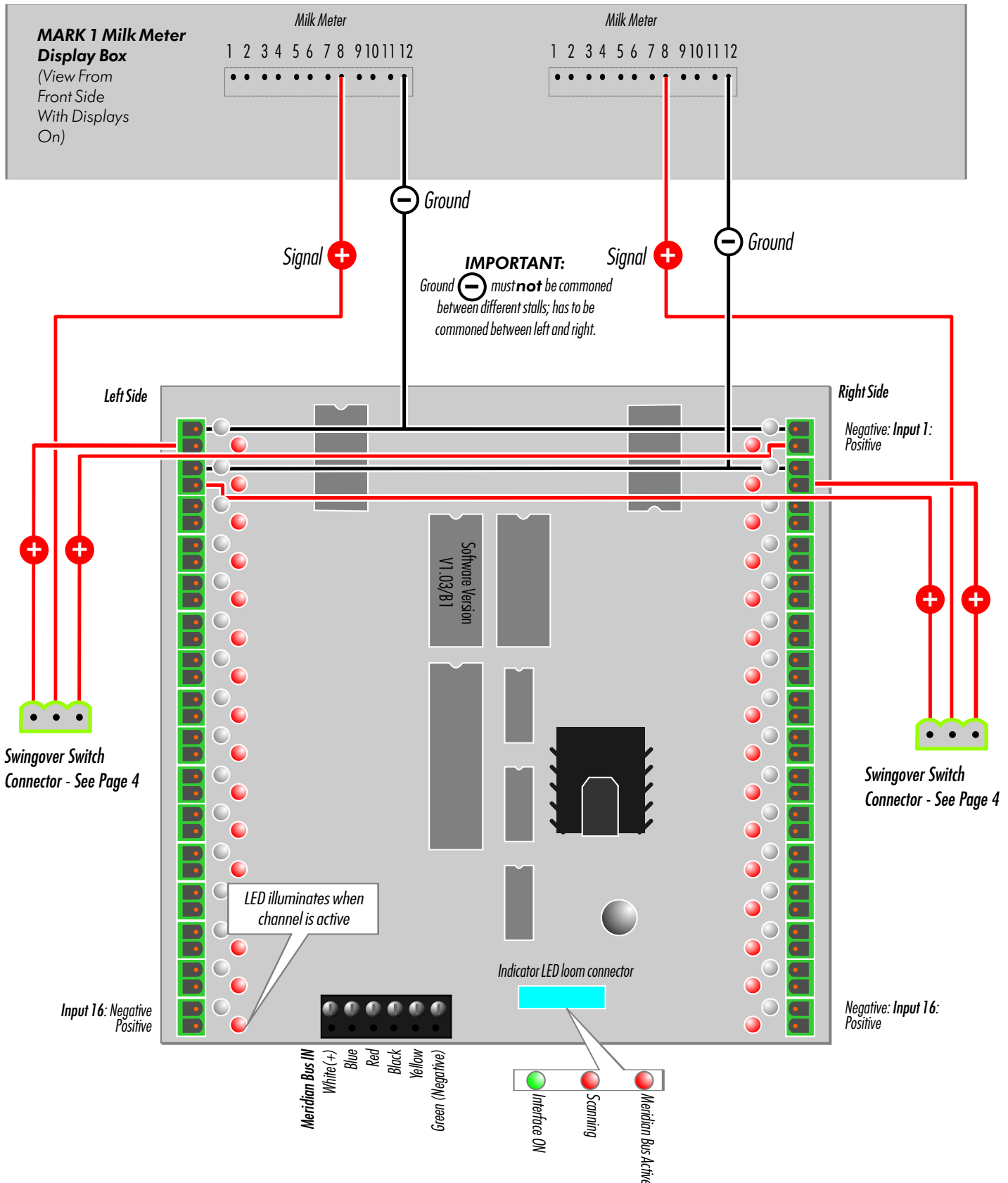
A 6 core data cable- the Meridian Bus- connects the MicroMarque3S to the Milk Meter Interface.
This cable cannot be substituted. The 6 cores should be connected as shown below.





