

	ISN INTEGRATED SYSTEMS NETWORK	
WIRING	Supersedes: 450.11-N5 (497)	Form 450.11-N5 (598)

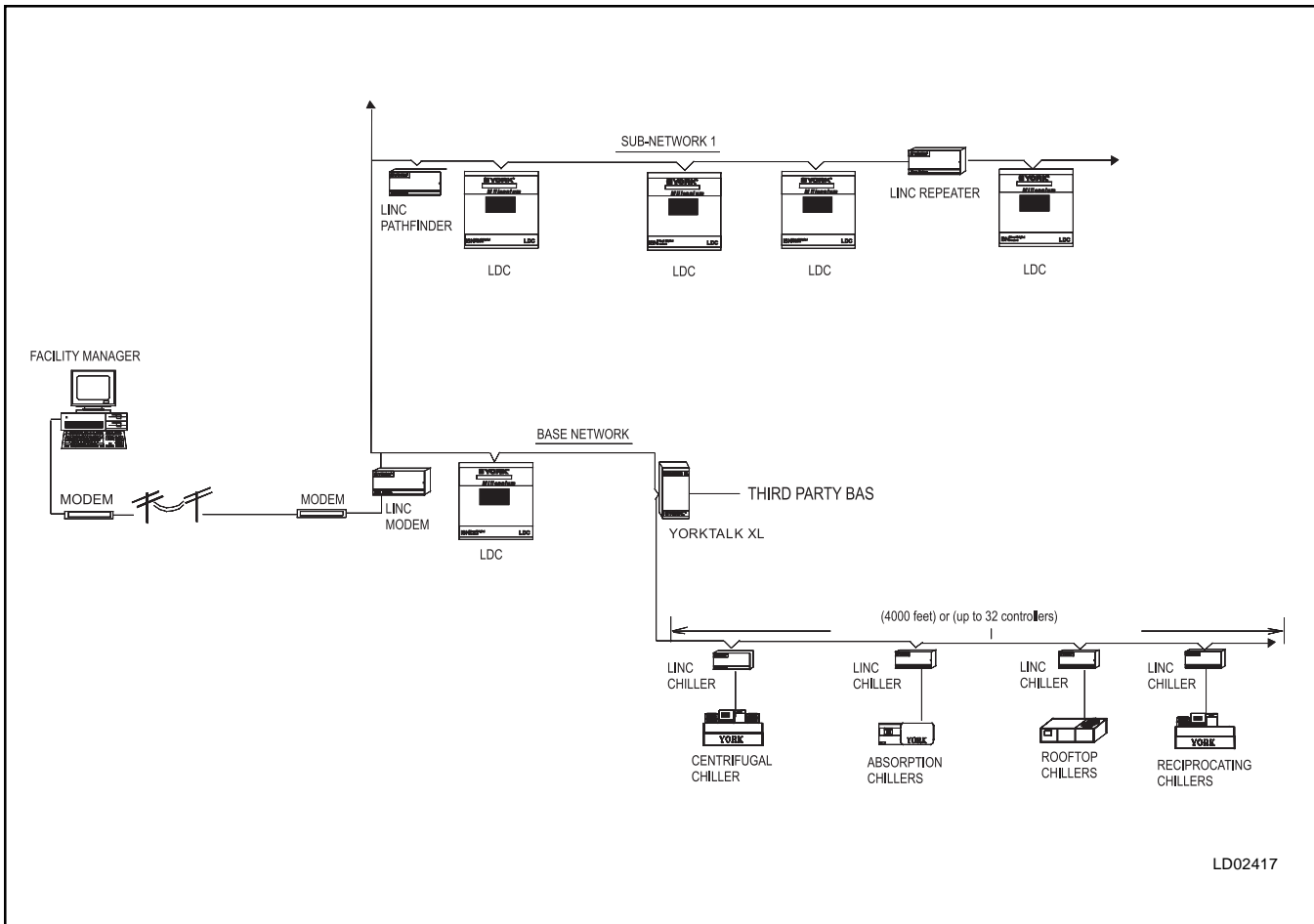
Millennium[®] ISN
YorkTalk TRANSLATOR
ANDYorkTalk XL
COMMUNICATION WIRING DETAILS

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YorkTalk Communication Wiring Details

TOPOLOGY-YorkTalk XL



Topology of the YorkTalk XL, Linc Chiller and the York Chillers

- The YorkTalk XL ties directly onto the LAN. (Local Area Network)
- The Linc Chiller connects to the YorkTalk XL via the LAN.
- Each Chiller will have peer to peer communications with its own Linc Chiller.
- Communications to the chiller via Facility Manager direct connect, phone lines, an ISN Controller, or a PC emulating terminal mode (RS-232) communications.

YorkTalk Communication Wiring Details

Wiring Description

Power Supply

1. The 24RET terminal of the YorkTalk XL must be terminated at a building ground reference. Failure to install this ground can result in damage to local area network RS-485 drivers, communications errors, and loss of program memory.
2. The secondary of the transformer may be required to be grounded by NEC and/or local electrical codes. Check with your Electrical sub-contractor or inspector for proper installation requirements.
3. When measuring voltages on the YorkTalk XL or Linc Chiller a GND reference point can be taken from EARTH, 0V SYS, 0V LAN, or 24RET.
4. Class II wiring states that your power source must not exceed 3 amps. This is 75VA @ 24VAC. The power supply **is field supplied**.

