

Products and Applications

prepared for:



September 2016

A component-solutions partner to count on.

<p style="text-align: center;">Engineering Competence</p> <p>A century long foundation in German precision engineering of components: customer solutions and operational excellence at the core of engineering, sales and distribution strategies.</p>	<p style="text-align: center;">Diversified Product Portfolio</p> <p>Diversified and competitive product lines, providing component solutions across multiple industries and applications.</p>
<p style="text-align: center;">Global Scale</p> <p>Global and vertically integrated infrastructure: engineering → manufacturing → sales → distribution, supporting a worldwide customer base.</p>	<p style="text-align: center;">Experience & Agility</p> <p>Entrepreneurial business culture with experienced regional management teams - highly responsive to customer needs.</p>

Serving Multiple Industries ...

ZETTLER GROUP's diversified product lines are designed to provide complete solutions for component applications across a broad spectrum of industries.



SOLAR



AUTOMOTIVE



APPLIANCES



SECURITY



LIGHTING



HVAC/R



TELECOM



ELECTRICAL VEHICLES



MEDICAL



INSTRUMENTS



INDUSTRIAL



ENERGY MANAGEMENT

... and Global Top Brands.



Select **ZETTLER product lines** for your consideration:

- **Transformers/Magnetics**
- **Electromechanical Relays**
- **LCD/TFT Displays**

Transformers

www.zettlermagnetics.com

Zettler Magnetics Inc. manufactures and distributes a wide range of PCB and chassis- mounted transformers, toroids, chokes and inductors, offering exceptional design and manufacturing capabilities for the most specialized applications.

Why Zettler Magnetics?

1. Proven innovation in transformer design.
2. Zettler encapsulated power solutions have unique design options – few competitors.
3. Wholly owned, vertically integrated engineering and manufacturing.
4. Highly competitive pricing due to high degree of automation.
5. Outstanding design support.
6. Registration program for new designs, excellent design tracking.

Transformers

www.zettlermagnetics.com

Encapsulated linear power transformers

Key Benefits

- Less expensive than traditional open frame design
- Significant reduction in physical footprint compared to traditional open frame formats
- Can be modified to withstand 14kV surge
- Superior thermal characteristics and minimized EMI noise due to our assembly methods

Key Features:

- Input 115V OR 230V / Single and Dual Output
- Dielectric Strength 4200Vrms Inherently Energy Limited
- Conforms to EN 61558 AND EN 60950
- 100% Production Tested



Click image for
product details

Transformers

www.zettlermagnetics.com

Encapsulated switch-mode modules

Key Benefits:

- Cost Effective
- Plug & Play solution for low power applications
- Encapsulated for protection against dust and moisture
- Custom input & output available

Key Features:

- Universal 90-264VAC Input Range
- Self-Extinguishing Plastic 94V-0
- Low standby power <0.3W, high efficiency
- Dielectric Strength 3600 VAC
- Low Ripple and Noise
- Integrated EMC Network



Click image for
product details

Transformers

www.zettlermagnetics.com

ACST Series of PCB Mountable Current Sense Transformers



Click image for
product details

Key Benefits:

- Through-hole PCB mountable
- Low profile design
- Seven turns ratio options
- Cost effective plug & play option

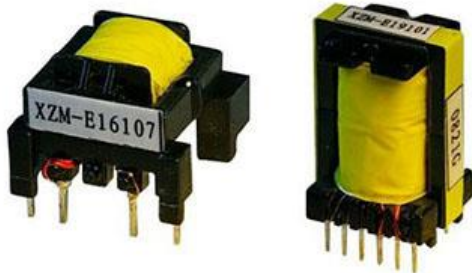
Key Features:

- Primary current range 0.4 to 30 Amps
- Dielectric strength 4000 Vrms
- UL class B materials
- Split-bobbin design

Transformers

www.zettlermagnetics.com

Ferrite Switching Transformers



Click image for
product details

Key Benefits:

- Rapid prototyping
- Easily customizable.
- Standard bobbin and core sizing for quick turnaround
- Vertical and horizontal layout options

Key Features:

- Universal 85-264VAC input range
- 4kV primary-secondary insulation
- Conforms to EN 61558 and EN 60950
- Creepage distance primary / secondary $\geq 6\text{mm}$
- Highly efficient, automated wire insulation process
- 100% production tested

Transformers

www.zettlermagnetics.com

Sample Applications

Hot Tub Controls

AHI style 115/230V-10V 20VA

This custom designed AHI series is UL Class 2 certified with double insulation for hot tub controls.