MILK METER INTERFACE: 6

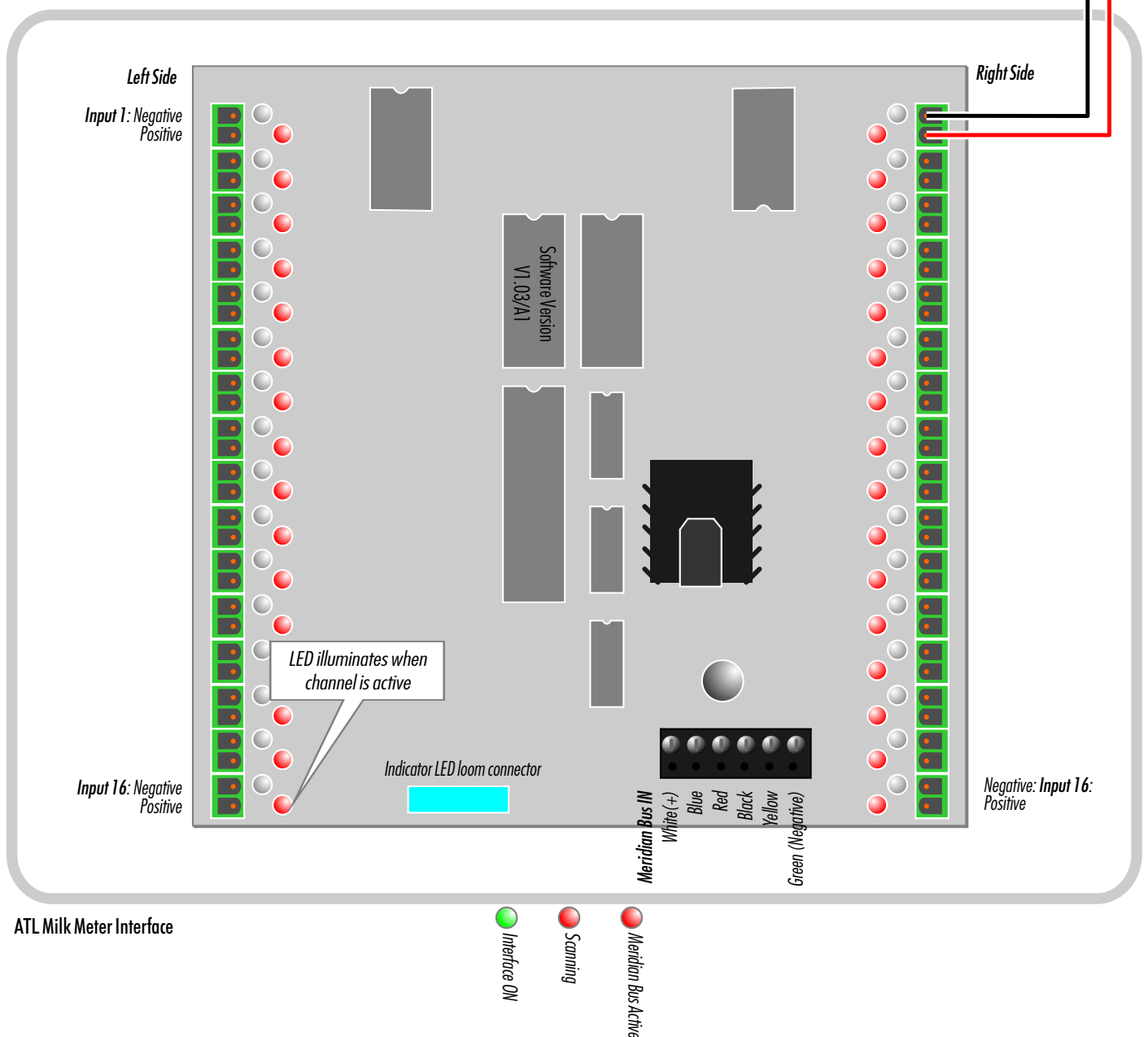
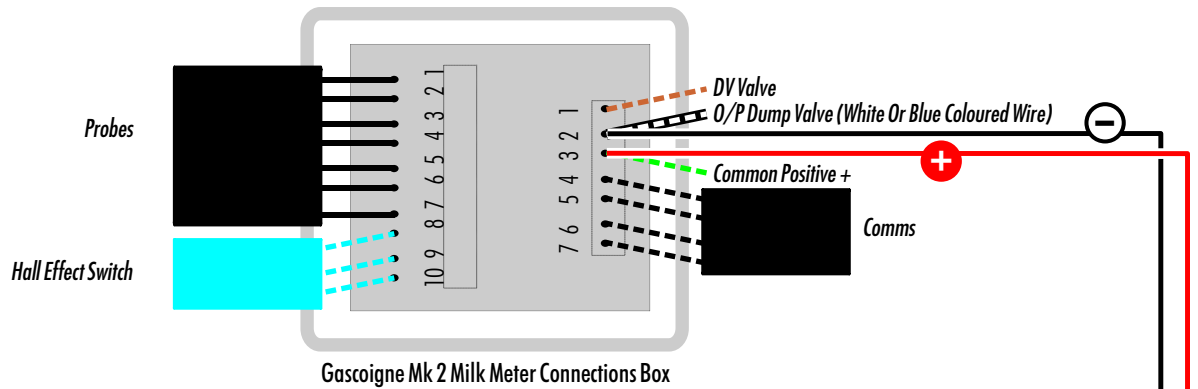
Milk Meter Interface Wiring into Gascoigne Mk1 Milk Meter - Post-August 2005