YorkTalk XL and Linc Chiller

1. Wire P2 to P2 and P3 to P3 between LAN, YorkTalk XL, and the Linc Chiller.
2. On LAN wiring entering the YorkTalk XL the shield should be terminated at the ground lug inside panel and leaving the shield should be cut and taped to back of the LAN cable. The shield entering the Linc

Chiller should be tied to the ground lug inside the panel and leaving the shield should be cut and taped to the back of the LAN cable.

3. The Linc Chiller resides on the ISN LAN which, on multiple chiller sites, should be daisy-chained to each Linc Chiller using terminals P2 and P3.

YorkTalk Communications

1. Cut and tape back the shield leaving the Linc Chiller at port 2 RS-485 and terminate the shield to the GND terminal at the micro-panel.
2. Wire from the YorkTalk port 2 RS-485 to the micro panel using P2- to BAS- and the P3+ to BAS+.
3. Install the Transient Protection Module onto each chiller.

Micro Panel

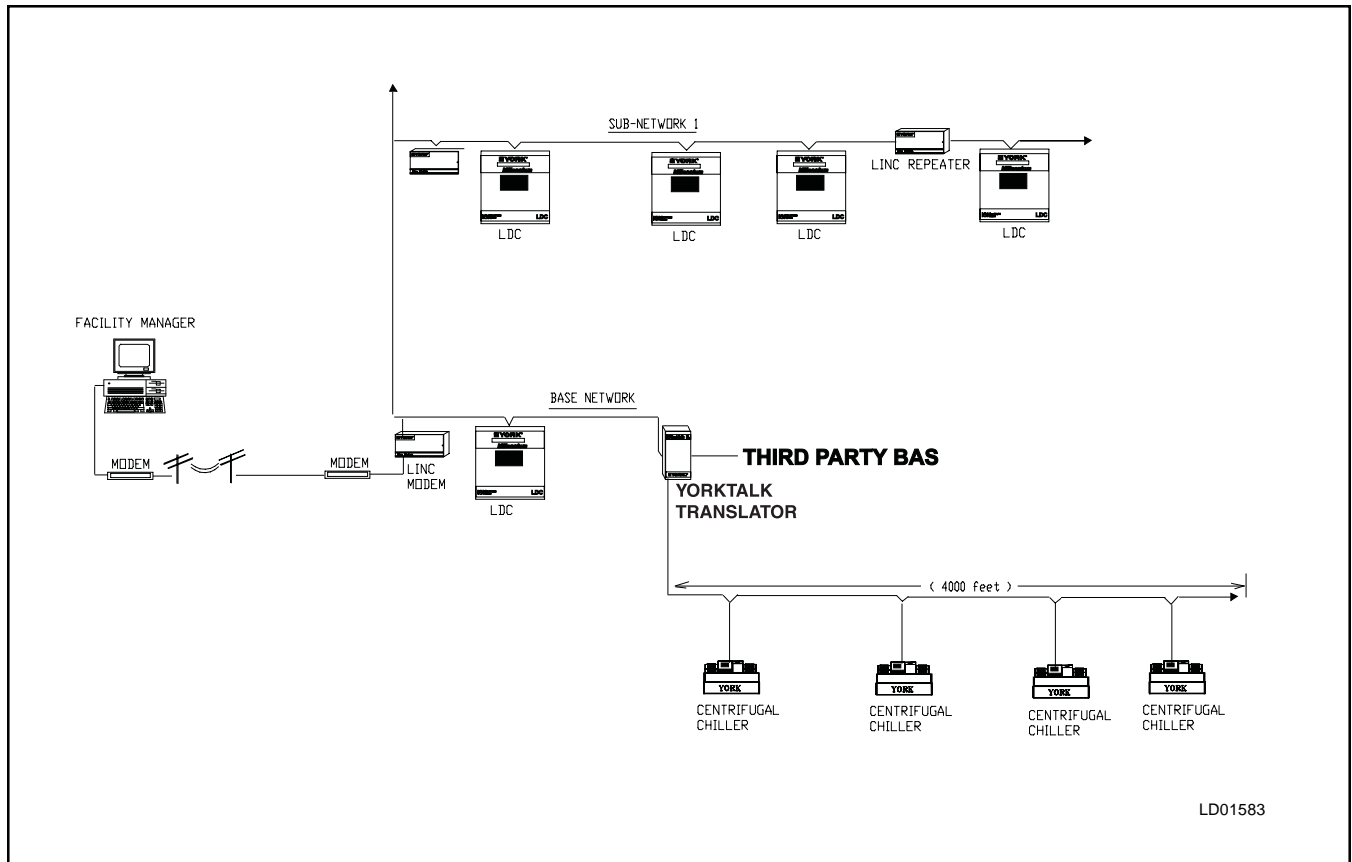
1. See micro panel detail wiring later in this document listed via chiller type versus micro panel.

