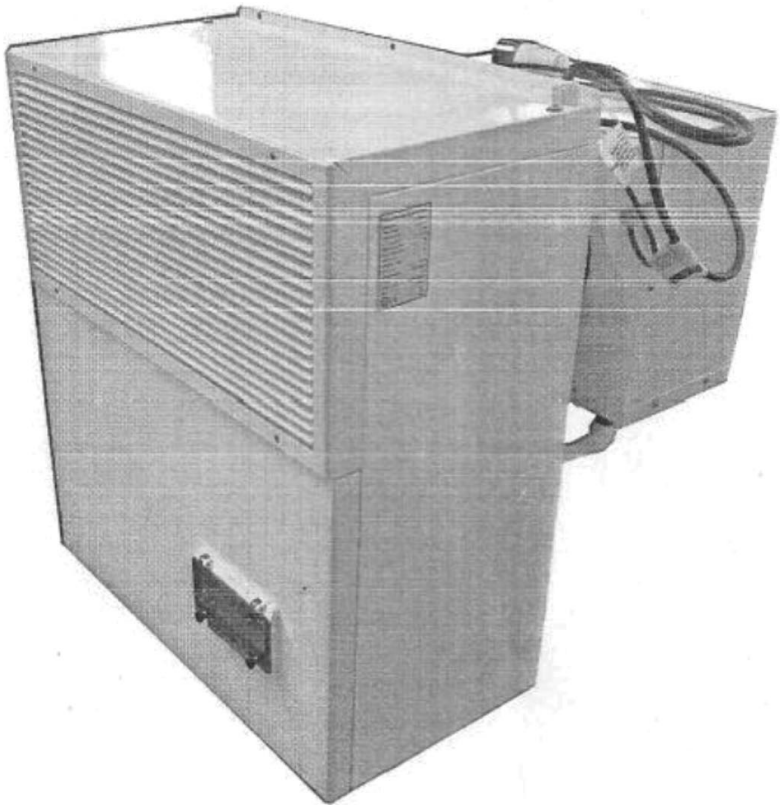
# OPERATION MANUAL

**TYPE: LY030, LY050, LY075, LY100, LY150, LY200**



To guarantee the operation of the unit correctly and safely, please read the manual carefully before using.
Please ensure technician to install the unit to keep the unit running properly.
**The unit must be earthed reliably.**

# SAFETY PRECAUTION

**Caution**

**ELECTRIC SHOCK HAZARD**
*THE UNIT MUST BE GROUNDED
*TURN OFF BEFORE SERVICING
*ELETRIFY AFTER WIRING

**INJURY HAZARD**
DO NOT PUT HAND TO THE FAN

**EXPLOSION OR FIRE HAZARD**
*DO NOT FIRE THE UNIT.
*KEEP THE REFRIGERANT OF SYSTEM UNDER PRESSURE
*USE ONLY APPROVED REFRIGERANT

**OTHERS**
*DO NOT COVER THE AIR OUTLET
*DO NOT BLOCK THE DRAIN PIPE

# UNIT INTRODUCTION

LY series Unit is all equipped with unitary refrigeration unit with air cooling condenser.It can be directly applied without debugging by customer.

The unit is installed by piston compressor of TECUMSEH with R404A refrigerant.

Major advantage:

A. Optimization design:The same installation as window type air conditioner.Just making a square hole on the wall and install it directly,which can save 60% installation time.

B. Silencing technology:The unit adopts hermetic air cooling condenser,fan blade use big tilt angle and pit indent silencing technology which make the structure compact as well as saving the energy and reducing the noise.

C. Adopt tilt type condenser which can make the outline size smaller.

D. Anti-corrosion case:The unit uses galvanization steel with high anti-corrosion layer under strictly salt moisture testing,which enable the unit to bear environment.

E. Well-chosen components:Main heavy of the unit are used "Danfoss"brands, such as,filter drier and expansion valve with high reliability.