MILK METER INTERFACE: 7

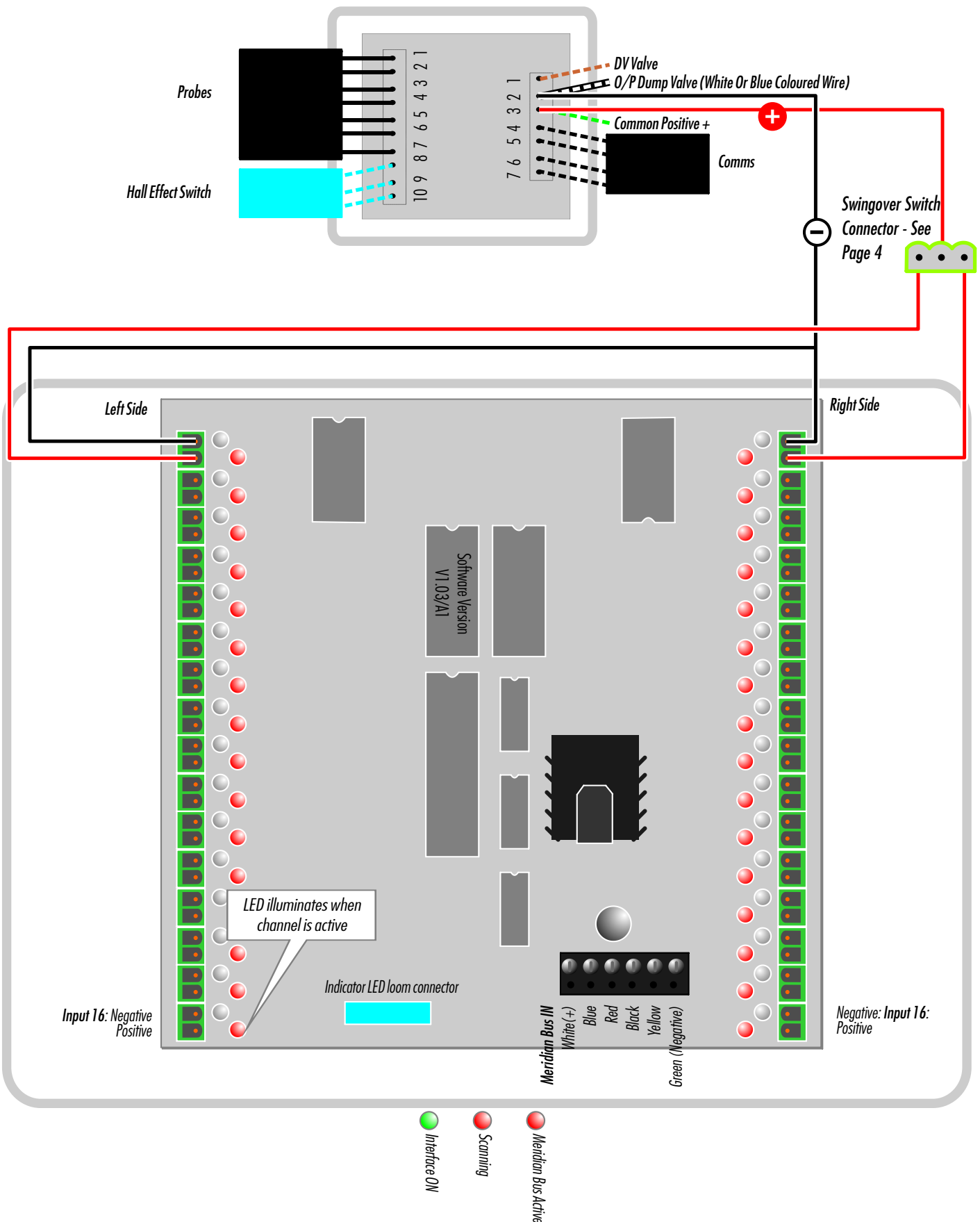
Milk Meter Interface Wiring into Gascoigne Mk2 Milk Meter - Standard Parlour - PCB 88/5 - Post-August 2005





