



MANUFACTURERS OF COMPUTERIZED TEMPERATURE CONTROL FOR FORTY-FIVE YEARS

PROUDLY MADE IN FULTON, MISSOURI, USA

A certified "Service Disabled Veteran Owned Small Business" (SDVOSB)

2105 Power Lane, Fulton, Missouri 65251

Facility owners often do, and should, budget a percentage of heating and cooling equipment purchase cost for replacement. This amount (Replacement Asset Value [%RAV]) varies widely based on mechanical equipment age and condition, and how aggressive an owners maintenance program is.

Whether a facility owner budgets this or not, the replacement cost is fixed by the market on the day that a piece of equipment needs to be replaced. That is, if a piece of equipment fails today, the cost of the replacement is relatively fixed to the here and now. That cost can be divided backwards through the years and extracted against the initial cost of the old system. And so, your %RAV at that time either rewards or punishes you for the level of care afforded to your equipment over the years. There is seldom an in-between.

There's another issue though; In the years between initial purchase and replacement, there was required maintenance. The more you spent on maintenance, the higher your lifecycle cost. Inversely, the less you spent on maintenance, the lower your lifecycle cost. The reduced equipment lifetime due to premature failure however, adds to the lifecycle cost.

For HVAC equipment, the numbers have been fairly well analyzed. If there are no specific exceptions to the rule, typical target %RAV values are 2% to 5% of total ownership value per year. Newer equipment is typically budgeted at 1%-2% RAV while older equipment is budgeted at values 7% or more.

The lifecycle cost for a temperature control system however, does not experience such public scrutiny. Simply, the temperature control system manufacturers and dealers don't want you to be aware of it. We analyze our customers CTC ownership constantly, and we keep our customers informed.

The numbers don't lie.

Direct Digital Control (DDC) system owners are rarely told that they should add a cost-of-ownership line item in the yearly budget, yet they are charged a "maintenance" contract. This adds to the lifecycle cost of the control system. Failed system components and constant service calls not covered by the "contract" add to the lifecycle cost. The time the owners maintenance team spends trying to get it to work also adds to the lifecycle cost. When an owner gets tired of shelling out this extra money, they typically work out a budget amount in order to put a stop to the surprises. They usually find they need to budget 10%-15% of the initial purchase price per year of ownership, but then wind up actually spending 15%-22%.

Web: www.epmctc.com

**Fulton, Mo. (573) 642-6550 / Fax (573) 642-6556 Wichita, Ks. (316) 269-2660
Service (573) 642-6550**

The most common last ditch effort to regain control of their facility budget is to cancel, or more accurately, cease to renew the controls “maintenance” contract. The costs go “runaway” after that.

An Actual Engineering Solution to what has always been an Engineering Problem:

- EPM does not offer maintenance contracts because our customers don’t need them. You can take the cost of your existing maintenance contract off the top of your lifecycle costs.
- If you call us, we will answer and help you, at no cost. That comes off the top as well.
- If we can access your system remotely and you still need on-site help, we will not charge you for travel. How much have you taken off your current lifecycle cost at this point?

Our systems are designed to last the life of the facility they are installed in, and we train your maintenance team and operators to use and service the system, with our help if needed.

If your facility frequently replaces equipment with completely different kinds of equipment, your lifecycle cost may go as high as 2.5%, but most of our customers enjoy a lifecycle cost of less than 1%. You can budget a 0% RAV for the CTC system, and even enjoy a significantly reduced mechanical equipment %RAV as well.

After all these cost reductions, then we can talk about the 24% average reduction in energy costs, higher if you have a working DDC system.

This is what intelligent controls should be. This is what we have done for 45 years.

What is your Controls lifecycle cost now?

A) What year was your control system installed?

A) _____

B) How much is your annual control system maintenance contract?

B) _____

C) What was the first year you no longer paid a control system maintenance contract (2026 if still paying)?

C) _____

D) How much have you spent on ALL service and modifications (upgrades) for the control system since it's installation?

D) _____

E) What did your original control system cost?

E) _____

$$\left[\left(\frac{B * (C - A) + D}{E} \right) / (2026 - A) \right] * 100 = \underline{\hspace{2cm}} \%$$

Are you less than 1% ?



