

# Zhaga Book 20 Compliant – FLM Series

## DALI INTERFACE CONNECTORS FOR INDOOR LUMINAIRES

The FLM Series products are compliant with the Zhaga Book 20. Zhaga Book 20 specifies 2 position connectors identified as Luminaire Extension Module Receptacles (LEX-MR) and Luminaire Plugs (LEX-LP), used for DALI-2 (Digital Addressable Lighting Interface) applications. DALI-2 is a smart interface protocol between indoor luminaires and sensors and communication modules.

Amphenol's standardized Book 20 FLM Series connectors allow modules to connect to the LED driver and control system. The modules can be easily field serviced and replaced when necessary. The FLM Series connectors are available in Wire-to-Wire and Wire-to-Board configurations. The pin contact connectors (LEX-MR receptacles) are available as right angle or vertical PCB mount with SMT tails, or as wire termination housings for use with crimp contacts (purchased separately). The socket contact connectors (LEX-LP plugs) are available for use with wire crimp contacts (purchased separately), or with integrated contacts with poke-in wire termination.



### TARGET MARKETS



- Dimple latching with Poka-Yoke mating alignment feature
- DALI-2 bus enables bi-directional communication between luminaires and modules
- Plug available with tool-less poke-in termination
- Compliant with all Zhaga DALI Book 20 applications
- LEX-LP connector provides finger-proof contact protection

### FEATURES

- 2 position separable interface with Poka-Yoke features
- Integrated low-profile dimple latch feature provides 5N minimum retention
- SMT Receptacles are available in Right Angle and Vertical configurations
- SMT receptacles feature diamond shaped molded alignment pegs
- Plug available with crimp socket contacts (available on reel) or poke-in wire termination options
- LEX-LP connector is IP20 finger-proof design

### BENEFITS

- Enables DALI-2 protocol and ensures correct mating alignment
- Provides secure mating, with easy unmating
- Versatile design options
- Holds SMT connectors to board in secure orientation during soldering process
- Options allow high volume assembly, or easy field assembly/servicing
- Housing protects contacts in unmated condition

## TECHNICAL INFORMATION

### MATERIAL

- Housings: High temperature resistant thermoplastic, UL94V-0
- Contacts: Copper alloy, plated with matte tin over nickel

### MECHANICAL PERFORMANCE

- Mechanical Shock: 50G's, ½ sine, 11ms, per EIA-364-27
- Vibration: Cond VII, Letter D per EIA-364-28
- Durability: 25 Mating cycles, per EIA-364-09

### ELECTRICAL PERFORMANCE

- Current Rating:
  - 7A max. per circuit with 18AWG wire
  - 5A max. per circuit with 20AWG wire
  - 3A max. per circuit with 22AWG wire
- Voltage Rating: 250VAC / VDC
- Contact Resistance (LLCR):  $\Delta 20m\Omega$  max. after environmental exposure
- Insulation Resistance: 500M $\Omega$  min. @ 500VDC test voltage
- Dielectric Withstanding Voltage: 1500VAC

### PACKAGING

- Tape and Reel (PCB Mount Receptacles)
- Reel (Crimp Contacts)
- Bulk Pack (Wire Termination Housings)

### SPECIFICATION

- Zhaga Interface Specification Book 20
- Amphenol Product Specification S6172C
- RoHS Compliant per EU Directive 2011/65/EU and amendments

### ENVIRONMENTAL

- Operating Temperature Range: -40°C to +105°C
- Thermal Shock: 25 cycles between -40°C and +105°C, per EIA-364-32
- Temperature Rise: 30°C max.  $\Delta T$  @ rated current, per EIA-364-70

### APPROVALS AND CERTIFICATIONS

- UL Approved

### TOOLING INFORMATION

- Crimp contacts to be terminated in accordance with Amphenol Application specification S6174C, using Hand tool FLH-CT-0-03 or Semi Automated machine FLH-CT-0-02

### TARGET MARKETS/APPLICATIONS



Light Level Sensing  
 Presence Detection  
 Air Quality Monitoring  
 Push Button Controls  
 Wireless Networking  
 People Counting  
 Temperature Sensing  
 Audio Sensing

## PART NUMBERS

Description	Part Numbers
Receptacle Housing, FLM Series, Zhaga Book 20, LEX-MR for Crimp Socket Contacts	FLM-P21-X0
Receptacle, FLM Series, Zhaga Book 20, LEX-MR Right Angle SMT	FLM-P22-X0
Receptacle, FLM Series, Zhaga Book 20, LEX-MR Vertical SMT	FLM-P25-X0
Receptacle, FLM Series, Zhaga Book 20, LEX-MR, Poke-in Wire Termination	FLM-P23-X0
Plug Housing, FLM Series, Zhaga Book 20, LEX-LP for Crimp Pin Contacts	FLM-S21-X0
Plug, FLM Series, Zhaga Book 20, LEX-LP, Poke-In Wire Termination	FLM-S23-X0
Pin Contact, Crimp, FLH Series, Reel, 22AWG – 18AWG Tin Plated	FLH-PC136-1-T01
Socket Contact, Crimp, FLH Series, Reel, 22AWG – 18AWG, Tin Plated	FLH-SC136-1-T01

X	Housing Color
0	Black (Standard)
W	White

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