MILK METER INTERFACE: 8

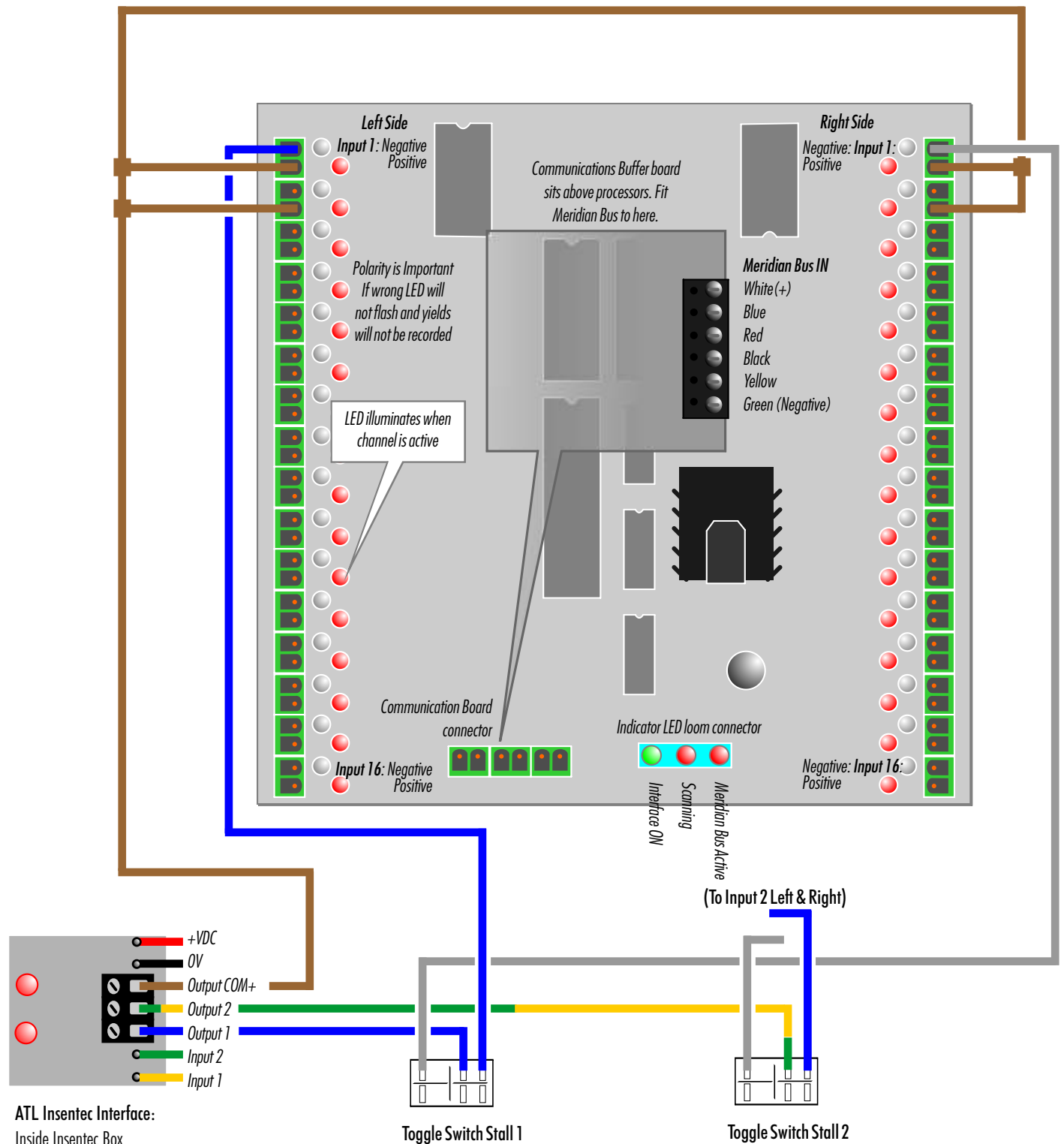
Milk Meter Interface Wiring into Gascoigne Mk2 Milk Meter - Swingover Parlour - PCB 88/5 - **Post-August 2005**





MILK METER INTERFACE: 9

Milk Meter Interface Wiring into Insentec Milk Meter: Swingover Connections (Top Right) and Swing Over Connections (Bottom Right):





MILK METER INTERFACE: 10

Using the MicroMarque3S Control

An introduction to using subroutines on the MicroMarque3S control.

SHIFT FUNCTIONS

There are many features of the MicroMarque3S which are accessed either as Functions—simple ‘one-shot’ actions that produce an immediate result such as displaying the cows fed, or Subroutines which require a degree of interactivity to configure the machine or access specific information.