MANUFACTURERS OF COMPUTERIZED TEMPERATURE CONTROL FOR FORTY-SIX YEARS

Annual Lifecycle Expenditure Chart

Lifecycle Percentage (from Worksheet)	Initial BAS System Cost													EPM aggressive facility changes	EPM with increasingly aggressive facility changes	Everybody Else	Total \$ spent on system Annually
	\$30,000	\$53,500	\$77,000	\$100,500	\$124,000	\$147,500	\$171,000	\$194,500	\$218,000	\$241,500	\$265,000	\$288,500	\$312,000				
0.25%	\$75.00	\$133.75	\$192.50	\$251.25	\$310.00	\$368.75	\$427.50	\$486.25	\$545.00	\$603.75	\$662.50	\$721.25	\$780.00				
0.50%	\$150.00	\$267.50	\$385.00	\$502.50	\$620.00	\$737.50	\$855.00	\$972.50	\$1,090.00	\$1,207.50	\$1,325.00	\$1,442.50	\$1,560.00				
0.75%	\$225.00	\$401.25	\$577.50	\$753.75	\$930.00	\$1,106.25	\$1,282.50	\$1,458.75	\$1,635.00	\$1,811.25	\$1,987.50	\$2,163.75	\$2,340.00				
1.00%	\$300.00	\$535.00	\$770.00	\$1,005.00	\$1,240.00	\$1,475.00	\$1,710.00	\$1,945.00	\$2,180.00	\$2,415.00	\$2,650.00	\$2,885.00	\$3,120.00				
1.25%	\$375.00	\$668.75	\$962.50	\$1,256.25	\$1,550.00	\$1,843.75	\$2,137.50	\$2,431.25	\$2,725.00	\$3,018.75	\$3,312.50	\$3,606.25	\$3,900.00				
1.50%	\$450.00	\$802.50	\$1,155.00	\$1,507.50	\$1,860.00	\$2,212.50	\$2,565.00	\$2,917.50	\$3,270.00	\$3,622.50	\$3,975.00	\$4,327.50	\$4,680.00				
1.75%	\$525.00	\$936.25	\$1,347.50	\$1,758.75	\$2,170.00	\$2,581.25	\$2,992.50	\$3,403.75	\$3,815.00	\$4,226.25	\$4,637.50	\$5,048.75	\$5,460.00				
2.00%	\$600.00	\$1,070.00	\$1,540.00	\$2,010.00	\$2,480.00	\$2,950.00	\$3,420.00	\$3,890.00	\$4,360.00	\$4,830.00	\$5,300.00	\$5,770.00	\$6,240.00				
2.25%	\$675.00	\$1,203.75	\$1,732.50	\$2,261.25	\$2,790.00	\$3,318.75	\$3,847.50	\$4,376.25	\$4,905.00	\$5,433.75	\$5,962.50	\$6,491.25	\$7,020.00				
2.50%	\$750.00	\$1,337.50	\$1,925.00	\$2,512.50	\$3,100.00	\$3,687.50	\$4,275.00	\$4,862.50	\$5,450.00	\$6,037.50	\$6,625.00	\$7,212.50	\$7,800.00				
2.75%	\$825.00	\$1,471.25	\$2,117.50	\$2,763.75	\$3,410.00	\$4,056.25	\$4,702.50	\$5,348.75	\$5,995.00	\$6,641.25	\$7,287.50	\$7,933.75	\$8,580.00				
3.00%	\$900.00	\$1,605.00	\$2,310.00	\$3,015.00	\$3,720.00	\$4,425.00	\$5,130.00	\$5,835.00	\$6,540.00	\$7,245.00	\$7,950.00	\$8,655.00	\$9,360.00				
3.25%	\$975.00	\$1,738.75	\$2,502.50	\$3,266.25	\$4,030.00	\$4,793.75	\$5,557.50	\$6,321.25	\$7,085.00	\$7,848.75	\$8,612.50	\$9,376.25	\$10,140.00				
3.50%	\$1,050.00	\$1,872.50	\$2,695.00	\$3,517.50	\$4,340.00	\$5,162.50	\$5,985.00	\$6,807.50	\$7,630.00	\$8,452.50	\$9,275.00	\$10,097.50	\$10,920.00				
3.75%	\$1,125.00	\$2,006.25	\$2,887.50	\$3,768.75	\$4,650.00	\$5,531.25	\$6,412.50	\$7,293.75	\$8,175.00	\$9,056.25	\$9,937.50	\$10,818.75	\$11,700.00				
4.00%	\$1,200.00	\$2,140.00	\$3,080.00	\$4,020.00	\$4,960.00	\$5,900.00	\$6,840.00	\$7,780.00	\$8,720.00	\$9,660.00	\$10,600.00	\$11,540.00	\$12,480.00				
4.25%	\$1,275.00	\$2,273.75	\$3,272.50	\$4,271.25	\$5,270.00	\$6,268.75	\$7,267.50	\$8,266.25	\$9,265.00	\$10,263.75	\$11,262.50	\$12,261.25	\$13,260.00				
4.50%	\$1,350.00	\$2,407.50	\$3,465.00	\$4,522.50	\$5,580.00	\$6,637.50	\$7,695.00	\$8,752.50	\$9,810.00	\$10,867.50	\$11,925.00	\$12,982.50	\$14,040.00				
4.75%	\$1,425.00	\$2,541.25	\$3,657.50	\$4,773.75	\$5,890.00	\$7,006.25	\$8,122.50	\$9,238.75	\$10,355.00	\$11,471.25	\$12,587.50	\$13,703.75	\$14,820.00				
5.00%	\$1,500.00	\$2,675.00	\$3,850.00	\$5,025.00	\$6,200.00	\$7,375.00	\$8,550.00	\$9,725.00	\$10,900.00	\$12,075.00	\$13,250.00	\$14,425.00	\$15,600.00				
10.00%	\$3,000.00	\$5,350.00	\$7,700.00	\$10,050.00	\$12,400.00	\$14,750.00	\$17,100.00	\$19,450.00	\$21,800.00	\$24,150.00	\$26,500.00	\$28,850.00	\$31,200.00				
15.00%	\$4,500.00	\$8,025.00	\$11,550.00	\$15,075.00	\$18,600.00	\$22,125.00	\$25,650.00	\$29,175.00	\$32,700.00	\$36,225.00	\$39,750.00	\$43,275.00	\$46,800.00				
20.00%	\$6,000.00	\$10,700.00	\$15,400.00	\$20,100.00	\$24,800.00	\$29,500.00	\$34,200.00	\$38,900.00	\$43,600.00	\$48,300.00	\$53,000.00	\$57,700.00	\$62,400.00				
25.00%	\$7,500.00	\$13,375.00	\$19,250.00	\$25,125.00	\$31,000.00	\$36,875.00	\$42,750.00	\$48,625.00	\$54,500.00	\$60,375.00	\$66,250.00	\$72,125.00	\$78,000.00				