

TOP 5

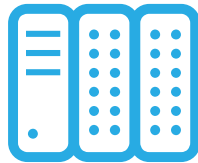
THINGS THAT GO WRONG WITH...



ELECTRIC
MOTORS



INVERTERS



PLCs

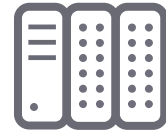


HMIs

EU 
AUTOMATION

TOP 5

THINGS THAT GO WRONG WITH...



ELECTRIC MOTORS

WHEN AN ELECTRIC MOTOR FAILS, IT IS USUALLY BECAUSE OF OVERHEATING, POWER QUALITY, IMPROPER LUBRICATION, HARMONIC CURRENTS AND ENVIRONMENTAL FACTORS LIKE DUST OR HUMIDITY.

EXCESSIVE
HEAT
MEANS
DETERIORATION

#1

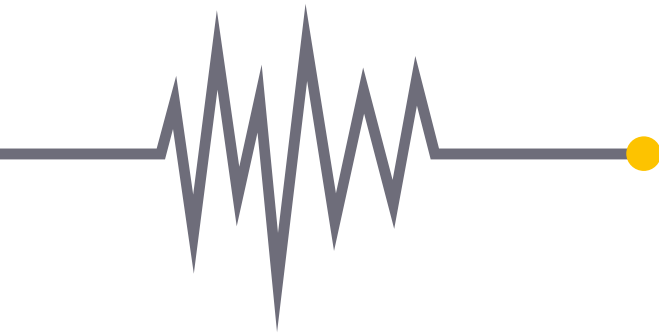


#2



INSUFFICIENT
PROTECTION
FROM
DUST
AND
HUMIDITY

#3



HARMONIC CURRENTS

#4 **POWER**
QUALITY

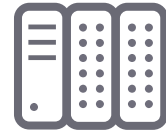


#5

IMPROPER
LUBRICATION

TOP 5

THINGS THAT GO WRONG WITH...



INVERTERS

INVERTERS FAILURE IS OFTEN CAUSED BY ONE OF THE FIVE OS: OVERUSE, OVER-CURRENT, OVER-VOLTAGE AND ULTRASONIC VIBRATIONS THAT CAUSE OVERHEAT.



ELECTROMECHANICAL WEAR AND OVERHEATING OF CAPACITORS

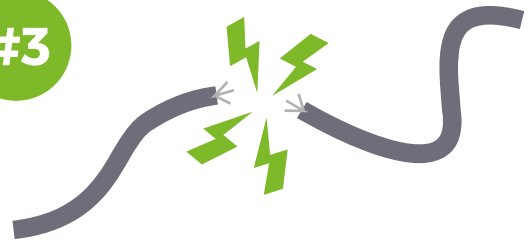
#1

#2



USING AN INVERTER BEYOND ITS **OPERATING LIMIT**

#3



OVER-CURRENT

#5



ULTRASONIC VIBRATIONS
THAT CAUSE UNWANTED HEAT

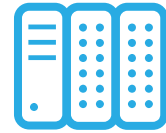
#4



OVER-VOLTAGE

TOP 5

THINGS THAT GO WRONG WITH...



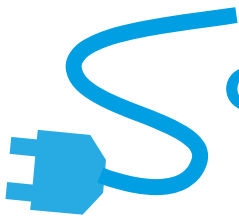
PLCs

BAD WIRING, FAULTY COMMUNICATION, ELECTROMAGNETIC INTERFERENCE AND MEMORY PROBLEMS ARE THE MOST COMMON REASONS WHY PLCs FAIL.



COMMUNICATION
PROBLEMS
I/O FAILURE

#2



**POWER SUPPLY
AND
GROUND WIRING
PROBLEMS**



**ELECTROMAGNETIC
INTERFERENCE
OR
RADIO FREQUENCY
INTERFERENCE**

#4



CORRUPTED MEMORY

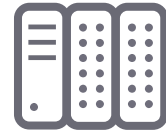


#5

CONFLICT BETWEEN
**INTERNAL PLC STATUS
AND ENVIRONMENT**

TOP 5

THINGS THAT GO WRONG WITH...



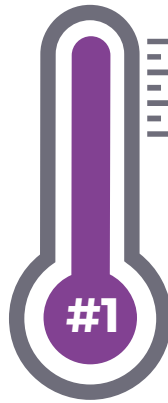
HMIs

HMIs USUALLY FAIL BECAUSE OF A COMBINATION OF TECHNICAL, DESIGN AND HUMAN ERRORS.

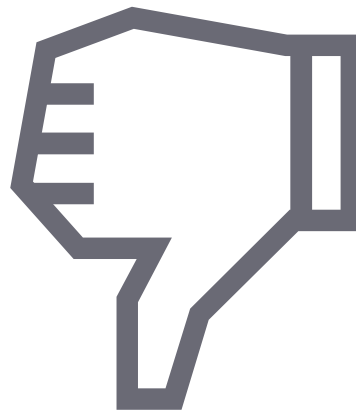


#2

**TOUCH
SCREEN
SENSIBILITY**



OVER-SPECIFICATION
MIGHT MEAN
OVERHEATING



**POOR
DESIGN**

#3

#4



**WRONG CHOICE
FOR THE JOB**

#5



HUMAN ERROR