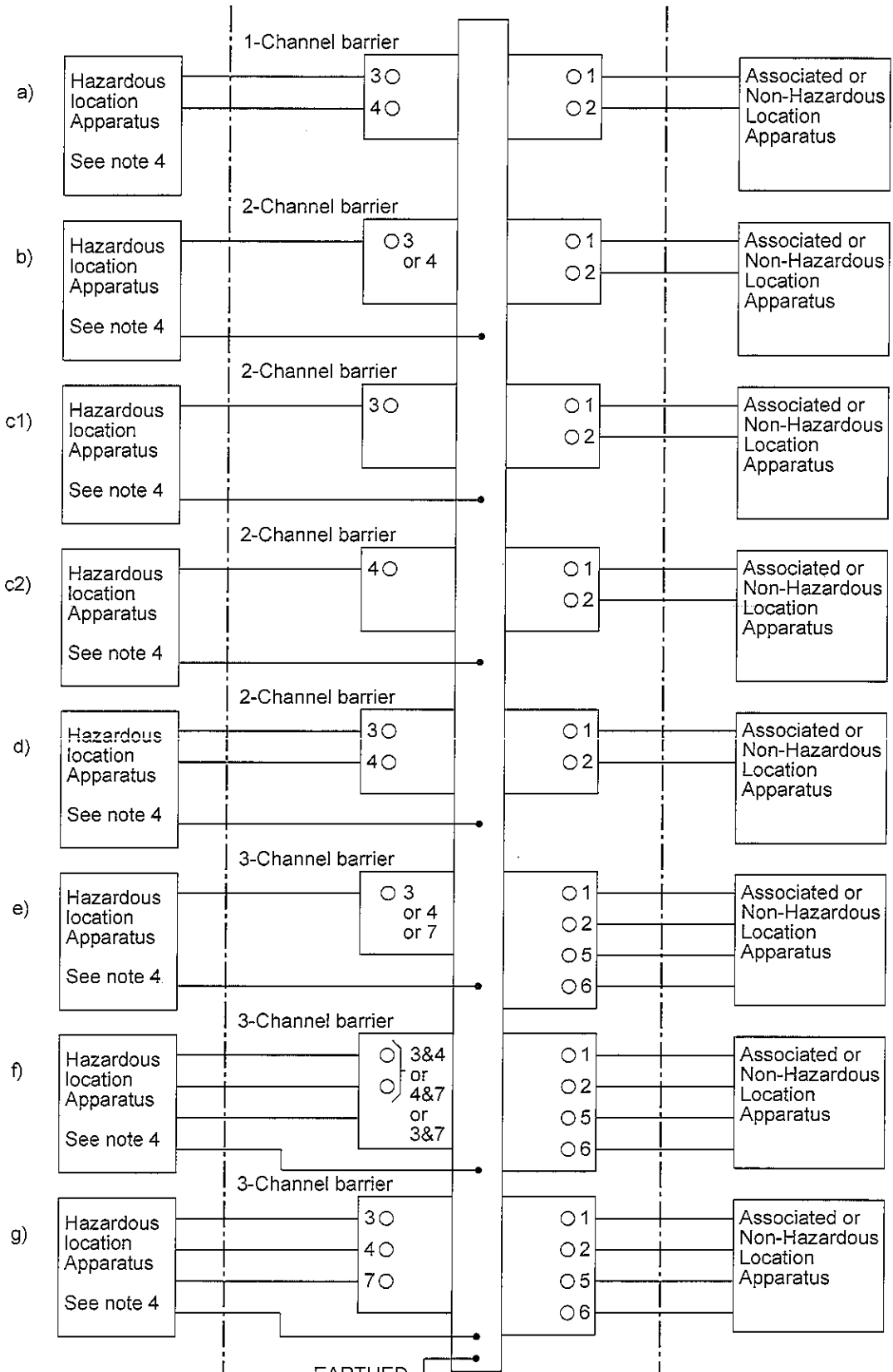


Is	1	8.01	CMB	Modification		No		Cl		Ckd	
	2	10.01	CMB	Reference to Note 9 added.							
	3	11.01	CMB	See sheets 4 & 5.							
	4	2.02	SM	MTL7706+ 07+, 07P+, 58+/-, 88+/- added. Extra sheets added.							
Date	8.01			Drn	CMB			Modification		MTL7741, 42, 43, 44, 45 & 78ac added. Extra sheet added.	
Is	5			Date	6.02			Drn	SM		
MEASUREMENT TECHNOLOGY LTD Luton, England Copyright Reserved - Written Permission to Copy Should be Obtained											

Dimensions in mm

Do Not Scale

Third Angle Projection



HAZARDOUS LOCATION
 Class I, II, III; Division 1
 Groups A, B, C, D, E, F, G or Class I;
 Zone 0, 1, 2 Groups IIC, IIB, IIA
 (But see Note 9)

NON HAZARDOUS LOCATION OR
 DIVISION 2 HAZARDOUS LOCATION
 Class I Division 2 Groups A, B, C, D
 or Class I; Zone 2 Groups IIC, IIB, IIA

NON HAZARDOUS LOCATION

System Certificate No.	Scale	N/A
Certifying Authority: FM	Sheet	1 of 10
Title	Drg. No.	
MTL7700 SERIES BARRIER CONTROL DRAWING	SCI-942	

Is	1	8.01	CMB								
Date	2	10.01	CMB	See all other sheets.							
Is	3	11.01	CMB	See sheets 4 & 5.							
Date	4	2.02	SM	Note 4 modified.							
Is	5	6.02	SM	See sheet 1.							
Date											
Dim											
Modification											
No											
Cl											
Ckd											

Dimensions in mm Do Not Scale Third Angle Projection

Note 1
 MTL7700 Series Shunt Diode Barriers must be secured to a DIN 'T' section (35x27x7.5mm) mounting rail. Rails constructed of aluminium or aluminium-based alloys must not be used. The mounting rail must be provided with at least one grounding terminal (two are recommended) which should be situated at each end of the rail. These terminals are to be used for the intrinsic safety grounding and must be capable of accommodating conductors up to 4mm in cross-section (12 AWG).

Note 2