Electric Smart Meters

BV302S09020-235 240V-9V 2VA

Unique bobbin designed allows the BV302S09020-235 to withstand repeated 14kV surge and the only transformer to meet UL 2735.



Surge protection in street and parking lot lighting

Custom Inductors

Zettler's efficient production lines provide high volume toroidal inductors at competitive prices to OEM and CM customers around the globe.



Oxygen Concentrators

BV302S12020 230V-12V 2VA

Compact design, good heat dissipation and UL class 2 recognition make the BV302S12030 a perfect fit for snug enclosures.



Transformers

www.zettlermagnetics.com

Sample Applications

Soda dispensers / Industrial Microwaves / Deep fryers

Custom Transformer 115/230V-10V 10VA

Dual input capability and Class B insulation system make the AH101024 popular for international markets.



Bathroom lighting

AH20016 115V-16V 1.1VA

Reliable and cost effective the AH20016 helps designers bring innovative lighting solutions to market.



AC cycling switch

ADH30010 115/230V-10V 2.4VA

Efficient and dependable the ADH30010 is relied on by Utility companies.



Medical Lighting

BV302S10015 230V-10V 1.5VA

Compact packaged with UL class 2, VDE and CE certification make the BV302S10015 an easy solution for critical applications.



Transformers

www.zettlermagnetics.com

Sample Applications

Smoke Alarms

Custom Transformer 120/240V-24V 1VA

A Custom design, the AMXC-214 met our customers requirements of small footprint while maintaining UL and CE creepage requirements.



Refrigerator Controls

Custom 20 Watt Ferrite Transformer

With a universal 90-264VAC input capability this high frequency AC-DC switching transformer is constructed with UL Class B Materials.



Air Conditioning

AHRV-40318FMW 40VA

Efficient, inherently limited, UL Class 2 transformer is a safe and reliably used in HVAC markets around the globe.



Washing Machines

ZP10S0500W AC-DC 10 Watt Power Module

Universal 90-280VAC input with 5 VDC outputs. A cost effective power supply solution for appliance manufactures.



Transformer Manufacturing

- ❑ Automated and cost-efficient production lines - high performance, competitive pricing.
- ❑ Xiamen ZETTLER Magnetics production lines feature fully automated winders with pre-twisting technology, precise tension controls, auto argon arc welding, PLC controlled potting, and advanced FIFO drying.
- ❑ All ZETTLER Magnetics products are subject to stringent quality assurance and process controls, including ISO 9001.



(Click on picture for VIDEO link)

<http://www.zettlermagnetics.com/zettler-magnetic-production-video/>

Electromechanical Relays

www.azettler.com

American Zettler, Inc. offers a broad product range of electromechanical relays to meet many specific requirements of diverse commercial and industrial applications.

Why American Zettler?

1. Strong, well established brand

- High brand-recognition in electromechanical relays, attractive to many brand-loyal engineers.
- Long-standing “German quality engineering” reputation.
- Wide product program for multiple applications/industries.

2. Innovation in relay design

Examples:

- Ultra-low power consumption parts for energy management and intelligent lighting/ building controls.
- General purpose relay with unmatched UL ratings for amperage and temperature: 20A @ 277VAC, 30K cycles at 85 degrees C.



Click images for product details



Electromechanical Relays

www.azettler.com

Innovation in relay design – Examples (cont'd)

- Market leading 'new energy' solutions: complete line of Solar inverter and EV charging relays.



Click on image for product PDF

3. Ready replacement crosses for several industry standard relays going EOL :

- TE T7C/Omron G5LA [AZ942/AZ943](#)
- Omron G8P [AZ2150](#)
- Panasonic DS2 [AZ822/AZ826](#)
- Panasonic TX [AZ8462](#)



4. Scale -> Highly competitive pricing.

5. Registration program for new designs, excellent design tracking.

Electromechanical Relays

www.azettler.com

Sample Applications

Pool pumps & controls

[AZ2100](#), [AZ2150](#) & [AZ21501 series](#)

Common footprint, class F insulation and rated up to 50A



Electric Vehicle Chargers Level 2

[AZ2800](#) & [AZ2850 series](#)

Rated to 40A @ 277VAC, PCB & QC option



Lighting Controls

[AZ7555](#)