The Shift key in combination with another key is used to run Subroutines and Functions. The procedure is always:

Press and **Hold** the Shift key

Press the Combination key: The functions are shown as small labels along the top edge of some keys; SUBS for example.

Release the Combination key.

Release the Shift key.



RUNNING A SUBROUTINE

Subroutines are ‘miniature’ programs that carry out a specific task, usually to configure the system, set up feed dispensing or establish data parameters. To run a subroutine:

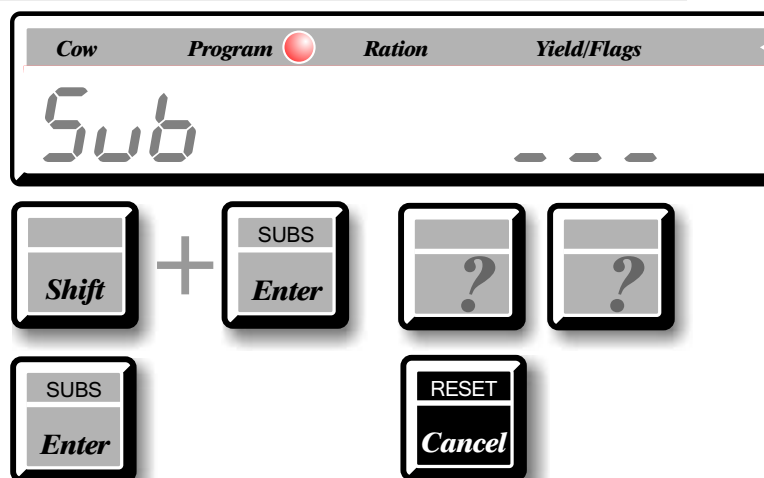
Check that Program Mode is selected. (See below).

Press the Shift + Enter (SUBS) combination. The ‘Sub’ message will appear with the entry prompt ___ in the Yield/Flags window.

Key the subroutine number. This may be either 1, 2 or 3 digits.

Press Enter. The subroutine will now run.

Press Cancel to exit the subroutine.



PROGRAM & FEED MODES: Subroutine 638

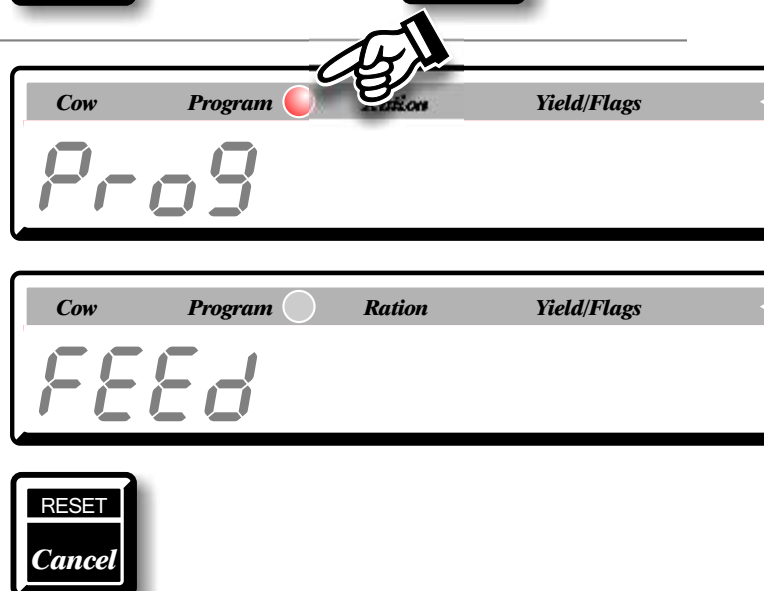
The MicroMarque3S operates in 2 modes:

Program Mode allows system data and setup parameters to be changed. Program Mode is active when the red ‘Program’ indicator on the display bar is lit.

Feed Mode allows cows to be fed and flags set but prevents alterations to the system setup. This mode is provided for relief milking to avoid vital data being changed inadvertently.

This subroutine operates as a ‘toggle’; each time it runs, the mode alternates. No further operator input is required.

Press Cancel to exit the subroutine.





MILK METER INTERFACE: 11

Setting up the MicroMarque3S Control with the Milk Meter Interface

If a Milk Meter Interface is linked to a MicroMarque3S, the following subroutines are relevant.

ENABLE/DISABLE MILK METER INTERFACE: Subroutine 301: Default = NO(OFF)

If milk meters are attached to the system, the interface- the electronic device that converts the output from the milk meters to information that the MicroMarque3S can 'understand'- has to be enabled.