Third Party BAS

1. Third party BAS will tie into the port 2 RS-232 Node 2 terminal, of the YorkTalk XL.
2. Communications will be via a software driver written by the third party BAS.

YorkTalk Communication Wiring Details

Topology – YorkTalk Translator

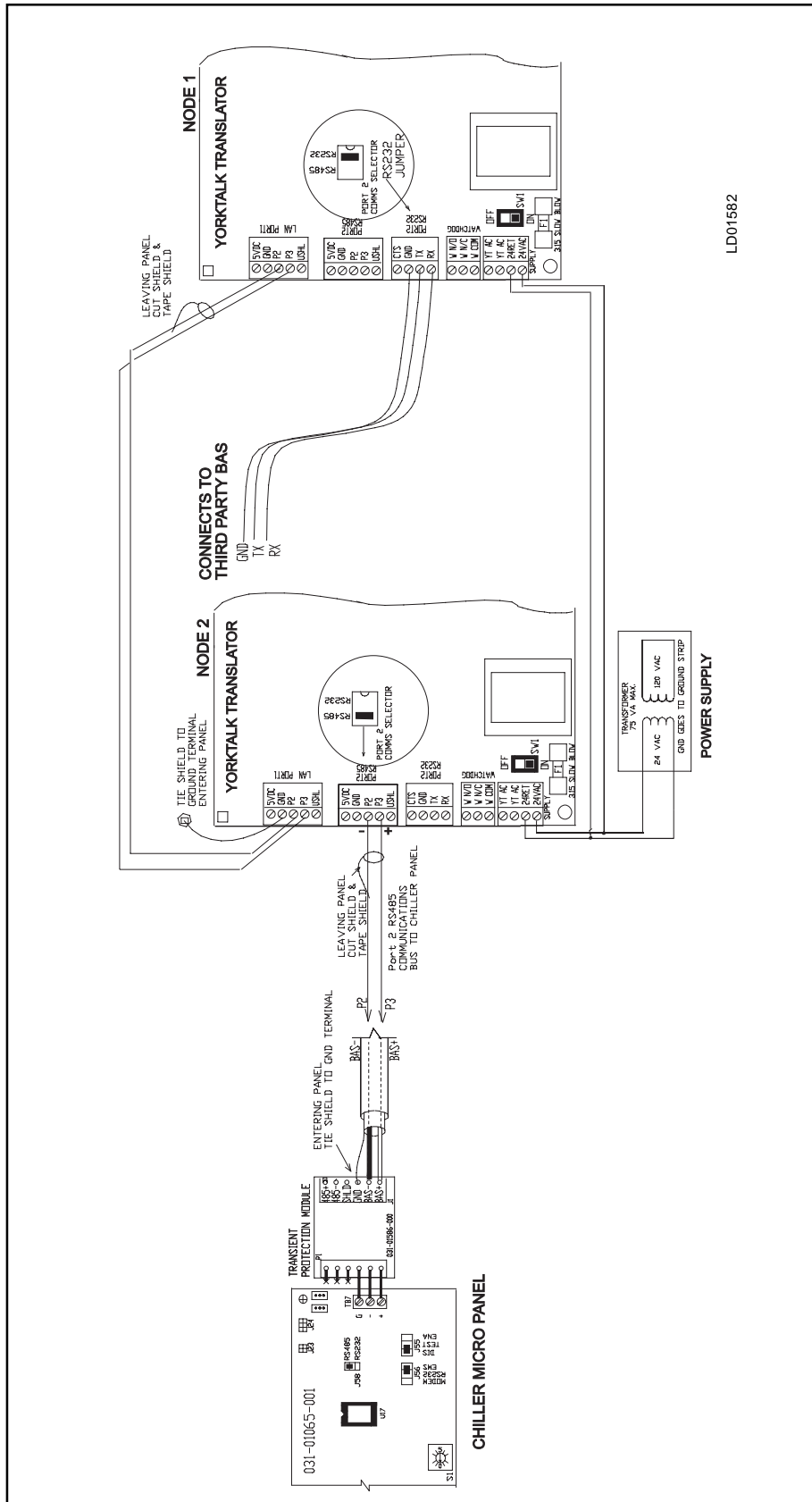


Topology of the YorkTalk translator

- The YorkTalk Translator ties directly onto the LAN. (Local Area Network)
- The Chiller will connect to the YorkTalk Translator via port 2 RS-485.
- The YorkTalk Translator communicates with up to four chillers at one time.

YorkTalk Communication Wiring Details

Wiring Detail YorkTalk Translator



YorkTalk Communication Wiring Details

Wiring Description

Power Supply

1. The 24RET terminal of the YorkTalk Translator must be terminated at a building ground reference. Failure to install this ground can result in damage to local area network RS-485 drivers, communications errors, and loss of program memory.
2. The secondary of the transformer may be required to be grounded by NEC and/or local electrical codes. Check with your Electrical sub-contractor or inspector for proper installation requirements.
3. When measuring voltages on the YorkTalk Translator or Linc Chiller a ground reference point can be taken from GND, 0V SYS, 0V LAN, or 24RET.
4. Class II wiring states that your power source must not exceed 3 amps. This is 75VA @ 24VAC.