20A rated relay, low coil power option & common footprint



Electromechanical Relays

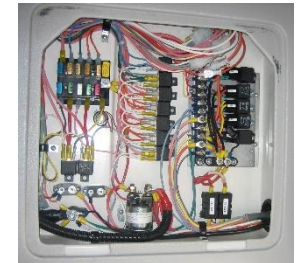
www.azettler.com

Sample Applications

Automotive wiring harnesses

[AZ9731](#), [AZ988](#), [AZ980](#)

Plug-in ISO footprint relays from 25A-80A



Appliance controls

[AZ7709](#), [AZ576](#), [AZ9405](#), [AZ9375](#)

Industry standard footprints from 3A to 40A



Solar inverters

[AZSR235](#), [AZSR250](#), [AZSR180](#)

Cutting edge design, wide gap, switching to 120A



Electromechanical Relays

www.azettler.com

Sample Applications

Zone controls

[AZ943](#)

Industry standard footprint, 15A rating



Smart home/office controls

[AZ2505](#), [AZ762P](#)

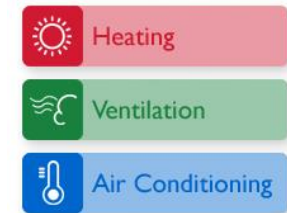
Latching relays to 120A



HVAC

[XMC0 definite purpose contactor](#)

Up to 4 poles, 25A – 90A



Electromechanical Relays

www.azettler.com

Sample Applications

Security panels

[AZ822](#), [AZ826](#), [AZ8222](#), [AZ850](#)

Single or bifurcated contacts, gold plating



Foodservice equipment

[AZ1641](#), [AZ1651](#), [AZ1661](#)

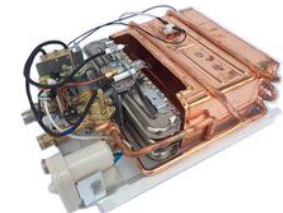
PCB and plug in, 1-4 poles, 3A-20A



Bi-metal thermostats

Food service equipment, HVAC, appliance, tankless water heater

Panel mount and wire harness, 1/2" and 3/4" snap discs



Relay Manufacturing

- ❑ Proven quality assurance programs are incorporated in the initial design and development of new relay models, and into highly automated production lines and manufacturing processes.
- ❑ Statistical Process Controls (SPC) and ISO 9001 and ISO 14001 certification standards.
- ❑ ZETTLER Relays continuously assure highest product quality, safety and reliability.



(Click on picture for VIDEO link)

<http://www.azettler.com/zettler-relay-production-line/>

LCD/TFT Solutions

www.azdisplays.com



AZ Displays, Inc. manufactures and markets a broad line of TFT panels and LCD modules, with an established reputation as a provider of top quality display solutions in a wide range of **industry applications** - combining sophisticated design and engineering capabilities, in standard and customized versions, and at very competitive pricing.

Why AZ Displays ?

- 1. Established manufacturer of industrial display products:**
TFT's with integrated resistive/PCAP touch 7 inch and under, wide range of character and graphic LCD modules.
- 2. Fully owned China assembly manufacturing** (clean room facilities, state-of-art process and quality controls) – **vertically integrated with global sales and distribution.**
- 3. High automation level drives ability for very competitive pricing at lower volumes.**
- 4. Sophisticated design capabilities and strong engineering support focus:**
 - North America and China engineering and development support.
 - Designer-friendly website support with **comprehensive engineering resources** including 3D CAD, datasheets, dimensional drawings, quick-scan parameter, easy to navigate digital catalog.
 - Advanced development tools include universal development AND production board.