 The intrinsic safety grounding system must be such that when installed the ground loop impedance (including the mounting rail) does not exceed 1.0Ω.

Note 3
 The Non-Hazardous (Safe) Location or Division 2/Zone 2 equipment must not generate or use voltages (Um) in excess of 250V rms or dc.

Note 4
 The Hazardous Location equipment may be Factory Mutual Research Approved devices suitable for the locations which it is to be installed and with correct Entity parameters or Simple Apparatus. If the Simple Apparatus consists only of switches, then the entity parameter table on subsequent pages of this drawing applies without any temperature limitation.

If the Simple Apparatus consists of thermocouples (TC's), Light Emitting Diodes (LED's) or Resistance Temperature Devices (RTD's), with or without switches, then the maximum output power (Po) from the barrier connected to simple apparatus must not exceed the following:

Maximum barrier output power (Po)	Maximum ambient Temperature (Ta) where simple apparatus is located
1.3 Watts	40°C
1.2 Watts	60°C
1.0 Watts	80°C

Note 5
 Barriers must be installed in suitable equipment enclosure meeting requirements of ANSI/ISA S82.02.01 or in compliance with the enclosure, mounting, spacing, and segregation requirements of the ultimate application.

Note 6
 The MTL7700 Series Shunt Diode safety barriers are Associated Apparatus, and when mounted in an appropriate enclosure may be installed in the following locations:

- i Non-Hazardous (Safe) Locations
 - ii Class I, Division 2, Groups A,B,C, and D or Class I, Zone 2, IIC, IIB, IIA Hazardous Locations and T4 Temperature code.
- When installed in a Factory Mutual Research Approved or NRTL Listed, dust-ignition proof enclosure, the barriers may also be installed in the following locations:
- iii Class II Division 2, Groups F and G Hazardous Locations and T4 Temperature code.
 - iv Class III, Division 2 Hazardous Locations and T4 Temperature code.

