

### FLAME RETARDANT CONTROL CABLE

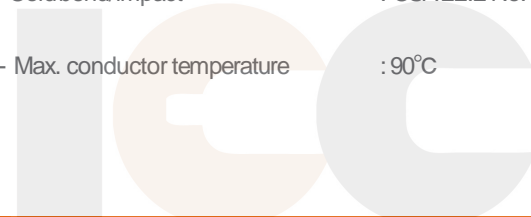


#### Cable Designation

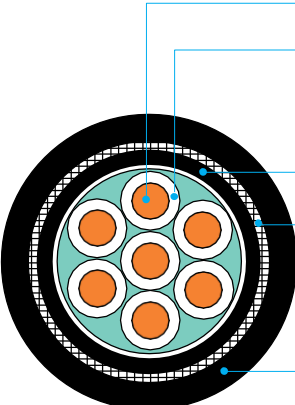
150/250V MPY, FA-MPY  
150/250V MPYC, FA-MPYC  
150/250V MPYCY, FA-MPYCY

#### Application Standard

- Design guide : JIS C 3410(2010)
- Flame retardant : IEC 60332-1  
: IEC 60332-3 Category A (FA-Type)
- Cold bend/impact : CSA 22.2 No. 03 (-40°C/-35°C) (Cold Type Only)
- Max. conductor temperature : 90°C



### Construction

Sectional view	Classification	Code	Construction detail			
	Conductor	<b>M</b>	- Stranded tinned annealed copper wires as per JIS C 3410(2010) - A suitable tape may be applied on the conductor			
	Insulation	<b>P</b>	- EPR as per JIS C 3410(2010)			
	Cabling		- Insulated conductors shall be cabled. - Flame retardant & non-hygroscopic fillers may be used. - Suitable tape(s) may be applied on the cabled core.			
	Sheath	<b>Y</b>	- PVC as per JIS C 3410(2010)			
	Armour	<b>C</b>	- Braid of galvanized steel wire(C) - Coverage density : Min. 90%			
	Paint		- The white paint shall be painted uniformly on the wire braid - In case of PVC protective covering cable, paint is dispensable			
	Protective Covering	<b>Y</b>	- PVC as per JIS C 3410(2010) - Protective covering color : Black - Any other color may be applicable when purchaser required.			
Core identification		<table border="1"> <thead> <tr> <th>Without Earth core</th> <th>With Earth core</th> </tr> </thead> <tbody> <tr> <td>Black No. on white insulation</td> <td>Black No. on white insulation, GY</td> </tr> </tbody> </table>	Without Earth core	With Earth core	Black No. on white insulation	Black No. on white insulation, GY
Without Earth core	With Earth core					
Black No. on white insulation	Black No. on white insulation, GY					

**Note.** Cold type cable ("C") can be supplied.

# JIS CABLE

## JIS C 3410 (2010)

150/250V (FA-)MPY, 150/250V (FA-)MPYC, 150/250V (FA-)MPYCY

No. of Cores	Conductor			(FA-)MPY		(FA-)MPYC		(FA-)MPYCY		Conductor Resistance (at 20°C) (Max)	Insulation Resistance (at 20°C) (Min)	Cable Weight (Approx.)		
	Nominal Area mm <sup>2</sup>	Strand No./mm	Dia. mm	Nominal Area mm	Tolerance ±mm	Nominal Dia. mm	Tolerance ±mm	Nominal Dia. mm	Tolerance ±mm			(FA-)MPY kg/km	(FA-)MPYC kg/km	(FA-)MPYCY kg/km
2				8.7	0.4	10.0	0.4	12.0	0.5			85	155	205
4				9.9	0.4	11.2	0.4	13.2	0.5			125	205	260
5				10.3	0.5	11.8	0.5	13.8	0.6			160	240	300
7				11.9	0.5	13.2	0.5	15.2	0.6			190	290	350
9				13.2	0.7	14.7	0.7	16.9	0.8			260	370	440
10				14.5	0.7	16.0	0.8	18.2	0.8			290	420	490
12				15.5	0.7	16.8	0.7	19.0	0.8			315	440	525
14	1.0	7/0.43	1.29	15.7	0.7	17.2	0.7	19.4	0.9	19.3	1,000	370	500	580
16				16.5	0.8	18.0	0.8	20.4	0.9			410	550	650
19				18.3	0.8	19.6	0.8	22.0	0.9			465	615	720
23				20.7	0.9	22.2	0.9	24.8	1.0			620	790	920
27				22.1	0.9	23.4	0.9	26.0	1.0			665	840	980
33				22.9	1.0	24.4	1.0	27.0	1.1			800	990	1,130
37				24.8	1.0	26.1	1.0	28.9	1.2			870	1,070	1,240
44				28.0	1.2	29.3	1.2	32.1	1.3			1,060	1,290	1,470

