

Installation Manual

Transac 12C[®]



WARNING

This equipment generates, uses, and can radiate radio frequency energy and if not installed according to instructions in this manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

This document is subject to change without notice. Considerable effort is expended to make it a valuable source of information and reference. However, it is not meant to be a substitute for adequate technical training for those involved in the installation and service of this equipment.

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CAUTION

In an emergency (spillage, etc.): Remove all station power by activating the station emergency power cut-off switch (if available). If not available, turn off all breakers controlling power to the forecourt and to the STP.

REASON: The EMERGENCY STOP key will not stop the pumping action of the pumps submerged in tanks, and may not stop the flow of fuel from the hose in all conditions.

GILBARCO TRANSAC 12-C

INSTALLATION MANUAL

1.0 INTRODUCTION

1.1 PURPOSE OF MANUAL

This Manual provides installation information for the Gilbarco Transac 12C (T-12C) Console and preliminary information for T-12C System installation. Prior to installing this system, all field wiring should be in place and tested. Any equipment to be connected with this Console (Dispensing Units, Printer, etc.) will be installed according to manuals furnished with such equipment.

To properly check site criteria and perform preliminary site preparation, the Installer should be familiar with, and have available for reference, all manuals for Dispensing Units, (or Pumps), Printer, and any other equipment to be connected with this Console. Foundation layouts for construction planning are shipped with Gilbarco Dispensing Units.

1.2 RELATED DOCUMENTS

This manual does not include the technical information necessary for programming, operating, or start up of this Console. That information is found in the documents listed below.

MDE1905:	T-12C Manager Manual (includes programming)
MDE1906:	T-12C Operator's Quick Reference Guide
MDE1907A:	T-12C Operator Manual
MDE2065:	T-12C Service Manual (includes Initial Set up information).

1.3 OVERVIEW

The T-12C Console is a solid state, self-service, fuel system controller which interfaces directly with Gilbarco electronic dispensing systems. In addition to providing direct control of fuel dispensing units, the T-12C collects and stores necessary data for various management reports.

Before the T-12C can operate, it must be programmed for prices, price levels, grade assignments to hoses, etc. Various programmable options are available, allowing unique configuration of any location. See MDE1905, T-12C Manager Manual and MDE1907A, T-12C Operator Manual, for Programming and Operating instructions.

1.4 FEATURES

The T-12C is similar to the T-12A and T-12B in operating and programming capabilities with these additional enhancements:

- Four level pricing - Cash/Credit; Day/Night; Split Island
- Real time money display - displays money amount while pumping
- Six grade capability - each pump can be set for any one of six grades
- Programmable Secret Code for management data
- Preset / Prepay Only mode available
- Void Key - cancels prepaid sale before transaction has begun
- Change Key - computes change from amount tendered
- Recompute Key - changes display from cash to credit or vice versa
- Assignable grades - any grade can be assigned to any pump
- Enhanced Shift Totals
- Enhanced Station Totals capability

1.5 OPTIONS:

Each T-12C has various operational options, all programmable, such as:

- Pricing levels (Cash/Credit, Day/Night, etc.),
- Pump control (Full Service or Self Service),
- Method of pay out (Preset/Prepay or Preset/Postpay, Cash/Credit), etc.

These options allow the console to operate as dictated by the needs of a particular business location. If requirements change and other options are required at a later date, it can be easily reprogrammed. Please refer to MDE1905 and MDE1907A for Programming and Operating instructions.

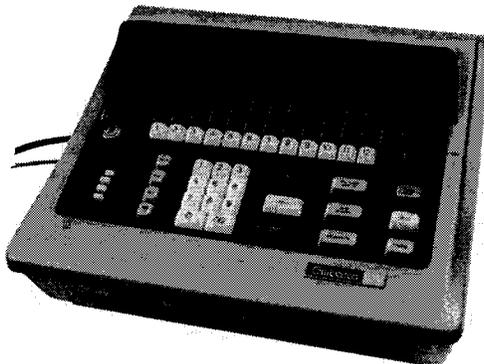


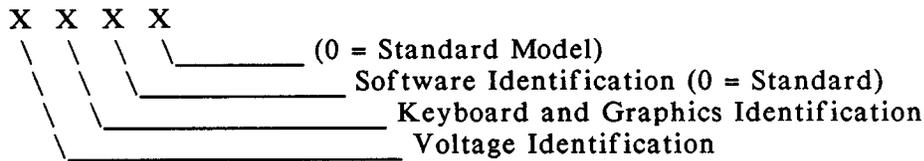
FIGURE 1: T-12C CONSOLE

1.6 SPECIFICATIONS

NAME: T-12C
CONSOLE MODEL NUMBER: PA0188XXXX

Model number breakdown:

PA0188 = Basic Model Number



APPROXIMATE DIMENSIONS:

T-12C CONSOLE:

Height 10.0 inches
 Width 16.0 inches
 Depth 16.0 inches

**TWO-WIRE DISTRIBUTION BOX:
 (PA0133000X)**

Height 5.5 inches
 Length 16.0 inches
 Depth 5.0 inches

POWER REQUIREMENTS (DEDICATED CIRCUIT):

Domestic 115 VAC +15% -10% 60HZ
 Current Drain 3.0 Amp @ 115VAC

OPERATING ENVIRONMENT:

Minimum Temperature +32 Deg. F. (0 Deg. C)
 Maximum Temperature +104 Deg. F (+40 Deg. C)
 Humidity 95% RH Non Condensing

ACCESSORIES:

Keys: (2 of each type)
 Operator Keys
 Manager Keys

NOTES

2.0 INSTALLATION

2.1 BASIC SITE CRITERIA

- Installation must be in accordance with the National Electrical Code NFPA 70, the Flammable and Combustible Liquids Code NFPA 30, and any other applicable codes.
- The site must be equipped with electrical service which will allow compliance with all the installation requirements of the complete T-12C System (dispensing units as well as the console).
- An enclosed weather protected structure must be located on the site for housing the T-12C and its associated peripherals (Two-Wire Distribution Box and its associated cables; Printer, if used, and its associated cables, etc.). The ambient temperature inside the structure should not exceed +40 Deg.C (104 Deg.F). Maximum room ambient temperature is permissible only if the T-12C is allowed free air circulation (at least 4 inches on all 4 sides).
- The T-12C Console should be located in a position that allows the Operator unobstructed view of all hose outlets.
- The configuration planning should ensure that the operator has access to the Two-Wire Distribution Box without leaving the room.

2.2 PREPARATION

Prior to beginning the actual installation of the T-12C System, an inspection of the site and of the delivered equipment should be made to ensure that the necessary materials are on hand and that the site meets installation requirements.

■ UNPACKING EQUIPMENT:

When the equipment arrives at the installation site, each unit should be unpacked and inspected for possible shipping damage. If damage is evident, it must be reported to the carrier. Shipping damage is not covered under Gilbarco's warranty policy. After visual inspection, place the unit back in its shipping carton to prevent undue exposure to the elements, and store indoors until ready for installation.

PREPARATION - CONT.**■ RETURN OF COMPONENTS:**

Components returned to Gilbarco under warranty or for repairs are subject to severe shipping damage if not packaged properly. Consoles should be returned in original shipping cartons if possible. If original packing materials are unavailable, use a durable reinforced corrugated box and obtain suitable packing material such as "PAKON" polyfoam chips, polyurathene foam chips, or polystyrene foam chips. Fill bottom of box with at least 2 inches of packing material. Make certain the component is firmly packed. It is also recommended that the package be fully insured.

All returned items must be accompanied by an RGA form. Remember to include a description of the malfunction and return shipping information.

WARNING: If the component arrives at Gilbarco in a damaged condition and it is ascertained that the damage was a direct result of improper packing, such damage will not be covered under the original factory warranty and the customer will be held responsible for the cost of the repair necessary to correct said damage.

2.3 FIELD WIRING CONSIDERATIONS:**CONDUIT:**

- A wire trough located in the area of the Two-Wire Distribution Box (for the routing of wiring and for termination of the conduits from dispensing units) will be necessary for making wire connections for submerged turbine pump control.
- One 3/4 inch conduit is required for each dispensing unit or self-contained pump - single or dual.

NOTE: It is permissible to run two larger conduits to two contractor-installed junction boxes. Smaller conduits can then be run between these junction boxes and the dispensing units. However, this method is more expensive, more susceptible to wiring errors, and more difficult to troubleshoot than running separate conduits to each dispensing unit.