System Certificate No.		Scale	N/A
Certifying Authority: FM		Sheet	3 of 10
Title		Drg. No.	
MTL7700 SERIES BARRIER CONTROL DRAWING		SCI-942	

Ckld		TKM		Dimensions in mm		Do Not Scale		Third Angle Projection	
CI									
No									
Modification		See sheet 1.							
Drm		SM							
Date		6.02							
Is		5							
MEASUREMENT TECHNOLOGY LTD		Luton, England							
Copyright Reserved - Written Permission		to Copy Should be Obtained							
Ckld									
CI									
No									
Modification		Note 9 added.		Note 10 added.		See sheet 1.			
Drm		CMB		CMB		CMB		SM	
Date		8.01		10.01		11.01		2.02	
Is		1		2		3		4	
System Certificate No.								Scale N/A	
Certifying Authority: FM								Sheet 4 of 10	
Title		MTL7700 SERIES BARRIER CONTROL DRAWING						Drg. No. SCI-942	

Note 7
For guidance on the installation refer to ANSI/ISA RP2.6 "Wiring Practices for Hazardous (Classified) Locations Instruments, Part I: Intrinsic Safety" and the National Electrical Code (ANSI/NFPA 70).

Note 8
Entity parameters for barriers listed in the parameters table must be used to determine the suitability of the barrier for connection to hazardous location apparatus. The following must be observed:

$$V_{oc} \text{ or } V_t (U_o) \leq V_{max} (U_i)$$

$$I_{sc} \text{ or } I_t (I_o) \leq I_{max} (I_i)$$

$$P_o \leq P_i$$

$$C_a (C_o) \geq C_{cable} + C_i$$

$$L_a (L_o) \geq L_{cable} + L_i \text{ or } L_a/R_a (L_o/R_o) \geq L_{cable}/R_{cable} \text{ and } L_a/R_a (L_o/R_o) \geq L_i/R_i$$

Note 9
Certain barriers are not permitted as associated apparatus for Div 1 Groups A,B or Zones 0,1 Group IIC. Refer to entries with asterisks in the following table.

Note 10
When fitted in a Safe Area, the barriers may be used at the same maximum ambient temperature as when used in Division 2 or Zone 2.

WARNING:
The following precautions must be taken when MTL7700 Series Shunt Diode Barriers are installed in Division 2 or Zone 2 Hazardous locations:

- i Barriers must not be fitted to or removed from the DIN rail unless power is off or the location is known to be free of flammable vapors.
- ii Plug in terminals on non-hazardous (Safe) side of the barriers as well as the bus power terminal jumper of barriers fitted with the bus power feature, must not be inserted or removed unless power is off or the location is known to be free of flammable vapors.

Is	Date	Drn	Modification	No	Cl	Ckd
4	2.02	SM	See sheet 1.			
5	6.02	SM	See sheet 1.			
<p style="text-align: center;">MEASUREMENT TECHNOLOGY LTD Luton, England</p> <p style="text-align: center;">Copyright Reserved - Written Permission to Copy Should be Obtained</p>						