F. Environment friendly:Unit is equipped with single phase hermetic piston compressor with R404A refrigerant

G. Easy operation:It is equipped with automatic defrosting cycle system. Therefore it can be adjusted with customer's requirement.Defrost frequency periodic and can be controlled by electric controller.In addition,it can use manual defrost by hot gas.

H. Optimization design can integrate the unit.It can make it easy to install debugging and can reduce the rig-up time and installation cost.

I. The removable shell make it easy to adjust the expansion valve.

# MODEL IDENTIFICATION

**LY: Integrated unit**

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Design serial NO.:A……Z

Shell type:Default:Monobloc

S:Monobloc (Split system)

Back pressure:M/H:Middle/High back pressure,

Evaporating Temp:-15~+5℃;

L: Low back pressure,

Evaporating Temp:-30~-10℃

Refrigerant:F:R22,G:R404a,Z:407C,N:R134a

Voltage Code:D:single phase 220V~240V/1/50Hz;

S:three phase 380V~415V/3/50Hz;

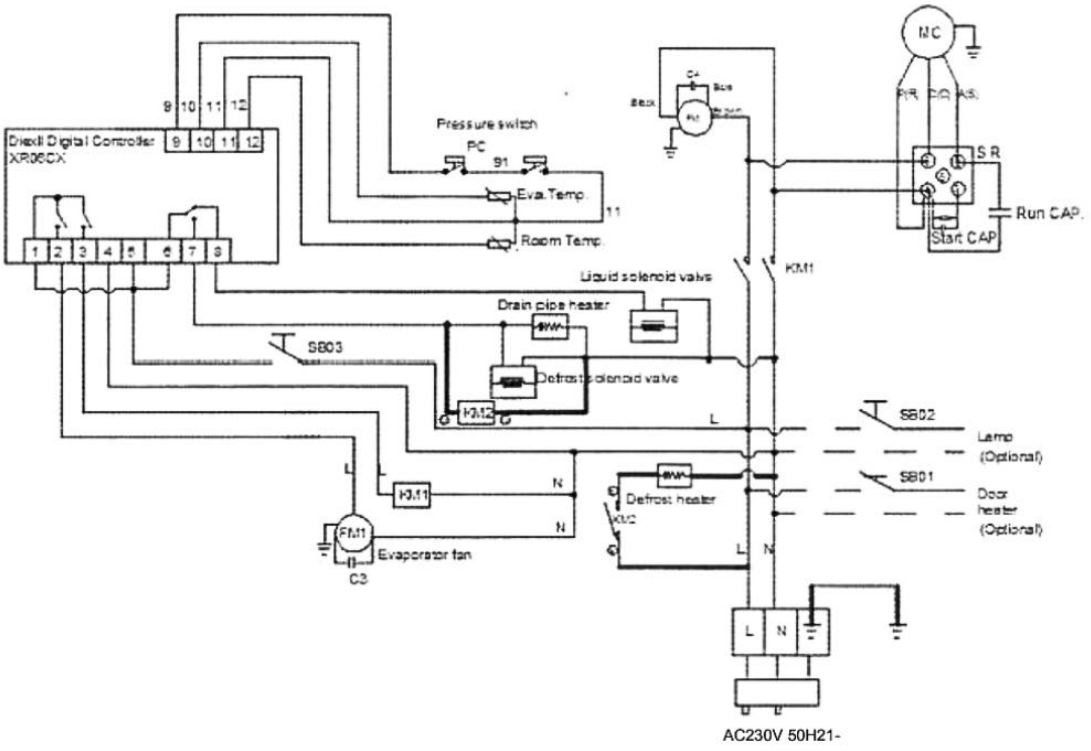
C:single phase 208V~230V/1/60Hz;

R:three phase 400V~460V/3/60Hz;