FIELD WIRING CONSIDERATIONS - CONT.**CONDUIT - CONT.**

- All conduits and wiring must meet the requirements of N.E.C. and Local electrical regulations and codes.
- The threaded connections on all conduits must be drawn up tight.
- When pulling wires through conduit, avoid damage to the wire insulation.

NOTE: If an Intercom system is used, a separate conduit and 3-wire shielded cable must be between the attendant's office and the Island Speakers. Some Gilbarco Dispensing Units are available with a factory installed speaker and with conduit connections at the base of the unit. If other speakers are used, they must be installed a minimum of four feet above the island and 18 inches from any dispensing unit in accordance with N.E.C. and Local electrical codes.

WIRING:

- Use only stranded wire for Gilbarco equipment. When making wire connections, Gilbarco recommends the use of U/L listed wire connectors which provide a secure connection. Particular attention should be paid to multiple wire connections.
- Foundation layouts will be found with the Dispensing Units shipped to the site.
- Cabling and wiring connection drawings to be used as a guide for installing the Fuel Dispensing Units for the T-12C System are provided in the Installation Manual which is furnished with Gilbarco Dispensing Units.

FIELD DATA WIRE PREPARATION: (WIRE TERMINALS)

- Field data wire to be terminated on terminal blocks TB-1, TB-2, and TB-3 (in the Distribution Box) must be equipped with terminals. Use Thomas and Betts, Part Number RB1113 or equivalent. Attach the terminals to the wire in this manner:

Strip each wire 1/4 inch and carefully crimp on terminal. Care should be taken not to damage the wire during this process.

2.4 PRELIMINARY FIELD WIRING CHECK OUT

BEFORE APPLYING AC POWER TO ANY PART OF THE SYSTEM, MAKE SURE ALL PRELIMINARY TEST PROCEDURES FOR FIELD WIRING HAVE BEEN COMPLETED AND ANY FAULTY WIRING HAS BEEN CORRECTED.

PHASING CHECK:

Verify visually and with a voltmeter that all hot wires (A1, A2, A3, B3) are on the same transformer leg (120 VAC phase).

TEST EQUIPMENT:

VOLT-OHMMETER - Simpson Model 260-6 or equivalent.

Internal battery voltage.....	10 volts or less
Sensitivity.....	20,000 ohms per volt
Minimum scale.....	Rx 20,000

WIRE INSULATION TEST:

TO AVOID SERIOUS EQUIPMENT DAMAGE, THE INSULATION ON ALL FIELD WIRING MUST BE TESTED WITH A MEGGER OR SIMILAR HIGH VOLTAGE TESTER PRIOR TO HOOK-UP OF ANY GILBARCO ELECTRONIC OR ELECTRO-MECHANICAL DELIVERY SYSTEM.

Check field wiring by performing 500 VDC megger tests of all installed wires prior to hook-up of the system. These tests are to be made between adjacent wires and from each wire to earth ground. Insulation resistance must be in excess of 50 megohms. Correct faulty wiring as necessary and retest.

Instructions for performing the MEGGER test are given on Page 9 of this manual. Other information relating to MEGGER testing can usually be found in the manufacturer's literature that is furnished with the test unit.

TEST EQUIPMENT:

500 VDC MEGGER TEST UNIT - Biddle Model 21811 or equivalent.

This tester will verify wire insulation quality. If not available, use best possible substitute unit nearest 500 VDC.

MEGGER TESTING OF WIRE INSULATION

TO AVOID SERIOUS EQUIPMENT DAMAGE, ALL FIELD WIRING MUST BE MEGGER TESTED PRIOR TO HOOK-UP OF ANY GILBARCO ELECTRONIC OR ELECTROMECHANICAL DELIVERY SYSTEM.

Numbers on the MEGGER scale range from 1 to infinity. Most MEGGERS read directly in Megohms (millions of ohms). To pass this test, a wire must show a *minimum* resistance of 50 Megohms. Follow these procedures for proper wire testing.

1. On one end of a conduit, cut all wires flush and make sure that no bare ends touch other wires or the conduit.
2. On the other end of the same conduit, strip all wires (1/2 inch) and twist the entire bundle together.
3. Attach one MEGGER probe to the wire bundle and the other to the conduit.
4. Activate the MEGGER and read the resistance.

If the reading is lower than 50 Megohms, proceed to Step 5.