Dimensions in mm

Do Not Scale

Third Angle Projection

BARRIER Model Terminals	C O N F I G	Voc or Uo (V)	Isc or Io (mA)	Vt or Uo (V)	It or Io (mA)	Po (W)	Ca or Co (μF)	La or Lo (mH)	La/Ra or Lo/Ro (μH/Ω)
MTL7729P+/- 3 & 4	a	28	170	—	—	1.19	* /0.65/2.15	* /5.65/11.34	* /127/260
MTL7741 3 & 4	d	—	—	10	19	0.039	2.86 /20.0/100	96 /365/696	742/1900/1900
MTL7742 3 & 4	d	—	—	10	19	0.039	2.86 /20.0/100	96 /365/696	742/1900/1900
MTL7743 3 & 4 or 7 & 8	k	—	—	10	19	0.039	2.86 /20.0/100	96 /365/696	742/1900/1900
MTL7743 3,4,7 & 8	j	—	—	10	38	0.078	2.73 /19.9/100	25 /91/193	184/694/1323
MTL7744 3 & 4 or 7 & 8	k	—	—	10	19	0.039	2.86 /20.0/100	96 /365/696	742/1900/1900
MTL7744 3,4,7 & 8	j	—	—	10	38	0.078	2.73 /19.9/100	25 /91/193	184/694/1323
MTL7745 3 & 4	d	—	—	10	19	0.039	2.86 /20.0/100	96 /365/696	742/1900/1900
MTL7755ac 3 & GND or 4 & GND	b	3	300	—	—	0.225	100/1000/1000	0.46/1.37/3.66	145/722/1442
MTL7755ac 3 & 4	d	—	—	6	600	0.45	40/1000/1000	0.13/0.39/1000	69/206/548

* Not permitted for Groups A/B(IIC)

System Certificate No.

Scale N/A

Certifying Authority: FM

Sheet 6 of 10

Title
MTL7700 SERIES BARRIER CONTROL DRAWING

Drg. No.
SCI-942

Is	Date	Drn	Modification	No	Cl	Ckd
1	8.01	CMB				
2	10.01	CMB	Right-hand column was mH/Ω.			
3	11.01	CMB	MTL7760ac & MTL7765ac added.			
4	2.02	SM	See sheet 1.			



MEASUREMENT TECHNOLOGY LTD
Luton, England
Copyright Reserved - Written Permission
to Copy Should be Obtained




No	Cl	Ckd

Dimensions in mm Do Not Scale Third Angle Projection

BARRIER Model	Terminals	C	Voc or Uo (V)	Isc or Io (mA)	Vt or Uo (V)	It or Io (mA)	Po (W)	Ca or Co (μF)	La or Lo (mH)	La/Ra or Lo/Ro (μH/Ω)
MTL7756ac 3 & GND or 4 & GND or 7 & GND	e	3	—	300	—	—	0.225	100/1000/1000	0.46/1.37/3.66	145/722/1442
MTL7756ac 3 & 4 or 4 & 7 or 3 & 7	f	—	—	—	6	600	0.45	40/1000/1000	0.13/0.39/1.03	69/206/548
MTL7756ac 3 & 4 & 7	g	—	—	—	6	900	0.675	40/1000/1000	0.06/0.19/0.49	44/131/349
MTL7758+/- 3 & GND	c1	7.5	—	750	—	—	1.4	11.1/174/1000	0.07/0.20/0.54	26/77/206
MTL7758+/- 4 & GND	c2	7.5	—	750	—	—	1.4	11.1/174/1000	0.07/0.20/0.54	26/77/206
MTL7758+/- 3 & 4	d	—	—	—	7.9	1500	2.8	8.8/115/1000	0.02/0.05/0.14	10/30/81
MTL7760ac 3 & GND or 4 & GND	b	10	—	200	—	—	0.5	3.0/20.2/100	0.91/2.72/7.25	74/310/627
MTL7760ac 3 & 4	d	—	—	—	10	400	1.0	3.0/20.2/100	0.2/1.0/1.8	35.6/142.2/284.4
MTL7761ac 3 & GND or 4 & GND	b	9	—	100	—	—	0.225	4.9/40/500	3.72/15/500	163/616/1299
MTL7761ac 3 & 4	d	—	—	—	18	200	0.45	0.31/1.78/7.6	0.91/2.72/7.2	62/258/522
MTL7761Pac 3 & GND or 4 & GND	b	9	—	26	—	—	0.058	4.9/40/500	56/208/419	613/2382/2778
MTL7761Pac 3 & 4	d	—	—	—	18	52	0.115	0.31/1.78/7.6	14/55/116	236/870/1747

System Certificate No.	Scale	N/A
Certifying Authority: FM	Sheet	7 of 10
Title	Dr. No.	SCI-942
MTL7700 SERIES BARRIER CONTROL DRAWING		

Is	Date	Drm	Modification	No	Cl	Ckd
1	8.01	CMB				
2	10.01	CMB	Right-hand column was mH/Ω.			
3	11.01	CMB	See sheets 4 & 5.			
4	2.02	SM	See sheet 1.			


