



## Control &amp; signal cable

# AJ-2Y(L)2YDB2Y H45

## Induction-Protected Railway Telecom Cable

DB 416.0115 'AJ' induction-protected ( $r_k \leq 0.1-0.25$ ) H45 ( $\leq 45$  nF/km) railway quad cable

AJ- Induction Protected ( $r_k$ )H45  $\leq 45$  nF/km Low-Cap

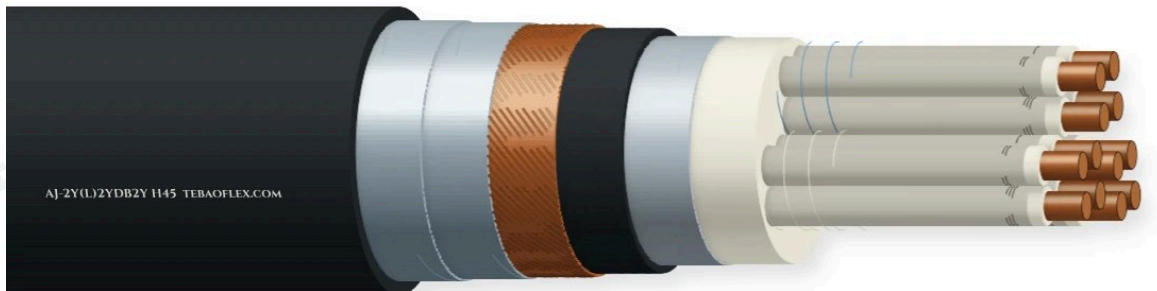
Cu Screen (D) + Steel Armour (B)

### Application

AJ-2Y(L)2YDB2Y H45 induction-protected railway telecom and axle-counter cable (DB 416.0115) for 15 kV / 25 kV AC rail lines, combining H45 ( $\leq 45$  nF/km) star-quads, 'L)2Y' Al/PE barrier, copper wire screen ('D'), magnetic steel tapes ('B'), and HDPE jacket.

**Typical uses:** 15 kV 16.7 Hz & 25 kV 50 Hz AC Mainline Rail, High-Speed Rail Axle-Counter Networks, ETCS Level 2 & Interlocking Backbone, Traction Substation Approach Corridors, Long Parallel Catenary Cable Troughs

### Construction



Cross-section, not to scale

- 1 Solid bare copper star-quads
- 2 H45 low-capacitance 2Y PE
- 3 (L)2Y Al/PE laminated inner sheath
- 4 Heavy copper wire screen (D)
- 5 High-permeability steel tape armour (B)
- 6 2Y black HDPE outer sheath

## Technical data

Typical values

|                               |                                                                                                              |                            |                                               |
|-------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------|
| Reduction factor $r_k$        | $\leq 0.10$ to $\leq 0.25$ at 16.7 / 50 Hz (100–300 V/km)                                                    | Mutual capacitance (H45)   | $\leq 45$ nF/km at 800 Hz                     |
| Loop resistance (+20 °C)      | $\leq 56.6 \Omega/\text{km}$ (0.9) · $\leq 31.8 \Omega/\text{km}$ (1.2) · $\leq 23.4 \Omega/\text{km}$ (1.4) | AC dielectric test voltage | 2,500 V AC (core/core & core/screen)          |
| Operating temperature (fixed) | -40 °C to +70 °C                                                                                             | Installation temperature   | -20 °C to +50 °C                              |
| Screen & armour system        | (L)2Y Al + Cu wire screen (D) + steel tapes (B)                                                              | Min. bending radius        | 15 × overall cable diameter                   |
| Max. pulling tension          | 50 N/mm <sup>2</sup> of total copper cross-section                                                           | AC traction induction      | Protected against 15 kV 16.7 Hz & 25 kV 50 Hz |
| Radial moisture barrier       | (L)2Y laminated aluminum/PE inner sheath                                                                     | Rodent & impact resistance | Double steel tape armour ('B') + HDPE jacket  |
| Standards                     | DB TL 416.0115 & DIN VDE 0816                                                                                |                            |                                               |

