



ISO 9001:2015 CERTIFIED COMPANY  
MBE & DBE CERTIFIED COMPANY

## SUPERIOR PRODUCTS AND SERVICES

FlenTek Solutions, Inc is a supplier of custom solutions for manufacturers who need to improve the performance of their products, decrease their cost, or more importantly increase their competitive edge. We provide technical solutions developed and delivered for your market specific products and applications.

**Quality Managers** who value the importance of analytical tools, as compared to a subjective observation, to measure the **Critical Color Differences** in material. We can decrease the waste and expense incurred to build a product that has a lot of color variations for material in an industrial, food, or automotive application.

**Production Engineering** who need **Safety Switches** on doors, gates and robotic systems to insure employee safety and the reduction in workplace injuries.

**Mechanical Engineer** who need **Precision Pressure, Vacuum, and Differential Switches** in hydraulic applications.

**Design Engineers** who need a complete AC/DC **Motor Controllers System** (Motors, controllers, contactors, gauges, DC converters, etc.) developed or just key components for material handling, military, marine, agriculture, robotic, or autonomous vehicle applications



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**AC electro-hydraulic pump,**

**AC Induction**

**Horizontal Drive Wheel,**

**Vertical Drive Wheel,**

**Steering Gearbox AC/DC,**

**Electric Transaxles**

**Brushless DC Motors**

### ***Motor Worksheets...***



## LIST OF SUPPLIERS

*Konica Minolta*– Color Measurement Tools

*Curtis Instruments*– Motor Controller Systems/Contactors

*IDEM*– Safety Switches

*World Magnetics*– Pressure Switches

*Curtiss-Wright*– Motor Controller Systems

*Bremas*– Safety Switches/CAM Switches

*Metalrota*—AC Motors

## COLOR AND APPEARANCE MEASUREMENT EQUIPMENT

### *Colorimeters*

**CR-410**



**CM-5**



**BC-10plus**



### *Spectrophotometers*

**CM-3600**



**CM-5**



**CM-700d/600d**



### *Gloss / Spectro Combo*

**CM-25cG**



### *Multi Angle Spectrophotometer*

**CM-M6**



# KONICA MINOLTA SPECIAL APPLICATIONS



## ACCURATE COLOR MEASUREMENT: SAFEGAURDS QUALITY AND BRAND PRESENCE

The name Kärcher is synonymous with the inventive spirit that is typically Swabian. The family-run company from Winnenden, near Stuttgart, is a global market leader in the field of cleaning systems.



## COLOR MATRIX

Is a global innovator of liquid colorant, additive and dosing technologies for the plastics industry. The company takes a holistic, total package approach to help its customers maximize their production efficiencies and improve both the performance and aesthetics of their products



## FOOD INDUSTRY COLOR CONTROL: THE COLOR OF QUALITY

When it comes to foods, color and appearance are the most important first impressions, even before one's olfactory sense is tickled with a pleasing aroma.

# KONICA MINOLTA SPECIAL APPLICATIONS



## AUTO INDUSTRY SOLUTIONS

Having the right equipment for automotive interiors will enable you to:  
 Reduce costs with less waste  
 Effectively communicate a standard metric to your supply chain  
 Overcome the challenges in matching materials

Having the right equipment for automotive exteriors will enable you to:  
 Overcome the challenges of measuring high performance finishes, curvature areas, and small accessories  
 Put a value of what the eyes see in the realm of a total appearance measurement



## UNDERSTANDING AND CONTROLLING COLOR: MAINTAINING YOUR PRODUCTS IMAGE

With the increasing diversity of products, product recognition is becoming more important. Along with product design, color is one of the major factors in creating a product image. It has a great effect on market appeal and sales. The average consumer will not accept the color ranges that were the industry standard ten years ago. They are always searching for a better product – one that gives them the desired properties with a minimum of variation. Because of these requirements, companies are becoming increasingly concerned about color, and color control is becoming

# KONICA MINOLTA SPECIAL APPLICATIONS



**KONICA MINOLTA | SENIOR AMERICAS | COLOR**

### INAX Corporation The Color of Quality Tile

**World's Largest Tile Maker**

INAX Corporation was founded in 1924 and is now Japan's leading manufacturer of tiling, building materials, sanitary fixtures, and residential fixtures. Particularly for tiles, INAX is the world's largest maker, and distributes these products which play a variety of roles in our daily lives to customers throughout the world. INAX has been using Konica Minolta sensing's spectrophotometers for many years, and the replacement of previous products with the latest Spectrophotometer CM-700d provided the opportunity for this application note.

**Color Management**

Color management is the process of ensuring that the color of a product is consistent across different media and environments. This is achieved through the use of color calibration tools and processes. The CM-700d provides the accuracy for this application.