### FLAME RETARDANT CONTROL CABLE



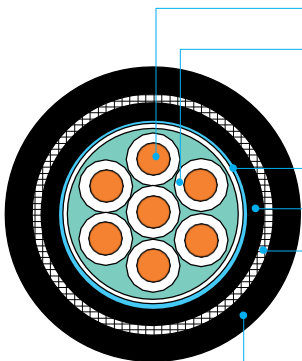
#### Cable Designation

150/250V MPYSLA, FA-MPYSLA,  
150/250V MPYCSLA, FA-MPYCSLA,  
150/250V MPYCYSLA, FA-MPYCYSLA

#### Application Standard

- Design guide : JISC 3410(2010)
- Flame retardant : IEC 60332-1  
: IEC 60332-3 Category A (FA-Cables Only)
- Cold bend/impact : CSA 22.2 No. 03 (-40°C/-35°C) (Cold Type Only)
- Max. conductor temperature : 90°C

#### Construction

Sectional view	Classification	Code	Construction detail
	Conductor	<b>M</b>	- Stranded tinned annealed copper wires as per JIS C 3410(2010) - A suitable tape may be applied on the conductor
	Insulation	<b>P</b>	- EPR as per JIS C 3410(2010)
	Cabling		- Insulated conductors shall be cabled. - Flame retardant & non-hygroscopic fillers may be used. - Suitable tape(s) may be applied on the cabled core.
	Commonshield	<b>SLA</b>	- Screened by AL/PS tape with tinned copper drain wire. - A suitable tape may be applied on the common shield
	Sheath	<b>Y</b>	- PVC as per JIS C 3410(2010)
	Armour	<b>C</b>	- Braid of galvanized steel wire(C) - Coverage density : Min. 90%
	Paint		- The white paint shall be painted uniformly on the steel wire braid - In case of PVC protective covering cable, paint is dispensable.
	Protective Covering	<b>Y</b>	- PVC as per JIS C 3410(2010) - Protective covering color : Black - Any other color may be applicable when purchaser required.
	Core identification		- Black No. on white insulation

**Note.** Cold type cable ("C") can be supplied.

#### 150/250V (FA-)MPYSLA, 250V (FA-)MPYCSLA, 250V (FA-)MPYCYSLA

No. of Cores	Conductor			(FA-)MPYSLA		(FA-)MPYCSLA		(FA-)MPYCYSLA		Conductor Resistance (at 20°C) (Max)	Insulation Resistance (at 20°C) (Min)	Cable Weight (Approx.)		
	Nominal Area	Strand	Dia.	Nominal Overall Dia.	Tolerance	Nominal Overall Dia.	Tolerance	Nominal Overall Dia.	Tolerance			(FA-)MPYSLA	(FA-)MPYCSLA	(FA-)MPYCYSLA
No.	mm <sup>2</sup>	No./mm	mm	mm	±mm	mm	±mm	mm	±mm	Ω/km	MΩ - km	kg/km	kg/km	kg/km
2				8.9	0.4	10.2	0.4	12.0	0.5			1,500	160	200
4				10.1	0.4	11.4	0.5	13.4	0.5			1,500	210	260
7				12.1	0.5	13.4	0.5	15.4	0.6			1,500	290	355
12				15.7	0.6	17.0	0.7	19.2	0.8			1,500	445	530
19	1.0	7/0.43	1.29	18.5	0.7	19.8	0.8	22.2	0.9	19.3	1,000	1,500	615	725
27				22.3	0.9	23.6	0.9	26.2	1.0			1,500	845	985
37				25.0	1.0	26.3	1.1	29.1	1.2			1,500	1,070	1,240
44				28.2	1.1	29.5	1.2	32.5	1.3			1,500	1,290	1,490