## Sizes

10 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

| Order designation                                    | Cross-section / size | Conductor build | Wall $\approx$<br>mm | Outer $\varnothing \approx$<br>mm | Metal<br>kg/km | Weight $\approx$<br>kg/km | Min. bend R<br>fixed mm |
|------------------------------------------------------|----------------------|-----------------|----------------------|-----------------------------------|----------------|---------------------------|-------------------------|
| Standard AJ-2Y(L)2YDB2Y H45 configurations 10 sizes  |                      |                 |                      |                                   |                |                           |                         |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 2×4×0.9 H45  | 2×4×0.9              | $\leq 0.20$     | 1.89                 | 17.20                             | 184.8          | 420.0                     | 260                     |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 4×4×0.9 H45  | 4×4×0.9              | $\leq 0.20$     | 2.15                 | 19.50                             | 239.8          | 545.0                     | 295                     |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 6×4×0.9 H45  | 6×4×0.9              | $\leq 0.15$     | 2.42                 | 22.00                             | 299.2          | 680.0                     | 330                     |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 10×4×0.9 H45 | 10×4×0.9             | $\leq 0.15$     | 2.79                 | 25.40                             | 400.4          | 910.0                     | 380                     |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 14×4×0.9 H45 | 14×4×0.9             | $\leq 0.12$     | 3.10                 | 28.20                             | 497.2          | 1,130.0                   | 425                     |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 20×4×0.9 H45 | 20×4×0.9             | $\leq 0.10$     | 3.50                 | 31.80                             | 633.6          | 1,440.0                   | 480                     |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 2×4×1.4 H45  | 2×4×1.4              | $\leq 0.20$     | 2.27                 | 20.60                             | 279.4          | 635.0                     | 310                     |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 4×4×1.4 H45  | 4×4×1.4              | $\leq 0.15$     | 2.58                 | 23.50                             | 374.0          | 850.0                     | 355                     |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 6×4×1.4 H45  | 6×4×1.4              | $\leq 0.15$     | 2.97                 | 27.00                             | 492.8          | 1,120.0                   | 405                     |
| <input type="checkbox"/> AJ-2Y(L)2YDB2Y 10×4×1.4 H45 | 10×4×1.4             | $\leq 0.10$     | 3.46                 | 31.50                             | 699.6          | 1,590.0                   | 475                     |

– Outer diameters and weights are nominal engineering values for AJ-2Y(L)2YDB2Y H45 subject to standard manufacturing tolerances per DB 416.0115 / DIN VDE 0816 AJ Induction-Protected H45 Railway Telecom Specification.

## Electrical & rating data

10 sizes

| Configuration | Max. DC R @ 20 °C<br>$\Omega/\text{km}$ | Primary rating<br>(A or nF/km) | Secondary<br>rating | Dielectric test<br>V AC rms |
|---------------|-----------------------------------------|--------------------------------|---------------------|-----------------------------|
| 2×4×0.9       | 12.80                                   | 45.0                           | 38.2                | 2,500                       |
| 4×4×0.9       | 12.80                                   | 45.0                           | 38.2                | 2,500                       |
| 6×4×0.9       | 12.80                                   | 45.0                           | 38.2                | 2,500                       |
| 10×4×0.9      | 12.80                                   | 45.0                           | 38.2                | 2,500                       |
| 14×4×0.9      | 12.80                                   | 45.0                           | 38.2                | 2,500                       |
| 20×4×0.9      | 12.80                                   | 45.0                           | 38.2                | 2,500                       |
| 2×4×1.4       | 12.80                                   | 45.0                           | 38.2                | 2,500                       |
| 4×4×1.4       | 12.80                                   | 45.0                           | 38.2                | 2,500                       |
| 6×4×1.4       | 12.80                                   | 45.0                           | 38.2                | 2,500                       |
| 10×4×1.4      | 12.80                                   | 45.0                           | 38.2                | 2,500                       |

– Electrical resistance at +20 °C and dielectric withstand voltages verified per DB 416.0115 / DIN VDE 0816 AJ Induction-Protected H45 Railway Telecom Specification.

## Standards and approvals

- ✓ DB 416.0115 / DIN VDE 0816 AJ Induction-Protected H45 Railway Telecom Specification
- ✓ CE (2014/35/EU) & RoHS 3 (2015/863/EU) Compliant
- ✓ REACH SVHC Compliance Verified

## Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

### Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

[tebaoflex.com/cables/aj-2y-l-2ydb2y-h45-induction-protected-railway-telecom-cable](https://tebaoflex.com/cables/aj-2y-l-2ydb2y-h45-induction-protected-railway-telecom-cable)



Typical values for this cable type, based on DB 416.0115 / DIN VDE 0816 AJ Induction-Protected H45 Railway Telecom Specification. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.