RS-232 Translator

1. Internal wiring for the APC cards is factory installed. The field is responsible for power and RS-485 communications to the chiller.
2. Up to four chillers may be connected to the YorkTalk Translator.
3. The chiller will tie into port 2 RS-485. Keeping the + to the P3+ and the - to the P2. Terminate the shield to the GND terminal of the micro panel, and at port 2 RS-485 cut and tape back shield to cable.
4. Install the Transient Protection module to the chiller. See later in document for detail of this installation.

Third Party BAS

1. Third party BAS will tie into the RS-232 terminal on Node 1 of the YorkTalk Translator via terminals 14, 15, & 16.

YorkTalk Communication Wiring Details

SETUP OF THE 1065 MICRO BOARD

The 1065 Micro board handles the YORK Centrifugal Chiller, Rotary Screw Chiller, Super Chiller, IsoFlow Absorption, the ParaFlow Absorption Chiller, and the GED Chiller.

Micro Panel Configuration

The instructions below are for set up of chiller communications with the ISN Controller only. You will have to check with the chiller installation manual for complete chiller set up.

The micro panel should be fully functional before attempting to set up the panel for YorkTalk communications.

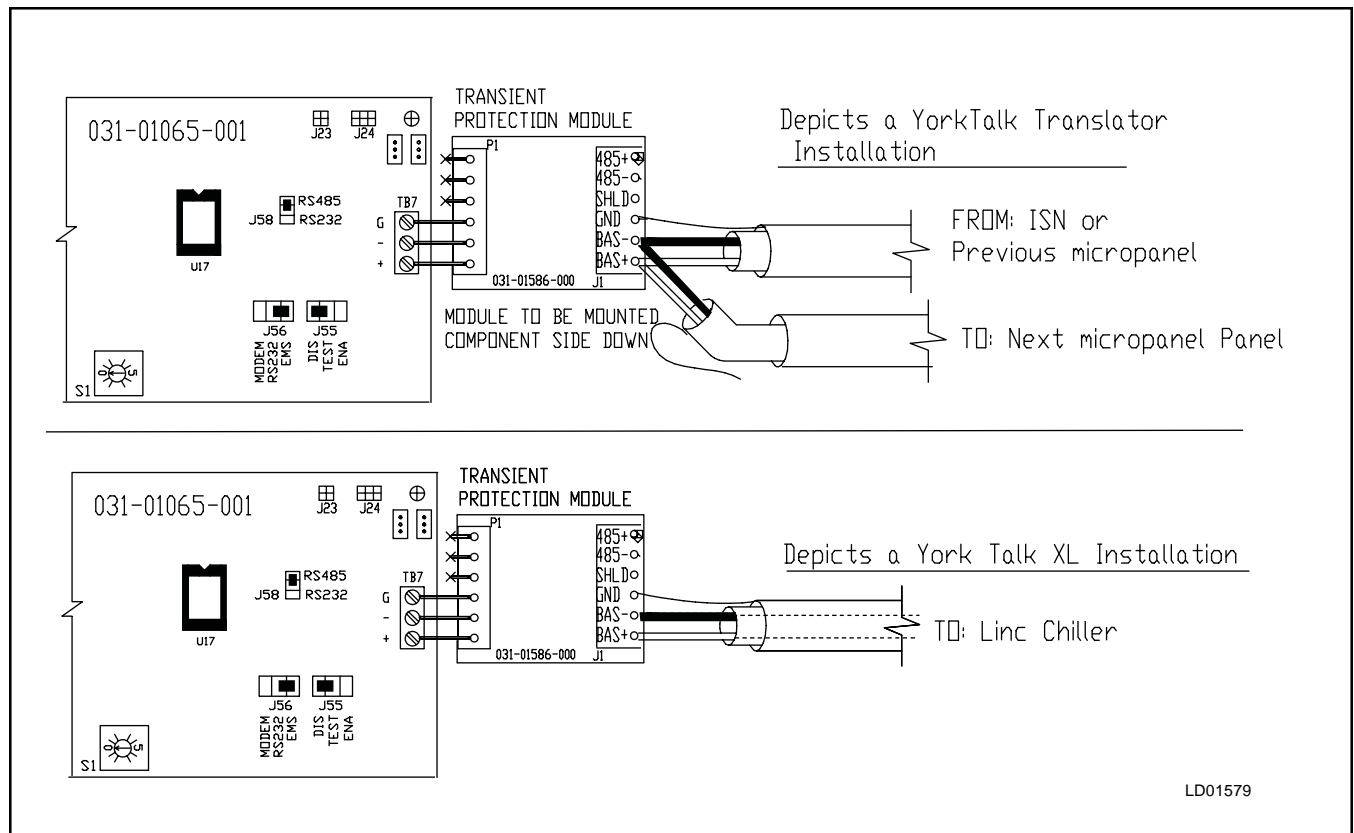
1. The micro board part number should be **031-01065-000** or **001**. The + and - on micro board 031-01065-000 TB7 silk screen is switched. Wire according to the drawing on next page.
2. Power down the micro panel when installing the ISN **EPROM** at **location (U17)**.
3. Set **chiller ID** using the rotary **switch (S1)**. (**0=chiller 1**)
4. Set **jumper (J55)** to the left position marked **DIS**.
5. Set **jumper (J56)** to the **EMS** position.
6. Set **jumper (J58)** to the upper **RS-485** position.
7. TB7 is the RS-485 terminal strip. Wire **BAS(+)** of the micro panel to **P3 (+)** of the ISN controller. Wire **BAS(-)** of the micro panel to **P2(-)** of the ISN controller.