MEASUREMENT TECHNOLOGY LTD
 Luton, England
 Copyright Reserved - Written Permission
 to Copy Should be Obtained

Dimensions in mm
Do Not Scale
Third Angle Projection

BARRIER Model	C O N F I G	Voc or Uo (V)	Isc or Io (mA)	Vt or Uo (V)	It or Io (mA)	Po (W)	Ca or Co (μF)	AB(IIC)/CE(IIB)/DFG(IIA)	La or Lo (mH)	AB(IIC)/CE(IIB)/DFG(IIA)	La/Ra or Lo/Ro (μH/Ω)	AB(IIC)/CE(IIB)/DFG(IIA)
MTL7764+/- 3 & GND or 4 & GND	b	12	12	—	—	0.036	1.41/9/36	240/932/1000	240/932/1000	1000/1000/1000		
MTL7764+/- 3 & 4	d	—	—	13	24	0.072	1.0/6.2/22.5	61/226/452	61/226/452	360/1398/1500		
MTL7764ac 3 & GND or 4 & GND	b	12	12	—	—	0.036	1.41/9/36	240/932/1000	240/932/1000	1000/1000/1000		
MTL7764ac 3 & 4	d	—	—	24	24	0.072	0.125/0.93/3.35	61/226/452	61/226/452	360/1398/1500		
MTL7765ac 3 & GND or 4 & GND	b	15	150	—	—	0.56	0.58/3.55/14.0	1.45/7.22/14.0	1.45/7.22/14.0	66/263/544		
MTL7765ac 3 & 4	d	—	—	15	300	1.12	0.58/3.55/14.0	0.32/0.95/2.54	0.32/0.95/2.54	31.6/126.4/252.8		
MTL7766ac 3 & GND or 4 & GND	b	12	80	—	—	0.24	1.41/9/36	5.8/23/48	5.8/23/48	151/556/1174		
MTL7766ac 3 & 4	d	—	—	24	160	0.48	0.125/0.93/3.35	1.47/4.4/11	1.47/4.4/11	58/234/481		
MTL7766Pac 3 & GND or 4 & GND	b	12	157	—	—	0.471	1.41/9/36	1.47/44/11	1.47/44/11	78/313/644		
MTL7766Pac 3 & 4	d	—	—	24	314	0.942	0.125/0.93/3.35	0.34/1.02/2.71	0.34/1.02/2.71	29/87/231		
MTL7767+/- 3 & GND or 4 & GND	b	15	150	—	—	0.56	0.58/3.55/14	1.45/7.22/14	1.45/7.22/14	66/263/544		
MTL7767+/- 3 & 4	d	—	—	15	300	1.125	0.58/3.55/14	0.32/0.95/2.54	0.32/0.95/2.54	22/108/216		

* Not permitted for Groups A/B(IIC)

System Certificate No.		Scale	N/A
Certifying Authority: FM		Sheet	8 of 10
Title		Drg. No.	SCI-942
MTL7700 SERIES BARRIER CONTROL DRAWING			

Is	Date	Drn	Modification	No	Cl	Ckd
1	8.01	CMB				
2	10.01	CMB	Right-hand column was mh/Ω.			
3	11.01	CMB	See sheets 4 & 5.			
4	2.02	SM	See sheet 1.			