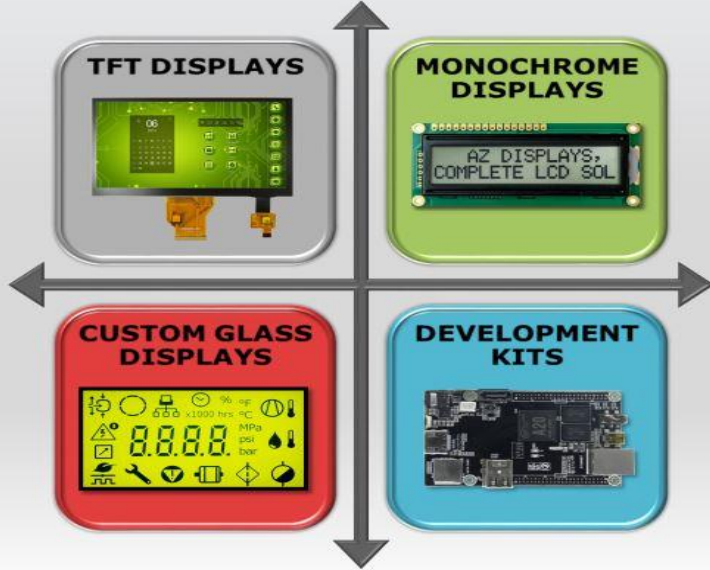
LCD/TFT Solutions

www.azdisplays.com

Engineering-friendly e-catalog/product selection tool

AZ DISPLAYS, Inc.
A ZETTLER GROUP COMPANY *Complete LCD Solutions*

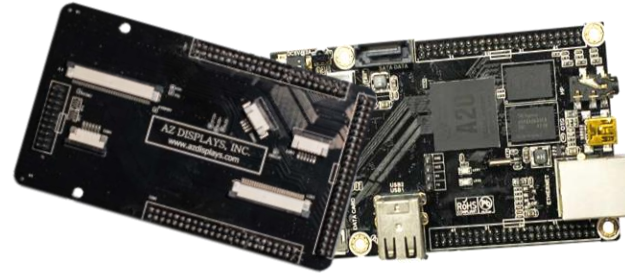
E-CATALOG



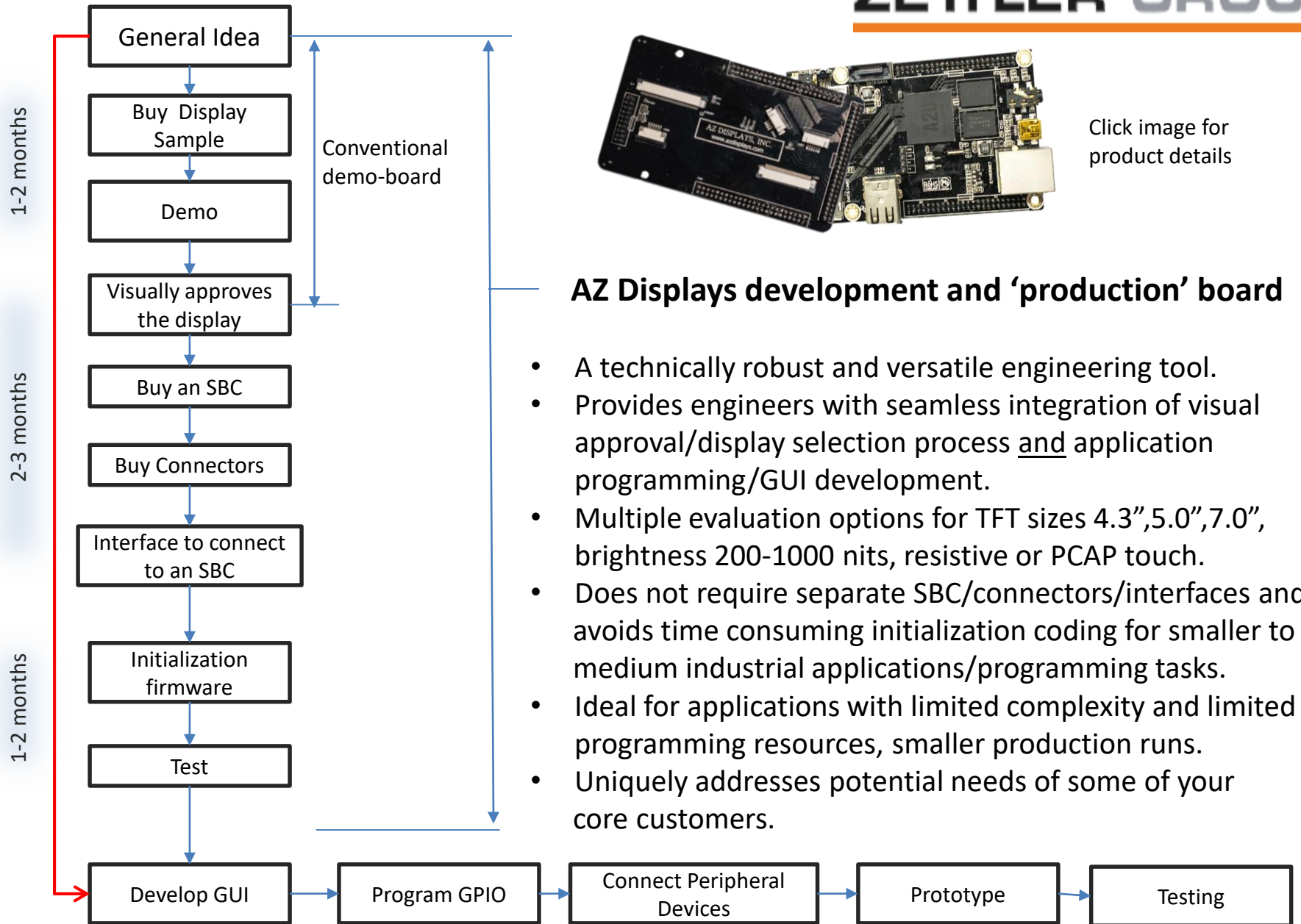
The diagram features a central cross with four arrows pointing outwards. Each arrow points to a colored rounded square containing a product image and a title. The top-left square is grey and labeled 'TFT DISPLAYS', showing a green TFT display on a circuit board. The top-right square is green and labeled 'MONOCHROME DISPLAYS', showing a monochrome display with the text 'AZ DISPLAYS, COMPLETE LCD SOL'. The bottom-left square is red and labeled 'CUSTOM GLASS DISPLAYS', showing a custom glass display with various icons and a digital readout. The bottom-right square is blue and labeled 'DEVELOPMENT KITS', showing a development kit on a circuit board.