Tape back shield at the Linc Chiller and connect the shield to the GND terminal at the micro panel.

Install the chiller Transient Protection module as required.
8. Power up the micro panel with the chiller start switch in the off position.
9. Changing the standard chiller EPROM to the ISN EPROM will eliminate local setpoints and schedules entered at the micro panel. If required, you must re-enter setpoints and schedules. See the chiller operations manual for details entering new setpoints in the micro panel.
10. **Verify operation of the ISN controller and the chiller before allowing the chiller to run in remote mode. (Just be sure the chiller is running properly before putting the chiller into Remote.)**
11. **The Baud rate should be set in the controller at 1200. This is set in the controller under Feature 45.**

YorkTalk Communication Wiring Details

WIRING DIAGRAM 1065 Micro Board



To connect the **ISN Controller RS-485** port to the **1065 Micro panel** follow directions below:

- Set jumpers **J58** to **RS-485**, **J56** to **EMS**, and **J55** to **DIS**, **S1** for chiller address.
- Install a **Transient Protection Module** onto each Micro panel **by first cutting the three pins opposite the 485 +, 485-, and the shield.**
- Wire from the **Transient Module BAS (-)** terminal to the ISN controller **RS-485 port, P2 (-)** terminal.
- Wire from the **Transient Module BAS (+)** to the ISN controller **RS-485 port, P3 (+)** terminal.
- Tape back the **shield at the Linc Chiller** and **terminate the micro panel end to GND.** Continue same method for the next chiller as shown above.

YorkTalk Communication Wiring Details

SETUP OF THE 1095 MICRO BOARD

The 1095 Micro Board handles the Reciprocating Chillers with 2 compressor, 3 compressors, 4 compressor, and the Air Cooled Screw.

Micro Panel Configuration

The Instructions below are for the set up of chiller communications with the ISN Controllers only. You will have to check the chiller installation manual for complete chiller set up.

The micro panel should be fully functional before attempting to set up the panel for YorkTalk communications.

1. The Micro Board Part number should be **031-01095-000**.
2. Set the RS-485 jumper (J19) to the **RS-485 position**.
3. Set **switch 3** of the dip switch block (S1) to **closed for remote mode**.
4. Set **chiller ID** by the rotary dial (S6). (**0 = chiller 1**)
5. Install the ISN communications EPROM in **location (U6) with power off of the board**.
6. Connect wires from the ISN Controller to the RS-485 plug, (TB7) in the micro panel.

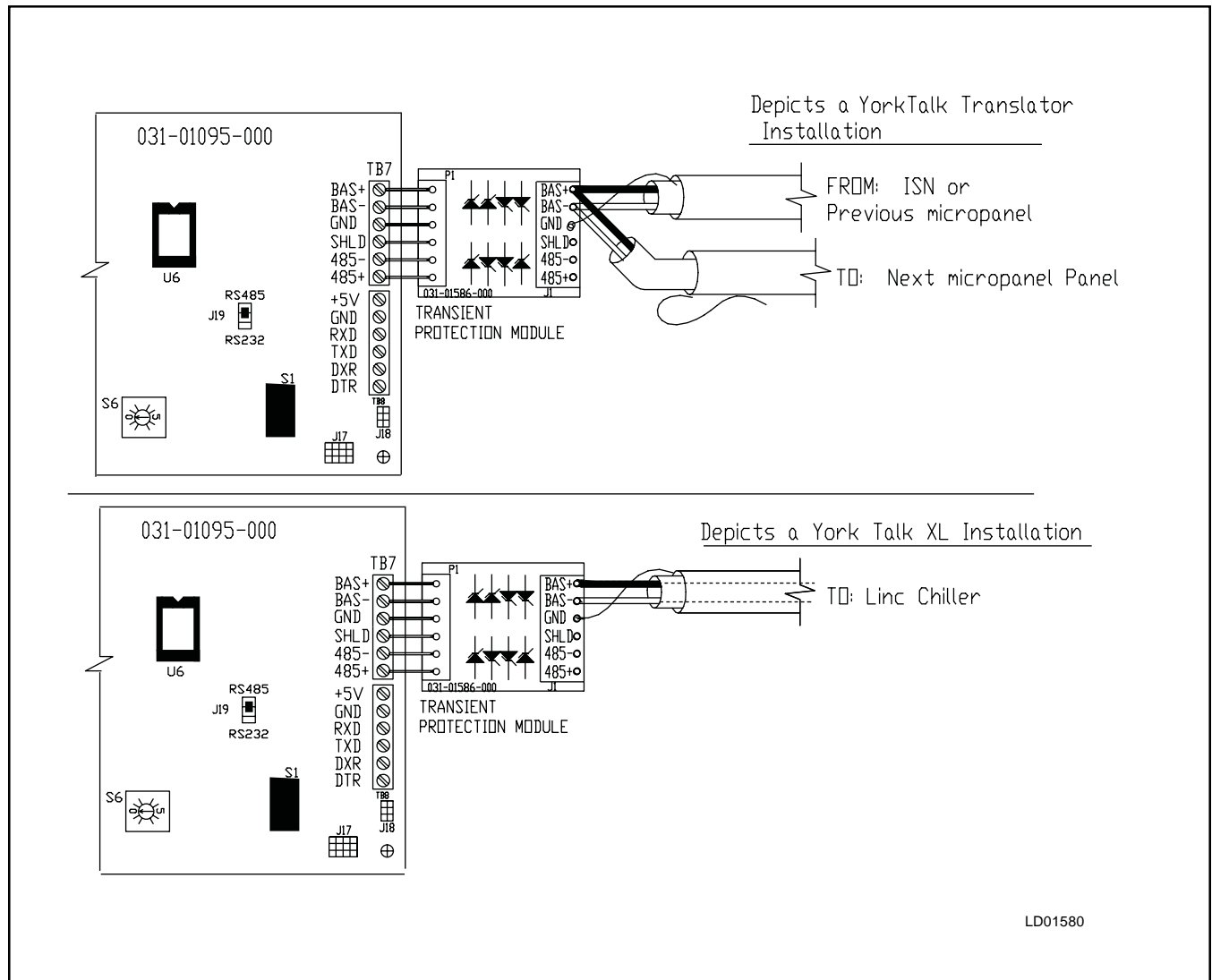
Connect **BAS+** of the micro panel to P3-2 (+) of the ISN Controller and **BAS-** of the micro panel to **P2-2 (-)** of the ISN Controller.