**Color Accuracy**

The CM-700d is used to measure the color of tiles. This allows for the creation of a color calibration chart that can be used to ensure that the color of the tiles is consistent across different media and environments. The CM-700d provides the accuracy for this application.

**Color Consistency**

The CM-700d is used to measure the color of tiles. This allows for the creation of a color calibration chart that can be used to ensure that the color of the tiles is consistent across different media and environments. The CM-700d provides the accuracy for this application.

**Color Reproduction**

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## INAX CORPORATION: THE COLOR OF QUALITY TILE

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**KONICA MINOLTA | SENIOR AMERICAS | COLOR**

### Whiteness Indices and UV Standards General Information

The evaluation of the whiteness of a product is dependent upon the materials and the application in which it is used. Natural materials, for instance cotton or wool, tend to yield a yellowish tint, so the industry will make modifications to the materials to compensate for this effect. A yellowish tint in a product is most often seen as a quality flaw, e.g., yellowing due to aging or dirt, and businesses will attempt to make the appearance of their products more white.

**Whiteness Indices**

Whiteness indices are used to measure the whiteness of a product. The most common whiteness index is the L\* value, which ranges from 0 to 100. A higher L\* value indicates a whiter product. The CM-700d provides the accuracy for this application.

**UV Standards**

UV standards are used to measure the UV resistance of a product. The most common UV standard is the UV-311 standard, which requires a product to have a minimum UV resistance of 100 hours. The CM-700d provides the accuracy for this application.

## UNDERSTANDING WHITENESS MEASUREMENT

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**KONICA MINOLTA | SENIOR AMERICAS | COLOR**

### THE COLOR OF PEANUT BUTTER

**MORE THAN MEETS THE EYE**

Over 40 billion jars are sold annually. That's a lot of peanut butter. The USDA provides four color chips for peanut butter and we try to match our peanut butter color to chip number three, with a plus or minus tolerance of .5," said Samantha Rector, Quality Control Supervisor, Sunland, Inc. "The private label peanut butter we make for other companies may require a different color match. We needed a way to take the subjectivity out of color matching, which was done visually according to USDA standards. I may see a batch of peanut butter color as too dark, while someone else may see it as too light."

**Color Accuracy**

The CM-700d is used to measure the color of peanut butter. This allows for the creation of a color calibration chart that can be used to ensure that the color of the peanut butter is consistent across different media and environments. The CM-700d provides the accuracy for this application.

**Color Consistency**

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## THE COLOR OF PEANUT BUTTER

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## WORLD MAGNETICS PRESSURE SWITCHES

### *High Pressure*



### *Medium Pressure*



### *Vacuum Pressure*



### *Low Pressure*

**161**



**PSF100**



**PSF103**



**PSF101**



### *Ultra Low Differential Pressure*

**171**



**D-1**





## WORLD MAGNETICS SPECIAL APPLICATIONS

### HVAC

**Examples:** Air proving, ventilation flow, exhaust ducts, cleaning and purification, air filter health / status, fans, dirt and dust filter loading. Gas furnaces, pellet stove heaters, combustion exhaust venting, exhaust / flue air-flow blockage, flue gas, gas pressure, induced draft, heating / venting blower fan, boilers, fuel oil delivery. Refrigeration, cooling fans, air conditioners, refrigerators, freezers. Water heating systems, heat pumps, sump pump / drain control, hot tubs, pools, spas, liquid level.

### MEDICAL, SURGICAL & DENTAL

**Examples:** Emergency, intensive care, surgical, rehabilitation. Respiratory therapy, assisted breathing, portable oxygen concentrator, gas level, drug delivery, inhaler / vapor dispenser, nebulizer, alcohol breath analyzer, anesthesia delivery, HEPA filter health, kidney dialysis, reverse osmosis purification. Patient monitors: pulse, breathing rate, blood pressure, intraarticular pressure. Surgical / dental vacuum, suction, air delivery. Sip and puff control & actuators (e.g., hospital bed controls, wheelchair steering).

### COMMERCIAL APPLIANCE

**Examples:** Gas-fired appliance exhaust venting, liquid product level, fill level / water pressure, chemical dispensing, operating cycle control, hot water tank pressure, filter status, control pumps, lights, blowers, burners. Restaurant equipment, deep fryers, convection / pizza ovens, grills, beverage syrup dispensers, coffee machines, espresso machines, cappuccino machines, dishwashers, ice makers, washers, dryers, food vacuum sealers, vacuum cleaners, pellet wood stoves.