### FLAME RETARDANT CONTROL CABLE



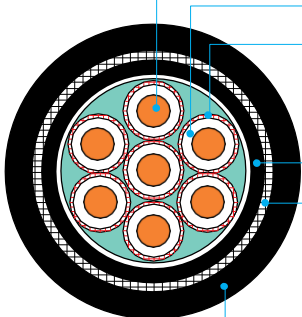
#### Cable Designation

150/250V MPY-S, FA-MPY-S,  
150/250V MPYC-S, FA-MPYC-S,  
150/250V MPYCY-S, FA-MPYCY-S

#### Application Standard

- Design guide : JIS C 3410(2010)
- Flame retardant : IEC 60332-1  
: IEC 60332-3 Category A (FA-Cables Only)
- Cold bend/impact : CSA 22.2 No. 03 (-40°C/-35°C) (Cold Type Only)
- Max. conductor temperature : 90°C

#### Construction

Sectional view	Classification	Code	Construction detail
	Conductor	<b>M</b>	- Stranded tinned annealed copper wires as per JIS C 3410(2010) - A suitable tape may be applied on the conductor
	Insulation	<b>P</b>	- EPR as per JIS C 3410(2010)
	Individual shield	<b>-S</b>	- Tinned copper wire braid - A suitable tape may be applied on the individual shield
	Cabling		- Insulated conductors shall be cabled. - Flame retardant & non-hygroscopic fillers may be used. - Suitable tape(s) may be applied on the cabled core.
	Sheath	<b>Y</b>	- PVC as per JIS C 3410(2010)
	Armour	<b>C</b>	- Braid of galvanized steel wire(C) - Coverage density : Min. 90%
	Paint		- The white paint shall be painted uniformly on the steel wire braid - In case of PVC protective covering cable, paint is dispensable.
	Protective Covering	<b>Y</b>	- PVC as per JIS C 3410(2010) - Protective covering color : Black - Any other color may be applicable when purchaser required.
	Core identification		- Black No. on white insulation

**Note.** Cold type cable ("C") can be supplied.

#### 150/250V (FA-)MPY-S, 150/250V (FA-)MPYC-S, 150/250V (FA-)MPYCY-S

No. of Cores	Conductor			(FA-)MPY-S		(FA-)MPYC-S		(FA-)MPYCY-S		Conductor Resistance (at 20°C) (Max)	Insulation Resistance (at 20°C) (Min)	Cable Weight (Approx.)		
	Nominal Area	Strand	Dia.	Nominal Overall Dia.	Tolerance	Nominal Overall Dia.	Tolerance	Nominal Overall Dia.	Tolerance			(FA-)MPY-S	(FA-)MPYC-S	(FA-)MPYCY-S
No.	mm <sup>2</sup>	No./mm	mm	mm	±mm	mm	±mm	mm	±mm	Ω/km	MΩ - km	kg/km	kg/km	kg/km
2				10.1	0.4	11.4	0.5	13.4	0.5	19.3	1,000	150	210	260
4				11.8	0.5	13.1	0.5	15.1	0.6	19.3	1,000	230	300	360
5				12.2	0.6	13.7	0.6	15.7	0.7	19.3	1,000	270	340	400
7				14.2	0.6	15.5	0.6	17.7	0.7	19.3	1,000	350	435	515
9				15.5	0.8	17.0	0.8	19.2	0.9	19.3	1,000	440	510	590
10				17.1	0.8	18.6	0.8	21.0	0.9	19.3	1,000	440	580	680
12				18.7	0.8	20.0	0.8	22.4	0.9	19.3	1,000	570	685	795
14	1.0	7/0.43	1.29	18.5	0.8	20.0	0.9	22.4	0.9	19.3	1,000	580	710	820
16				19.8	0.9	21.3	0.9	23.7	1.0	19.3	1,000	690	800	920
19				22.2	0.9	23.5	0.9	26.1	1.0	19.3	1,000	840	980	1,120
23				23.1	1.0	24.6	1.0	27.2	1.1	19.3	1,000	940	1,070	1,210
27				26.6	1.1	27.9	1.1	30.7	1.2	19.3	1,000	1,200	1,360	1,540
33				27.2	1.2	28.7	1.2	31.5	1.2	19.3	1,000	1,300	1,450	1,640
37				30.1	1.2	31.4	1.3	34.4	1.4	19.3	1,000	1,600	1,760	1,970
44				34.0	1.4	35.8	1.4	39.0	1.6	19.3	1,000	2,000	2,240	2,500