MEASUREMENT TECHNOLOGY LTD
Luton, England
Copyright Reserved - Written Permission to Copy Should be Obtained

BARRIER Model	Terminal	C	Voc or Uo (V)	Isc or Io (mA)	Vt or Uo (V)	It or Io (mA)	Po (W)	Ca or Co (μF)	La or Lo (mH)	La/Ra or Lo/Ro (μH/Ω)
MTL7778ac	3 & GND or 4 & GND	b	28	47	—	—	0.33	0.083/0.65/2.15	16/62/130	107/398/789
MTL7778ac	3 & 4	d	—	—	28	93	0.654	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7779+/-	3 & GND or 4 & GND	b	28	93	—	—	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7779+/-	3 & 4	d	—	—	28.3	186	1.3	* /0.63/2.09	* /4.1/7.9	* /108/217
MTL7787+/-	3 & GND	c1	28	93	—	—	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7787+/-	4 & GND	c2	28	0	—	—	—	0.083/0.65/2.15	—	—
MTL7787+/-	3 & 4	d	—	—	29.4	93	0.65	0.071/0.587/1.91	4.2/12.6/33.6	56/210/444
MTL7787P+/-	3 & GND	c1	28	119	—	—	0.835	0.083/0.65/2.15	2.5/17.53/20	44/168/354
MTL7787P+/-	4 & GND	c2	28	0	—	—	—	0.083/0.65/2.15	2.5/17.53/20	44/168/354
MTL7787P+/-	3 & 4	d	—	—	28.5	119	0.835	0.078/0.627/2.05	2.5/17.53/20	44/168/354

System Certificate No.		Scale	N/A
Certifying Authority: FM		Sheet	g of 10
Title		Drg. No.	
MTL7700 SERIES BARRIER CONTROL DRAWING		SCI-942	

Dimensions in mm Do Not Scale Third Angle Projection

Is	5	Date	6.02	Drn	SM	Modification	See sheet 1.	No		Cl		Ckd	
Is		Date		Drn		Modification		No		Cl		Ckd	

MEASUREMENT TECHNOLOGY LTD
 Luton, England
 Copyright Reserved - Written Permission
 to Copy Should be Obtained

Dimensions in mm Do Not Scale Third Angle Projection

BARRIER Model	C O N F I G	Voc or Uo (V)	Isc or Io (mA)	Vf or Uo (V)	It or Io (mA)	Po (W)	Ca or Co (μF)	La or Lo (mH)	La/Ra or Lo/Ro (μH/Ω)
MTL7788+/- 3 & GND	c1	28	93	—	—	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7788+/- 4 & GND	c2	10	200	—	—	0.5	3.0/20/100	0.91/2.72/7.25	74/310/627
MTL7788+/- 3 & 4	d	—	—	28	294	0.92	0.083/0.65/2.15	0.33/0.99/2.64	25/124/253
MTL7789+/- 3 & GND or 7 & GND	h	28	46.5	—	—	0.33	0.083/0.65/2.15	16/63/133	106/393/781
MTL7789+/- 4 & GND or 8 & GND	h	28	0	—	—	0	0.083/0.65/2.15	—	—
MTL7789+/- 3 & 4 & 7 & 8	j	—	—	28	93	0.65	0.083/0.65/2.15	4.2/12.6/33.6	56/210/444
MTL7789+/- 3 & 4 or 7 & 8	k	—	—	28	46.5	0.33	0.083/0.65/2.15	16/63/133	106/393/781
MTL7796+/- 3 & GND	c1	26	87	—	—	0.56	0.1/0.77/2.6	4.91/20/40	64/239/505
MTL7796+/- 4 & GND	c2	20	51	—	—	0.26	0.22/1.41/5.5	13/51/108	136/501/1014
MTL7796+/- 3 & 4	d	—	—	26.4	138	0.81	0.096/0.74/2.48	1.94/8.5/16	34/136/282

System Certificate No.	Scale	N/A
Certifying Authority: FM	Sheet	10 of 10
Title	Drng. No.	SCI-942
MTL7700 SERIES BARRIER CONTROL DRAWING		