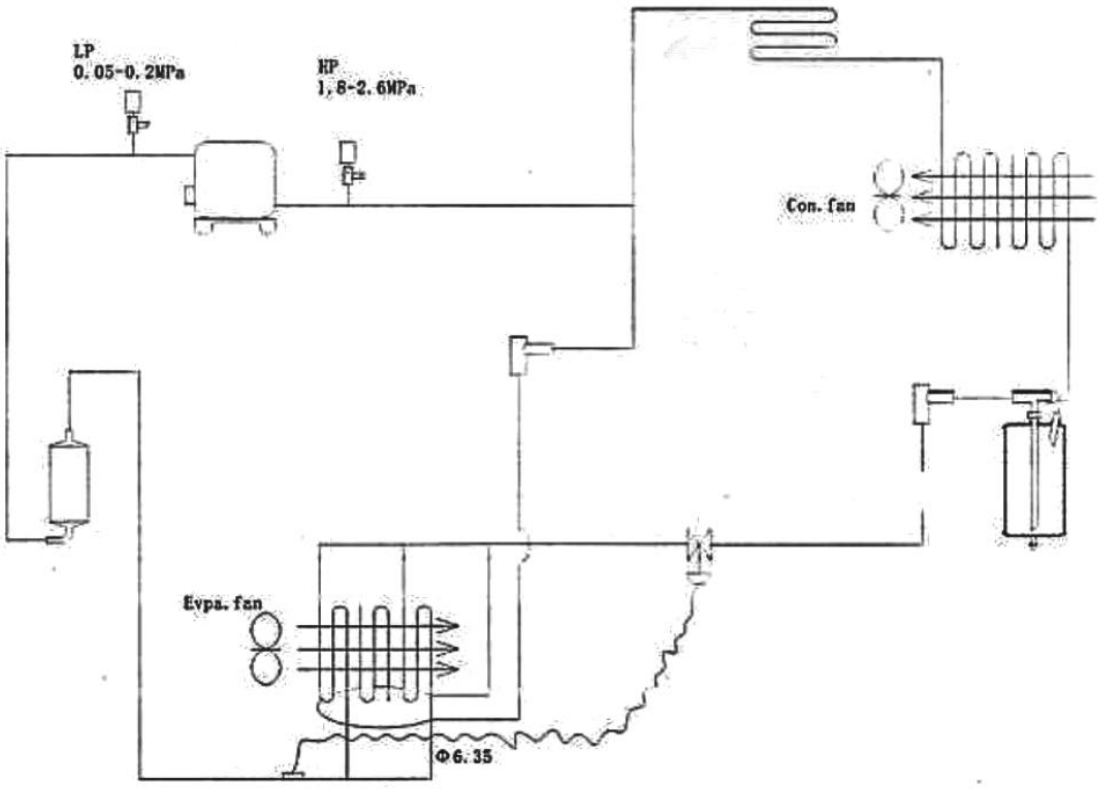
Nominal capacity:HP×100

LY:Stand for "ESSENTEC"Monobloc

# WIRING DRAWING OF UNIT




# PRINCIPLE DIAGRAM

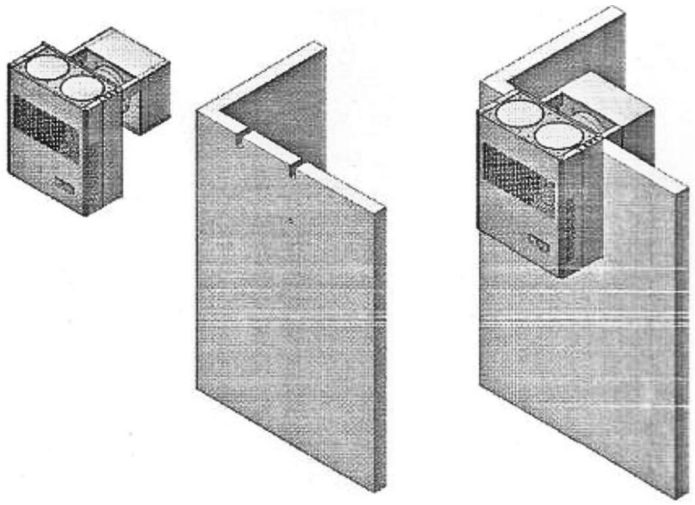


# Installation

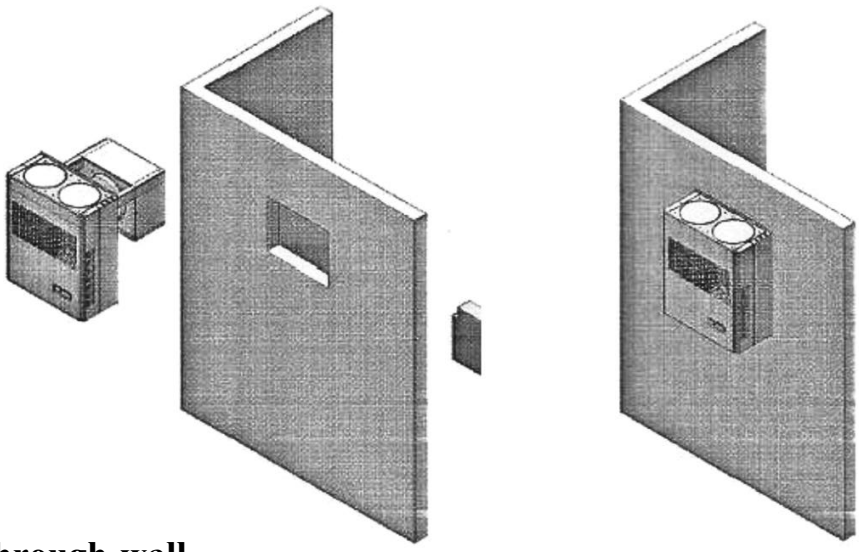
## Straddle-wall and through-wall

Requirements for installation
Demand a wall at least width 80CM

1. Preparation Cut a hole on the wall in accordance with the drawing.
2. Installation
   Put the unit on the hole by the drawing, and fix the bolt on the wall.
3. Wiring the refrigerator lamp.
4. Put the plug to the socket.



**Straddle-wall**



**Through-wall**

# Operation

1. **Check before operation**

Check the unit,make sure that the unit has been installed correctly,the power cable and the ground wire connected reliably.

This unit with refrigerant.

### 1.1. PLEASE READ BEFORE USING THIS MANUAL

This manual is part of the product and should be kept near the instrument for easy and quick reference.

The instrument shall not be used for purposes different from those described hereunder.It cannot be used as a safety device.

Check the application limits before proceeding.

### 1.2. SAFETY PRECAUTIONS

Check the supply voltage is correct before connecting the instrument.

Do not expose to water or moisture:use the controller only within the operating.

2. **Power on**

After power on,the digital controller will display currentroom temperature.One minute 睦 delay,the compressor working,while indicator on.When evaporator temperature under 练 30℃,the evaporator fan working,while “” indicator on.

3. **Base operation**

Y+▲ To lock &unlock the keyboard

SET+V To enter in programming mode.

SET+▲To return to the room temperature display

### 3.1. How to change the room temperature

Push the SET key for more than 2 seconds to change the Set point value;

The value of the set point will be displayed and the LED starts blinking;

To change the set value push the up or down arrows within 10s.

To memories the new set point value push the SET key again or wait 10s.

Then press "SET+DOWN"more than 3 seconds and set HY.The range of room temperature is “SET” ~ "SET+HY”

### 3.2. HOW TO START A MANUAL DEFROST

Push the DEF key for more than 2 seconds and a manual defrost will start.

### 3.3. How to set defrost cycles

Press“SET+DOWN”more than 3 seconds and set ID.(0 ~ 99h)

Determines the time interval between the beginning of two defrost cycles. We advise customer to set the figure according room circumstance, such as humidity,room temperature and so on.