Check that Program mode is selected.

Run subroutine 301. The message 'MMIF' will be displayed with the current setting - 'YES' or 'no'.

Use the Change key to toggle between 'YES' (Interface ON) or 'no' (Interface OFF).

Press Enter to store the setting.



SET % VARIATION IN MILK YIELD: Subroutine 986: Default = 10%

For farmers using milk recording it is possible to display cows that have a significant yield variation from milking session to session. This variation is measured as a percentage of the original yield and may be set up to suit the farmer.

Check that Program Mode is selected.

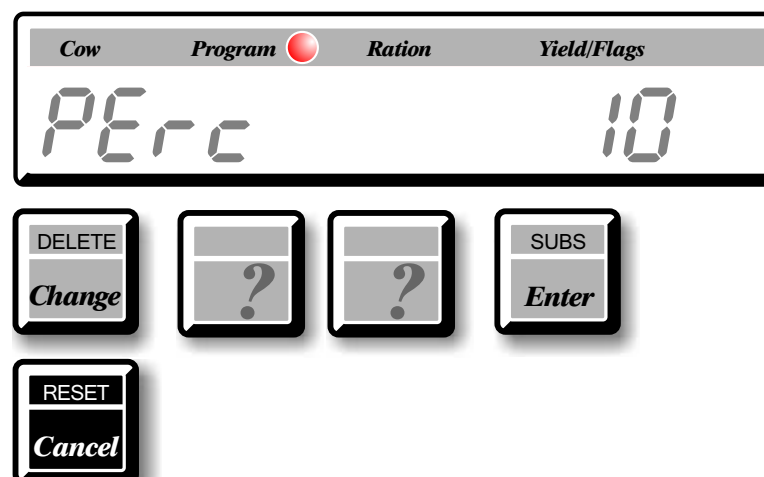
Run the subroutine. The message 'PErc' is displayed with the current setting in the Yield/Flag window.

Press Change to alter the value. The display will clear to the entry prompt ____.

Key the new value in the range 0 to 99.

Press Enter to store the value.

Press Cancel to exit the subroutine.



SET MILK METER DISCHARGE VOLUME (ml/pulse): Subroutine 979. Default = 200

Most milk meters are designed to send out an electrical pulse when a pre-determined volume of milk has been reached and is discharged into the milk line. This volume will vary between milk meter types so this subroutine is designed to establish a value (in millilitres) per pulse for the installed meters.

Check that Program Mode is selected.

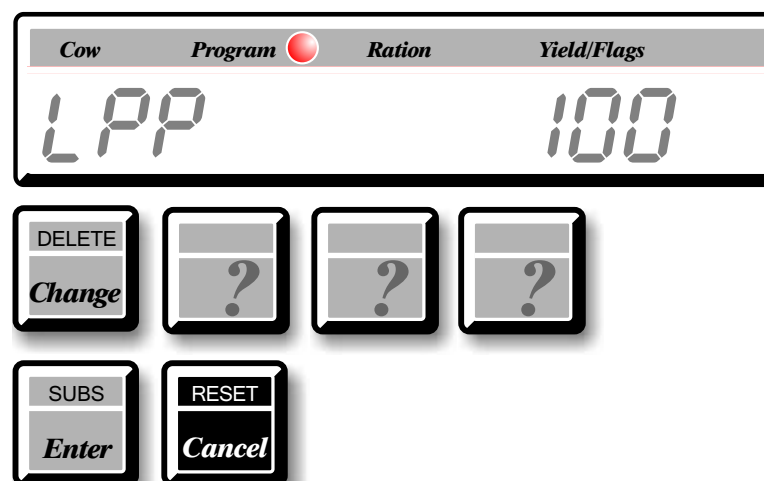
Run the subroutine. The message 'LPP' is displayed with the current ml/Pulse value in the Yield/Flags window.

Press Change to alter the value. The Yield/Flags window clears to the prompt ____.

Key the new value in the range 1 through 999.

Press Enter to store the new value.

Press Cancel to exit the subroutine.





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Setting up the MicroMarque3S Control with the Milk Meter Interface Continued

If a Milk Meter Interface is linked to a MicroMarque3S, the following subroutines are relevant.

MILK METER INTERFACE COMMUNICATION (IDS) TEST: Subroutine 601

The communications with the Milk Meter Interface can be tested by running this subroutine.

Check that Program Mode is selected.

Run the subroutine 601.

The message 'MMI Fu1 Yes T1' will be displayed in the main window and '103' will be displayed in the totals window.