### FIRE RESISTANT CONTROL CABLE



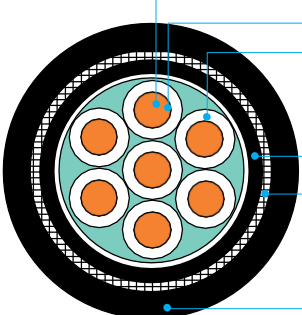
#### Cable Designation

150/250V FR-MPY, FR-FA-MPY,  
150/250V FR-MPYC, FR-FA-MPYC,  
150/250V FR-MPYCY, FR-FA-MPYCY

#### Application Standard

- Design guide : JIS C 3410(2010)
- Flame retardant : IEC 60332-1  
: IEC 60332-3 Category A(FR-FA-Cables Only)
- Fire resistant : IEC 60331-21 & IEC 60331-1, -2 (120minute)
- Cold bend / impact : CSA 22.2 No. 03(-40°C/-35°C)(Cold Type Only)
- Max. rated conductor temperature : 90°C

#### Construction

Sectional view	Classification	Code	Construction detail
	Conductor	<b>M</b>	- Stranded tinned annealed copper wires as per JIS C 3410(2010) - A suitable tape may be applied on the conductor
	Fire resisting layer	<b>FR-(FA-)</b>	- Mica/glass tape
	Insulation	<b>P</b>	- EPR as per JIS C 3410(2010)
	Cabling		- Insulated conductors shall be cabled. - Flame retardant & non-hygroscopic fillers may be used. - Suitable tape(s) may be applied on the cabled core.
	Sheath	<b>Y</b>	- PVC as per JIS C 3410(2010)
	Armour	<b>C</b>	- Braid of galvanized steel wire(C) - Coverage density : Min. 90%
	Paint		- The white paint shall be painted uniformly on the steel wire braid - In case of PVC protective covering cable, paint is dispensable.
	Protective Covering	<b>Y</b>	- PVC as per JIS C 3410(2010) - Protective covering color : Black - Any other color may be applicable when purchaser required.
	Core identification		- Black No. on white insulation

**Note.** Cold type cable ("C") can be supplied.

#### 150/250V FR-(FA-)MPY, 150/250V FR-(FA-)MPYC, 150/250V FR-(FA-)MPYCY

No. of Cores	Conductor			(FA-)MPY		(FA-)MPYC		(FA-)MPYCY		Conductor Resistance (at 20°C) (Max)	Insulation Resistance (at 20°C) (Min)	Cable Weight (Approx.)		
	Nominal Area	Strand	Dia.	Nominal Overall Dia.	Tolerance	Nominal Overall Dia.	Tolerance	Nominal Overall Dia.	Tolerance			(FA-)MPY	(FA-)MPYC	(FA-)MPYCY
No.	mm <sup>2</sup>	No./mm	mm	mm	±mm	mm	±mm	mm	±mm	Ω/km	MΩ - km	kg/km	kg/km	kg/km
2				10.9	0.5	12.2	0.5	14.2	0.6	19.3	700	120	210	265
4				12.8	0.6	14.1	0.6	16.3	0.7	19.3	700	185	290	360
7				15.4	0.7	16.7	0.7	18.9	0.8	19.3	700	285	410	490
12				20.5	0.9	21.8	0.9	24.2	1.0	19.3	700	485	650	765
19	1.0	7/0.43	1.29	24.2	1.0	25.5	1.0	28.1	1.1	19.3	700	705	900	1,050
27				29.3	1.2	30.6	1.2	33.6	1.3	19.3	700	1,010	1,250	1,450
37				33.1	1.4	34.9	1.4	38.3	1.5	19.3	700	1,330	1,700	1,970
44				37.4	1.6	39.2	1.6	42.8	1.7	19.3	700	1,630	2,040	2,360