If the resistance reading is 50 Megohms or higher, separate one wire from the bundle, attach one MEGGER probe to it and proceed to Step 7.

5. Separate one wire from the bundle. Attach one MEGGER probe to this wire and leave the other one attached to the conduit.
6. Activate the MEGGER and take a reading. If the reading is 50 Megohms or higher, go to Step 7. If the reading is lower than 50 Megohms, that wire is defective and must be replaced. Mark the wire to so indicate and continue testing at Step 5.
7. Leave one probe attached to the single wire and attach the other MEGGER probe to the bundle.
8. Activate the MEGGER and take a reading. If the reading is lower than 50 Megohms, the wire just tested has defective insulation and must be replaced. If the reading is higher than 50 Megohms, the wire just tested is good. Mark the wire (good or defective) and continue testing at Step 5. through 8 for all the other wires.

This completes the MEGGER Testing of the wires.

2.5 ELECTRICAL CONSIDERATIONS

Improper wiring can cause failures which are not covered by the Gilbarco warranty. Care must be taken to establish a "pure" path to ground to prevent picking up any stray electrical noise.

All electrical wiring for T-12C must conform to the National Electrical Code (NEC) and local wiring codes as well as the following criteria.

■ TYPE OF RECEPTACLE

The receptacle providing power to T-12C must be a properly installed *isolated ground receptacle* (Hubbell # IG5261 or equivalent). This type receptacle is easily identified by its bright orange color and by the triangle embossed into the face of the outlet. The green grounding screw must be attached to the grounding conductor described below (see Conduit and Wiring).

■ PROXIMITY OF EQUIPMENT TO RECEPTACLE

The T-12C is equipped with a standard 8-foot AC power cord, which plugs into the AC receptacle described above. Locate the T-12C console within approximately 6 feet of the receptacle. **Do not use an extension cord.**

■ CONDUIT WIRING, AND GROUNDING

One conduit is required from the breaker panel to the T-12C location. This conduit must contain three wires (stranded*), each with a minimum wire size of 14 AWG -120VAC, Neutral, and Earth Ground.

The "hot" and neutral conductors may originate at a main or sub-panel and must *not* be part of a multi-wire circuit in which two or more "hot" conductors share one neutral. The neutral bus must be bonded to a metal water piping system and an approved earth ground at the service equipment.

The grounding conductor in the conduit must be sized according to NEC and must be routed through sub-panels and junction boxes without being bonded to sub-panels, junction boxes, or conduit. This ground cannot be used for grounding the outlet box, which must be grounded using approved means. **Do not use the electrical conduit to provide an isolated ground.**

* All installations of Gilbarco equipment must use stranded wire.

ELECTRICAL CONSIDERATIONS - CONT.**■ ISOLATION OF ELECTRICAL CIRCUIT**

The circuit which powers the T-12C should be a dedicated circuit - i. e., it should not power any other device. The T-12C circuit should not share a conduit with wiring for a device which draws high amperage, (compressor, freezer, etc.) or any device which is a source of RFI, (TV, microwave, intercom, 2-way radio, etc.). It is permissible for the T-12C to share a conduit with a Tank Monitor or Dot 2 Printer.

2.6 PHYSICAL PLACEMENT

- The T-12C must be located in an area which is not subjected to extreme variations in temperature. The ambient temperature must remain relatively constant as outlined in the SPECIFICATIONS section of this manual.
- Do not install the T-12C in a position which would subject it to direct sunlight. If conditions so dictate, then a suitable sunscreen must be provided.
- All cables should be installed in such a manner that they will be protected from damage or accidental disconnection, preferably routed along a wall or under a counter and secured with Ty-Wraps or suitable cable clamps.
- The Two-Wire distribution box should be installed where it will be accessible to the operator, preferably within sight of the console. The standard cable length from distribution box to console is 11 feet. Longer cables are available, and splicing is permissible if the connections are properly secured and protected. The system will operate efficiently with up to 200 feet between the console and distribution box.
- The console should be located in an area which minimizes the possibility of liquids being spilled into it.