Tape back **shield at the Linc Chiller and connect to the GND terminal at the micro panel**.

Install the chiller Transient Protection module as required.
7. **Verify operation of the ISN controller and the chiller before allowing the chiller to run in remote mode. (Just be sure that the chiller is running properly before allowing the chiller to run in remote).**
8. The **two and four compressor Recips run at 4800 Baud rate** and the **three compressor runs at 1200 Baud rate**.

YorkTalk Communication Wiring Details

WIRING DIAGRAM 1065 Micro Board



To connect the **ISN Controller RS-485** port to the **1095 Micro panel** follow directions below:

- Set jumpers **J19** to **RS-485** and **S6** for chiller address.
- Install a **Transient Protection Module** onto each Micro panel as shown above.
- Wire from the **Transient Module BAS (-)** terminal to the ISN controller **RS-485** port, **P2 (-)** terminal.
- Wire from the **Transient Module BAS (+)** to the ISN controller **RS-485** port, **P3 (+)** terminal.
- Tape back **shield at the Linc Chiller** and **terminate the micro panel to GND**. Continue same method for the next chiller as shown above.

YorkTalk Communication Wiring Details

SETUP OF THE 1314 MICRO BOARD

This set up refers to the RoofTop Sunline 3000 unit.

The instructions below are for set up of chiller communications with the ISN Controller only. You will have to check with the chiller installation manual for complete chiller set up.

The Micro panel should be fully functional before attempting to set up the panel for YorkTalk communications.

1. The micro panel part number is **031-01314-000**.

There are no switches or jumpers that need to be set on this board.

2. **The panel must be in remote to be controlled by the ISN controller.**

To place the panel in remote mode press the Options key and the Node Select key. Advance to Local/Remote by depressing the Mode Select key to the seventh display. Then press the arrow key up or down to select local or remote. By pressing the Enter/Adv key you have entered your selection.