# ADD1.DEFAULT SETTING VALUES

| LABEL | DESCRIPTION | RANGE | DEFAULT |
|---|---|---|---|
| **REGULATION** | | | |
| **SET** | | | 2(-18) |
| **Hy** | Differential | 0.1÷25℃/1÷45°F | 2.0℃ |
| **LS** | Minimum Set Point | -55℃+SET/-67F÷SET | -10℃(-40℃) |
| **US** | Maximum Set Point | SET÷99℃/SET÷210°F | 30℃ |
| **ot** | First probe calibration | -9.9÷9.9℃/-18÷18°F | 0.0 |
| **P2** | Second probe presence | n-Y | y |
| **oE** | Second probe calibration | -9.9÷9.9℃/-18+18°F | 0.0 |
| **od** | Outputs activation delay at start up | 0÷99 min | 1 |
| **AC** | Anti-short cycle delay | 0+50 min | 4 |
| **Cy** | Compressor ON time faulty probe | 0÷99 min | 15 |
| **Cn** | Compressor OFF time faulty probe | 0÷99 min | 30 |
| **DISPLAY** | | | |
| **CF** | Measurement units | ℃-F | ℃ |
| **rE** | Resolution(only for ℃) | dE-in | dE |
| **Ld** | Default Display | P1-P2-SP | P1 |
| **dy** | Display delay | 0+15min | 0 |
| **DEFROST** | | | |
| **td** | Defrost type | EL-in | In |
| **dE** | Defrost termination temperature | -50+50℃/-58÷122F | 12℃ |
| **id** | Interval between defrost cycles | 0÷99 hours | 3 |
| **Md** | Maximum length for defrost | 0÷99 min. | 20 |
| **dd** | Start defrost delay | 0+99 min. | 0 |
| **dF** | Display during defrost | rt-in-SP-dF | dF |
| **dt** | Drip time | 0÷99 min | 5 |
| **dP** | Defrost at power-on | y-n | N |
| **FANS** | | | |
| **FC** | Fans operating mode | cn-on-cY-oY | On |
| **Fd** | Fans delay after defrost | 0÷99 min | 2 |
| **FS** | Fans stop temperature | -50+50℃/-58+122°F | 40°C |
| **ALARMS** | | | |
| **AU** | Maximum temperature alarm | ALL+99℃/ALL+210°F | 50℃ |
| **AL** | Minimum temperature alarm | -55℃+ALU/-67°F÷ALU | -50℃ |
| **Ad** | Temperature alarm delay | 0+99 min | 15 |
| **dA** | Exclusion of temperature alarm at startup | 0÷99 min | 90 |
| **DIGITAL INPUT** | | | |
| **iP** | Digital input polarity | cL-oP | oP |
| **iF** | Digital input configuration | EL-bL-dr-dF-Li-db | BA |
| **di** | Digital input delay | 0+99 min | 0 |
| **dC** | Compressor and fan status when open door | no /Fn/cP/Fc | FC |
| **rd** | Regulation with door open | n-Y | Y |
| **OTHER** | | | |
| **d1** | Thermostat probe display | Read Only | --- |
| **d2** | Evaporator probe display | Read Only | --- |
| **Pt** | Parameter code table | Read Only | --- |
| **rL** | Firmware release | Read Only | --- |

Note:() Are the low back units' sets.

CA Alarm Trouble Shooting

The direct reason for CA alarm is high pressure switch or low pressure switch entering protection mode.

| No. | Description | Cause | Treatment |
|---|---|---|---|
| 1 | CA alarm | High pressure switch or Low pressure switch failure | slightly hit with rubber hammer or replace the High pressure switch |
| 2 | | The controller wire connection#9 or or#11 is not well connected | Tighten the wire connection |
| 3 | | Gas leak | 1. Check the pressure<br>2. Find the pin hole or leakage point,repair it then vacuum the system and recharge gas |
| 4 | | Evaporator frozen | 1. Check the evaporator whether it is frozen;<br>2. Manual melt the ice and clean,then restart. |
| 5 | | Evaperator fan motor failure | 1. Fan motor does not rotate or the speed is visibly slow.<br>2. The fan motor is frozen,or need to replace the fan motor |