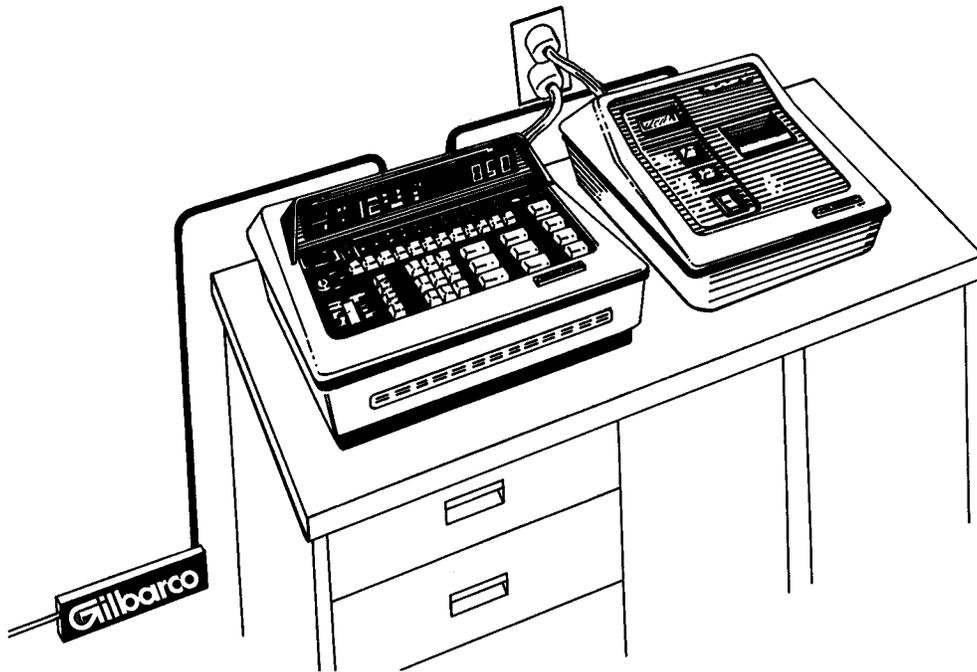


FIGURE 2: T-12C CONSOLE, PRINTER AND DISTRIBUTION BOX

2.7 COMPONENTS:

All parts of the T-12C are located inside the console except the AC power cord and the cable which connects the T-12C to the Two-Wire Distribution Box, both of which protrude through the rear panel. Essential system components include the Two-Wire Distribution Box and the fuel Dispensing Units. The components and their associated cables must be ordered separately.

■ PRINTER

A DOT-2 Printer usually completes the system, but is not considered essential to system operation.

■ TWO-WIRE DISTRIBUTION BOX

One 2-Wire Distribution Box, PA01330000, is required for up to 12 hoses. Use Cable R17651-Gx* to connect Distribution Box to the T12C console. All unused switches in the Distribution Box should be in the ISOLATE position.

* G1 = 11 feet; G2 = 25 feet; G3 = 50 feet; G4 = 75 feet; G5 = 150 feet.

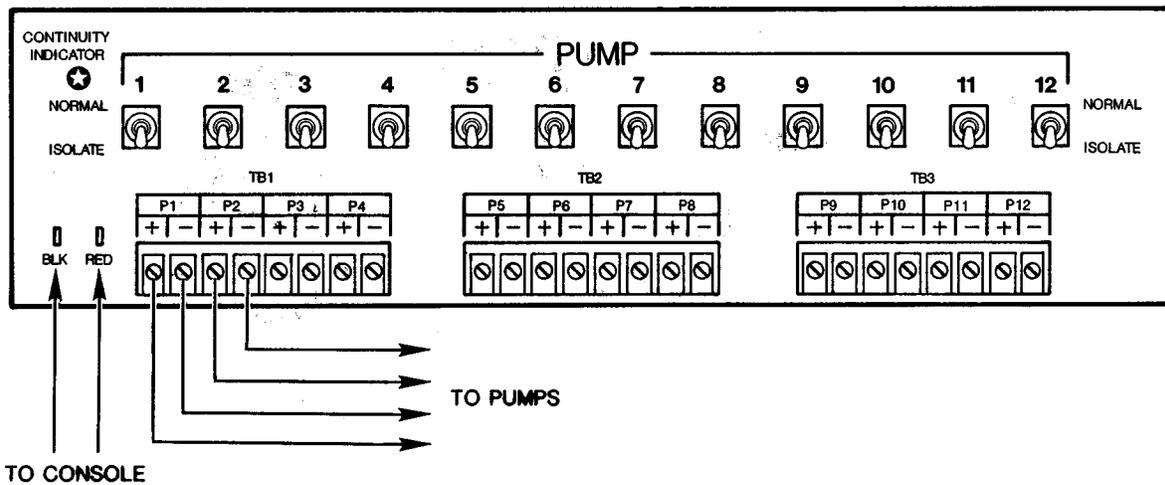


FIGURE 3: TWO WIRE DISTRIBUTION BOX

2.8 SYSTEM CONFIGURATION

All fuel dispensers should be installed and set up according to instructions in their respective manuals for installation and Two-Wire operation.