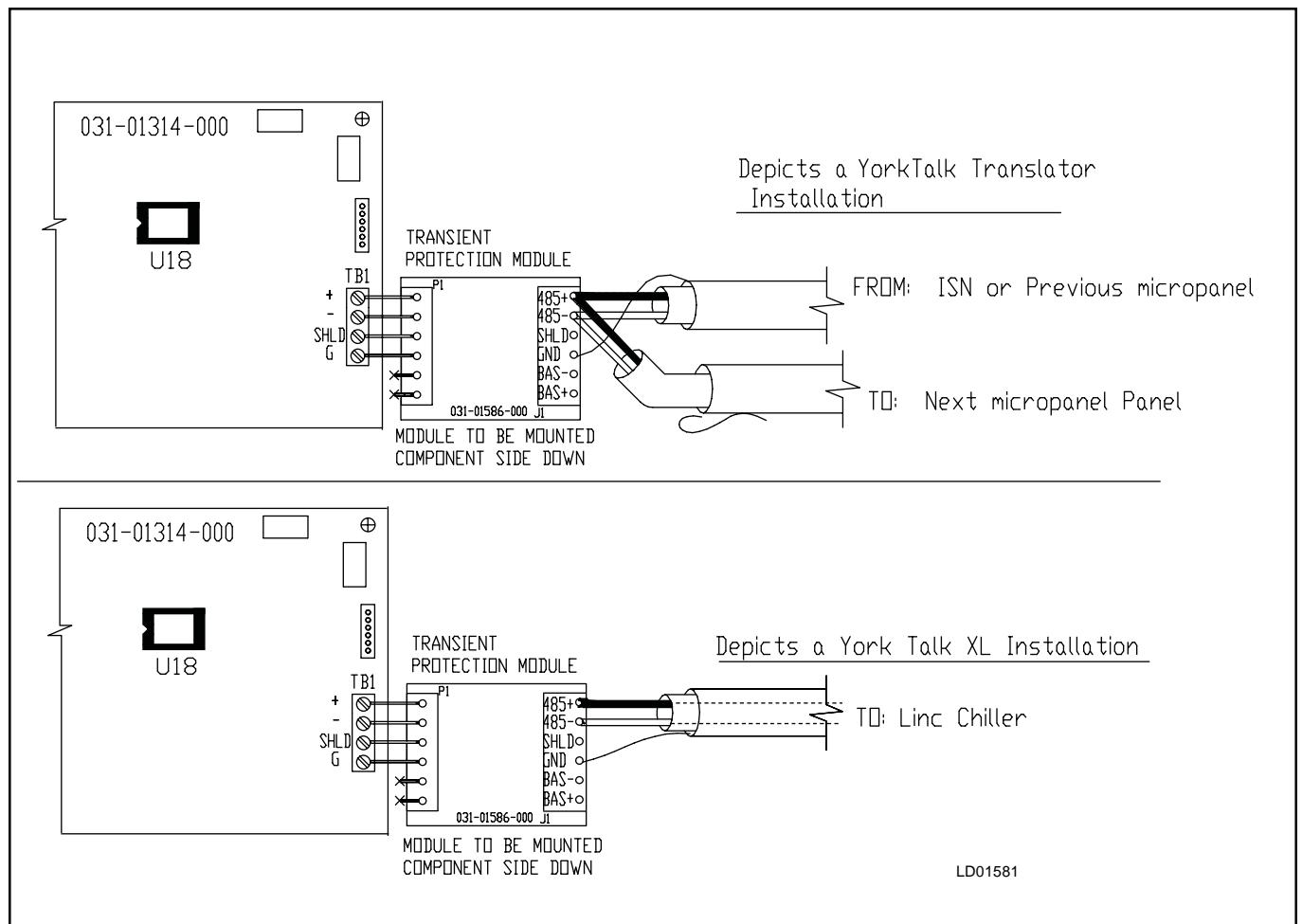
Press the Mode Select until the ninth display to enable you to select the RCC (Remote Control Center) Monitor Mode or ISN Monitor Mode. Then press Enter/Adv key to select.

The tenth and eleventh display enables you to select the ISN ID (1 to 255). Press the up arrow key to increment by 1 and the down arrow key increment by 10. Press Enter/Adv key after selecting you ISN ID.

3. RoofTop **baud rate is fixed at 1200**.
4. Be sure that you have the correct **EPROM in the micro panel U18**.

YorkTalk Communication Wiring Details

WIRING DIAGRAM 1314 Micro Board



To connect the **ISN Controller RS-485 port** to the **1314 Micro panel** follow directions below:

- **Install the Transient Protection Module** onto each Micro panel by first cutting the last two pins opposite the BAS- and BAS+ .
- Wire from the **Transient Module 485 (-) terminal** to the ISN controller **RS-485 port, P2 (-) terminal**.
- Wire from the **Transient Module 485 (+)** to the ISN controller **RS-485 port, P3 (+) terminal**.
- Tape back **shield at the Linc Chiller and terminate the Micro panel to GND**. Continue same method for the next chiller as shown above.

YorkTalk Communication Wiring Details

Set Up Of The RWB II Frick Micro Board

The RWB II Micro handles the Frick 1250 ton Screw Chiller.

Micro Panel Configuration

The instructions below are for set up of chiller communications with the ISN Controller only. You will have to check with the chiller installation manual for complete chiller set up. Also, the micro panel should be fully functional before attempting to setup the panel for YorkTalk communications. *Form 160.65-OM1 MicroComputer Control Center will help in operation of the Frick micro panel.*

1. The micro panel part number should be RWB II or RWBII PLUS.
2. Power down the micro panel and install the ISN EPROMs into location U4 and U5, which can be ordered from the YORK Control Group.
3. Set baud rate to 9600. Make sure the ISN (Feature 45) and micro panel are set to the same baud rate.
4. Set address to 01, 02, etc.
5. Set time and date.
6. Disconnect wire 23 in the micro panel at digital input

no. 2, which allows the chiller to start in remote applications only.

7. For the RWBII Frick micro board install the pre-wired 9-pin connector to port 1. This can be ordered from the Baltimore Parts Center using part number 371-01261-000. Also mount the terminal strip to the micro panel.

For the RWB II Plus Frick micro board wire from the ISN to port 1 of the Frick panel. In this panel there is a selection in the setpoint adjust mode to select ISN firmware version 4 or version 6. The default is version 6.