www.azdisplays.com

Click on image for link
<http://www.azdisplays.com/e-catalog/>



Click image for product details



LCD/TFT Solutions

www.azdisplays.com

Sample Applications

Security Monitoring Systems

[ATM0500D12-T](#)



Electronic Test Equipment

[ATM0700D6C-T](#)



Climate Controls

[Custom Glass](#)



LCD/TFT Solutions

www.azdisplays.com

Sample Applications

Fitness Equipment

[ATM0700D6B](#)



Automotive/Engine Controls

[ATM0700D6J-CT](#), [ATM0700L6L-CT](#)



Credit Card Reader

[ATM0430D12-CT](#)



LCD/TFT Solutions AZ Displays, Inc.

www.azdisplays.com

Sample Applications

Irrigation Controls

[ATM0430D19A](#)



Modular HMI control/visualization systems

[ATM0700L6L-CT](#)



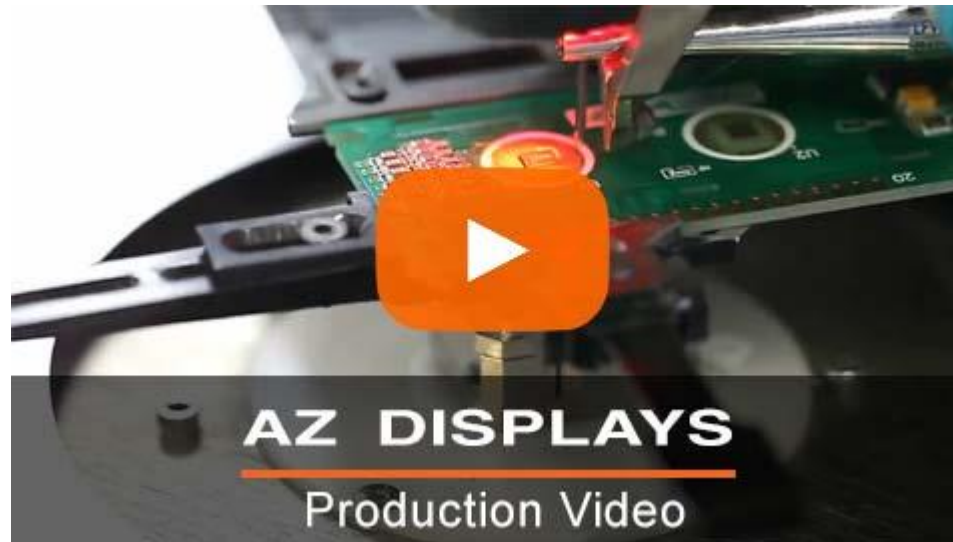
Remote Alarm Monitoring System

[ACM1602K-FL-YBS](#)



Display Manufacturing

- ❑ ZETTLER Displays manufacturing division in Xiamen, China has implemented sophisticated process and quality standards including ISO 9001:2008.
- ❑ Key quality tools include APQP / DFMEA & PFMEA / SPC / MSA / PPAP, and testing on a 100% basis. Our production processes are lead free and RoHS compliant and feature clean room facilities (class 1,000 and 10,000 rooms).



(Click image for VIDEO link)

<http://www.azdisplays.com/az-displays-production-video/>

Contact us with your engineering requirements/component needs:

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