All dispensers (other than MPDs) which will dispense Grades 4, 5, or 6 should be programmed to Grade 1 on the dispenser logic board.

In a new installation, the fuel dispensers should be powered up and checked for response to the operating lever before turning the distribution box switches to NORMAL. However, it is recommended that the prices all be set from the console and proper grade assignments verified by visually checking the PPU on each dispenser.

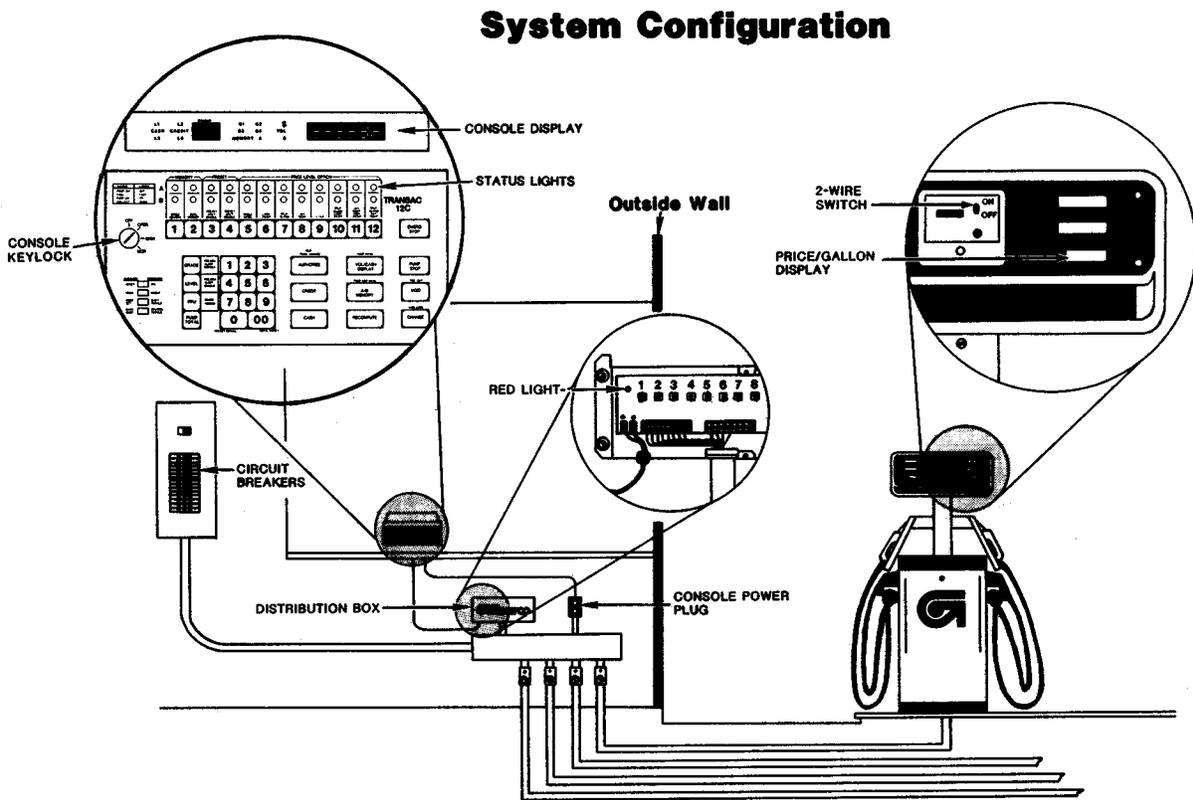


FIGURE 4: T-12C SYSTEM CONFIGURATION

Gilbarco Inc., 7300 W.Friendly Ave., P.O.Box 22087, Greensboro,N.C. 27420