T1 relates to the type of Milk Meter Interface installed and the type of milk meter's it is connected to - other types of interfaces are T2 and T3.

Press the STEP key to check the communication with any additional Interfaces. For example, checking communications with Interface 2 would result in 'MMI Fu2 Yes T1' being displayed in the main window and '103' in the totals window.

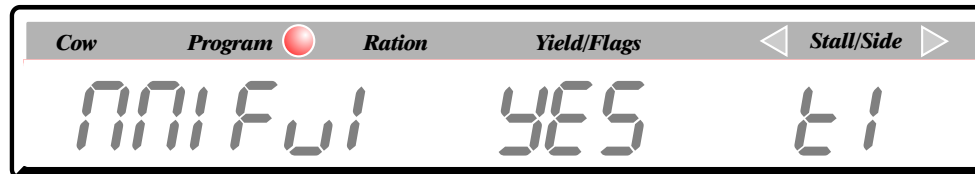
The software version of each Milk Meter Interface present (i.e. '103') is displayed in the Cumulative Totals display.

Error Message 1 - 'Err 1' is RAM failure in the Milk Meter Interface.

Error Message 2 - 'Err 64 + X' indicates that input X is continuously turned on.

Press Cancel to exit the subroutine.

NB - Err + message is shown if a milk meter solenoid is activated during testing.





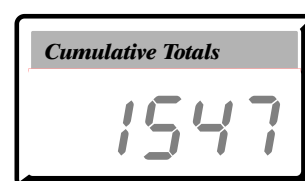
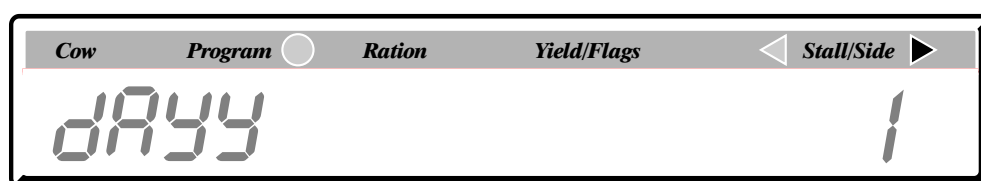
MILK METER INTERFACE: 13

Calibrating the Milk Meter Interface

The Milk Meter Interface calibration is set globally. The milk meters are more than likely to be calibrated individually. Therefore, the yields recorded and stored in the MicroMarque3S may vary slightly from those displayed on the milk meter controls. To calibrate, make a note of the Daily Milk Yield Total on the MicroMarque3S after a few days (if milk meters are brand new- if not brand new can be carried out straight away).

The Daily Milk Yield Total is stored under the Herd Totals. The Daily Milk Yield Total is calculated during the 11:00am automatic housekeeping routine. The automatic housekeeping times need to correspond to the milk collection times. Please refer to the MicroMarque3S Operation manual for information on how to change the automatic housekeeping times. NB - This is only available on MicroMarque3S software v4.27 or above. Please run subroutine 2 to check.

To access these press the Totals key on the MicroMarque3S.



There are 7 totals available. Each press of the Totals key displays a new category. The totals available are:

- cFE^d* Cows Fed during this milking
- dAYF* Daily Consumed Feed Total
- dAYY* Daily Milk Yield Total
- nLKY* Total Milk Yield during this milking (software v4.29 or above)
- totF Total Feed Consumed to Date
- totY Total Milk Yield to Date
- bAtF Total Feed dispensed using Batch Mode



Press the Totals key until the MicroMarque3S display shows dAYY. The cumulative totals window will show the total milk yield for the current day.

Compare the Total Yield to the bulk tank printout.

Therefore, to calibrate the milk meter interface, do the following calculation:

$$1547 \div 1624 \times 100 = \underline{95.26\%}$$

Milk meters out by 4.74%

Bulk Tank Printout 10-05-2009

Total Amount Collected 1624 litres

Therefore, if the milk meter discharge volume (subroutine 979) is set at 200, the value should be changed to:

$$200 \div 100 \times 104.74 = \underline{209.48}$$

Therefore, the milk meter discharge volume(subroutine 979) should be changed to 209. For information on subroutine 979, please see page 11 of this manual.

Re-check this again after a few more days and change if required.