### CONSTRUCTION & FARMING

**Examples:** Heavy equipment, earth movers, backhoes, bulldozers, cranes. Tractors, irrigation and harvesting machinery, aquaculture systems, animal care. Heavy duty air / fluid filtering; oil and hydraulic systems; differential, transmission, and drivetrain; air, water, and oil pumps. Comfort air movement systems, vacuum dairy milking..

### AUTOMOTIVE & TRANSPORTATION

**Examples:** Hybrid cars, passenger cars, vans, sports / race cars, semi trucks, recreational vehicles, boats, motorized vehicles. Emission control, exhaust recirculation control, turbo, manifold vacuum, fuel injection, air and fluid pressure, filter monitoring, pre-cranking lubrication, on-start engine monitoring, Boat / marine bilge pump, drinking water pump, trim tab hydraulics.



## WORLD MAGNETICS SPECIAL APPLICATIONS

### AEROSPACE & MILITARY DEFENSE

**Examples:** Commercial / military aircraft, ships, ground transport vehicles, marine watercraft, communications and weaponry. NASA astronaut space helmets, cabin pressure, oxygen masks, air speed monitor, holding tanks, vacuum toilet, missile / aircraft guidance, helicopter systems, unmanned aircraft controls, rocket propulsion controls. Ship controls, nuclear submarine navigation, arc-fault detection, chemical dispenser, depth charges, bombs, tanks. Patriot, Trident, Predator, HMMWV / Humvee.

### ECO-FRIENDLY / ENVIRONMENTAL (GREEN)

**Examples:** DesignFlex™ switch products conserve valuable energy by using electrical power only when activated by pressure, vacuum or differential pressure. Our eco-conscious switch designs are employed in a wide variety of alternative energy and environmentally friendly applications. Alternative energy, hybrid automobiles, electric vehicles / automobiles, hydrogen fuel cells, fuel cells, batteries, on-demand systems, alternative fuel heaters, wood and corn pellet stoves, wind turbine and solar energy battery storage systems. Ozone generators, air quality monitors, air filtering detection, air and water filtration / purification, no flush toilets and waste systems, energy conserving products.

### MANUFACTURING & ROBOTICS / OTHER

**Examples:** Robotics, path / position detection, pneumatic actuator / traffic counter, vacuum detection, edge detection, production pick and place, presence / absence, liquid level low / high, refill, process breaks, low pressure motor on, high pressure motor off, sealed systems pressure, compressors, pumps, industrial ultraviolet drying, semiconductor process solution, automated tool driver, spray paint pressure, test equipment pressure calibration.

### SAFETY

**Examples:** Edge detection / auto reverse, pressure and vacuum monitoring, blockage detection, low / high alarms, safety interlock, valve position, auto shutoff. Safety doors (elevator, subway, bus, garage), mining gas sampling, drainage, exhaust flues, pump inlets, power ventilation, chamber pressure, explosive purge pressure, fuel dispensers, traffic counters, event recorders, vehicle loading position, heating / cooling pressure, asbestos removal vacuum, fire helmet air supply, astronaut helmet pressure / air supply. Hazardous leaks, Radon gas detection.

### TECHNOLOGY, COMPUTER & OFFICE

**Examples:** Office equipment, fan cooling, pressure monitoring, positioning, pick / place. Computer server motherboards / processors, tape drive / storage devices, tape speed, inkjet / laser printers, ink well pressure, carriage position, printer head cooling fan, paper handling, high-speed scanning and sorting, photo copiers, check scans, lift labels, letter / envelope vacuum insert, silk-screening film position, sealed cable pressure, lighting gas pressure.

## IDEM SAFETY SWITCHES

### *Wire Safety Rope Switches*

**GLS-SS Series**



**GLS Series**



**GLHD Series**



# IDEM SAFETY SWITCHES

## *Non Contact Interlock Switches*

**MMC-H Series**



**WMR Series**



**LPC Series**



**LMC Series**

## *Safety Interlock Switches*

**K-SS-EX Series**



**KLM Series**



**KLM-P2L M20**



**K-15 Series**



**KL3-SS Series**



## BREMAS POSITION/SAFETY SWITCHES

**E100**



**E200**



**E300**



**E400**



## BREMAS CAM SWITCHES



**CA Series**

*\* Rated current: from 12A up to 630A*  
*\* Rated isolation voltage: 690V*



**CQ Series**

*\* Rated current: from 12A up to 32A*  
*\* Rated isolation voltage: 690V*



**CR Series**

*\* Rated current: from 12A up to 50A*  
*\* Rated isolation voltage: 690V*

# BREMAS SWITCHES



## *MicroSwitches*

### M3 Series



## *Multiple Position Switches*

### FMV Series



# BREMAS SWITCHES

## *Pre Wired Position Switches*

**E600**



**E700**



## *General Limit Switches*

**E100**



**E200**



**E300**



**E400**





## ALBRIGHT CONTACTORS

### *Low Voltage Stud*



*Designed to be used in a variety of applications including electric vehicles, materials handling equipment, winches, Hydraulic Power Packs, Engine Starting, Standby Power, Lighting applications, Telecommunications and D.C. System Electrics.*