8. When more than one chiller is used, wire from chiller to chiller using Beldon 9182 cable or equal.

Tuning Notes:

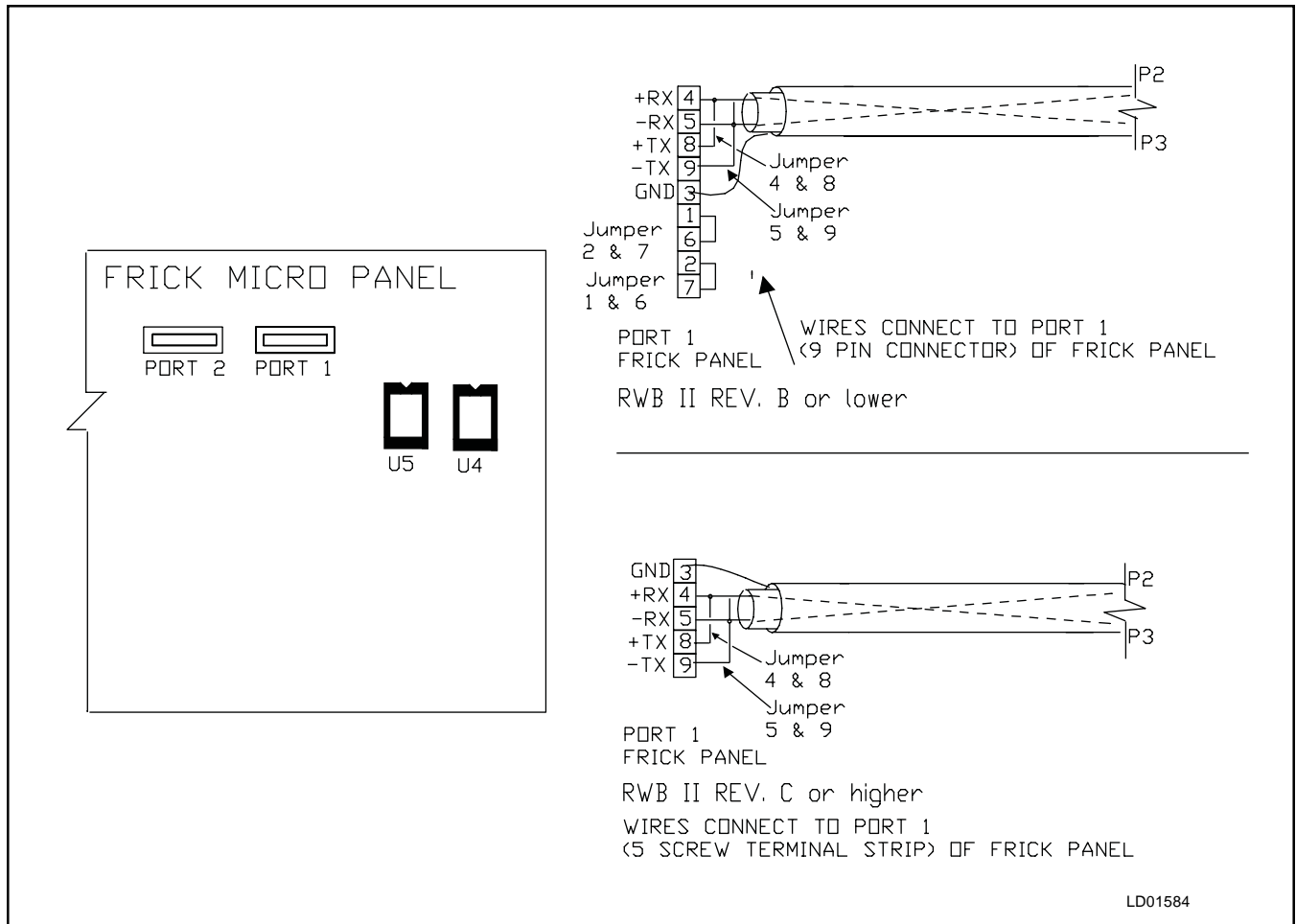
MCL1 must be set to 0 and MCL2 should be set to around 70% on start up of the chiller. The chiller will not ramp up to speed by itself.

At digital input #2 you must disconnect one wire between input 2 and wire 23. This allows the chiller to start in remote.

Also, starting the chiller with a little higher chilled water temperature setpoint than the normal operating temperature will give a smoother start.

YorkTalk Communication Wiring Details

Wiring Diagram Frick Micro Board RWBII Plus and the ISN Translator



To connect the **ISN Controller RS-485** port to the **RWBII OR the RWBII PLUS Frick micro panel** follow directions below:

- Plug the **9 pin connector** into **port 1** of the RWBII Frick panel or wire the five screw terminal strip.
- Wire the **ISN Controller cable end P3 +** to the **pin 4** of the Frick panel.
- Wire the **ISN Controller cable end P2 -** to the **pin 5** of the Frick panel.
- **Jumper the terminals 8 to 4 and 9 to 5.**
- Tape back shield at the **Linc Chiller** and terminate the **Micro panel** to the **GND** terminal.
- **See tuning notes on previous page before starting the chiller.**