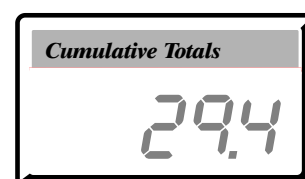
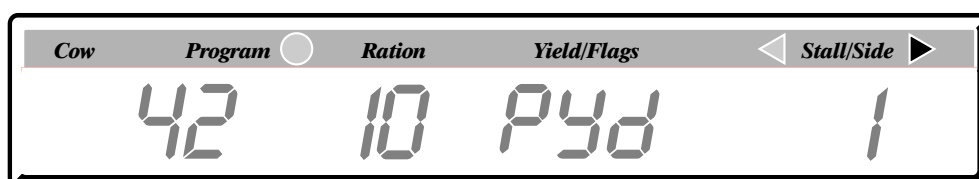
MILK METER INTERFACE: 14

Checking Individual Yields from Milk Meters against Yields from Milk Meter Interface

Even though the milk meter interface is calibrated globally, each milk meter should be checked individually, so that any which are considerably differently can be noted.

The MicroMarque3S has to be in 'Pyd' mode to show the current individual yields. To do this:

Type in a valid cow number and press the Enter key.



With the cow's record on the display, press the Totals key until 'Pyd' is displayed in the Yield/Flags window.

Press Shift + Cancel to clear the display.



In the example above, cow number 42 with a current daily ration of 10 units, has a previous milk yield of 29.4 litres (Pyd).

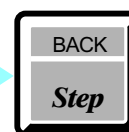
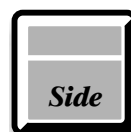
To check the yields, use the recall facility to access the records for cows currently occupying the parlour. Left or right sides may be recalled.

Use the Side key to select the required parlour side.

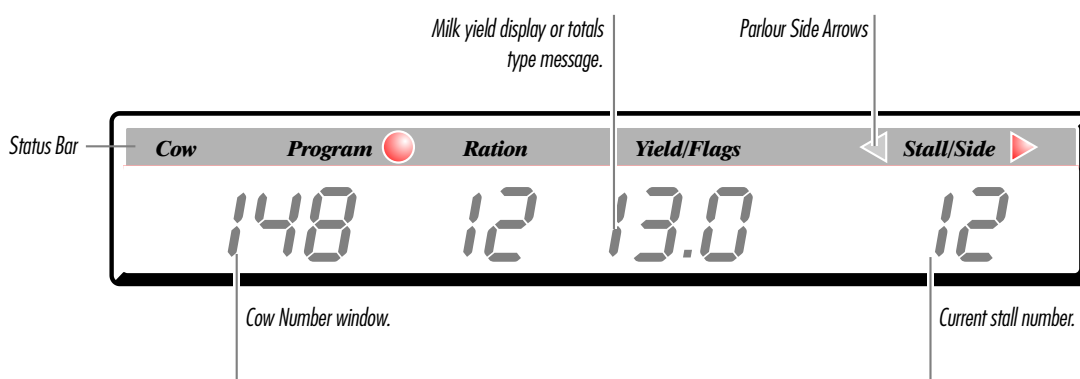
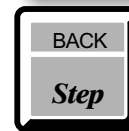
Press the Recall key.

Press the Step key to step to the required stall (or Shift + Step(BACK) to step back a stall)

Once the required stall is selected, the MicroMarque3S will display the current yield in Yield/Flags. If the cow is still milking, the yield will continue to be recorded, even though the yield will not change on the display. Press the Step key to step forward and then Shift + Step to go back to the stall to see the updated yield.



+





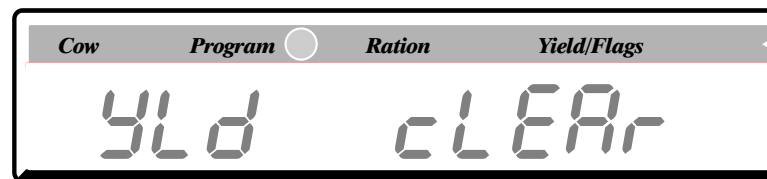
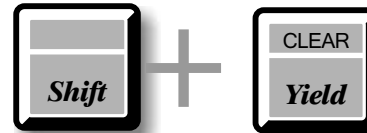
MILK METER INTERFACE: 15

USING THE MICROMARQUE3S: End of Milking:

MILK METER INTERFACE: STORING MILK YIELDS: Key Function.

On systems where the MicroMarque3S is linked to the Milk Meter Interface it is very important that Shift + Yield Clear is pressed after the last cows have finished milking but before the wash routine is started. If this is not pressed, the wash water will be counted and added onto the milk yields of the last cows milked. Therefore, very high yields could be recorded against the last side of cows on a swingover parlour or the last right-hand and left-hand sides of cows of a doubled up parlour.

Press Shift + Yield. The message 'Yld cLEAr' will display.



For information on how to use the Milk Meter Interface during milking, please see the MicroMarque3S operation manual.