*Models: DC, RU, RW, SU, SW*

### *P- Types*



*Environmentally protected to IP66 or IP67 these are suitable for marine and arduous environment applications and include low voltage stud and motor reversing type contactors.*

*Models: DC, PC, SU, SW*

## ALBRIGHT CONTACTORS

### *Emergency Disconnect Switches*



*Designed to provide a rapid means of disconnecting batteries or other power supplies in the event of serious electrical faults. Primarily used with battery powered vehicles they are also suitable for use with static power systems.*

***Models: ED***

### *Motor Reversing*



*Designed for applications such as winches and direction controllers.*

***Models: DC, SW***



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## MOTOR CONTROLLER SYSTEM COMPONENTS

### *Hour meters & Battery Discharge Indicators*

**803 Series**



**840 Series**



**700 Series**



### *Series / Sepex Motor Controller*

**1244/1268 Series**



**M Series**



### *PM Motor Controllers*

**1226 Series**



**1212P Series**



**1212S Series**



## MOTOR CONTROLLER SYSTEM COMPONENTS

### *AC Induction Motor Controllers 24v-80v 150-550amps*

1222



1234



### *AC Induction Motor Controller (E Series) 24v-96v 150-800amps*

The 'E' models utilize a powerful dual-microprocessor logic architecture to provide improved performance and surpass the requirements of the latest international functional safety standards.

1232E



1234E



1236E



1238E



### *AC Induction Motor Controllers (SE Series) 24v-80v 250-650amps*

1232SE



1234SE



1236SE



# MOTOR CONTROLLER SYSTEM COMPONENTS

## *Foot Pedals & Throttles*

**WM-528**



**WM-526**



**Wig-Wag**



**WM-540**



**WM-542**



**WM-575**



## *Hall Effect Sensors*

**SRH220DR**



**NRH275DR**



# MOTOR CONTROLLER SYSTEM COMPONENTS

## *Joysticks*

**JC6000**



**JC1500**



**JC8000**



## *DC/DC Converters*

- \* 24-80v Input
- \* 16amps@12v
- \* 14.5amps at 13.7v

**1420**



## *DC/DC Converters*

- \* 24-36v Input
- \* 2amps@24v

**1416**



# MOTORS



*AC Motors*



*PM Motors*



*Series Motors*



*AC Motors with extras*



*Hub Motors*





**SPECIFICATION OF BASIC REQUIREMENTS**

**T10200**

RELEASE DATE

**8/1/2017**

**REV.**

**3**

**CUSTOMER:**

New Product

Y  N

**PROJECT:**

Repair Part

Y  N

**DEADLINE:**

Starting Date

Ending Date

SECTION TO BE FILLED FOR MOTOR

NOMINAL TENSION  24v  36v  48v  80v

WORK POWER (W) \_\_\_\_\_ RPM \_\_\_\_\_

DUTY ..... TORQUE (Nm) \_\_\_\_\_ CONSUMPTION (A) \_\_\_\_\_

REQUIRED DIMENSION (mm) ..... LEIGHT \_\_\_\_\_  $\phi$  \_\_\_\_\_ FF=1

REQUIRED PROTECTION CLASS (IP) .....  IP 20  IP 44  IP 56  IP 67 WEIGHT \_\_\_\_\_

CONSTRUCTION'S MODEL \_\_\_\_\_

FLANGE .....  B14  B5  B3  B3/B14  B3/B5

SENSE OF ROTATION .....  L/R  R  L

VENTILATION .....  in  out  no  Other

N° of encoder pulses  32 ppr  48 ppr  64 ppr

CONNECTION TYPE .....  Terminals  Cables  Terminals + Cables

MOTOR TYPE .....  Series  Sepex  AC Induction  Perm. Magnet

INSULATION CLASS REQUIRED .....  B  F  H

BRAKE .....  Electro Mag.  Mechanical  Hydro-mechan.  Negative brake

Notes:

SECTION TO BE FILLED FOR LITHIUM BATTERY SYSTEM

VOLTAGE  24V  36V  48V  80V

AMP HOUR  200ah  300ah  400ah  500ah

(Multiple of 100ah) \_\_\_\_\_ Other \_\_\_\_\_

BATTERY STORAGE AREA DIMENSIONS \_\_\_\_\_ LENGTH (inches) \_\_\_\_\_ WIDTH (inches)

\_\_\_\_\_ HEIGHT (inches)

Notes:





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